

Manual 5/21-22/79

HENRY GEORGE MURAD

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9822 Bridle Ridge Court, Vienna, Va.	7
USAF	
General Engineer	8
About 3 months with USAF	
14 years with USNavy - May 1965	
Master Degree in Inorganic Chemistry, U.Maryland, 1957	
B.S. Chemistry, Utica College of Syracuse U.	
6 months service in Army	
First employment after receiving Master's Degree - USAF at Griffiss AFB, Rome, N.Y.	9
General chemist - till Sept. 1963	
Taught various chemistry courses at Utica College, till 1965	
Basically analytical chemistry at Griffiss	
Analyzed samples of air, water, soil, for trace concentrations of different elements and/or compounds	10
Intelligence gathering purposes	
Chemistry Unit working for Intelligence and Reconnaissance	
At Utica College, taught general chemistry, nurse's chemistry, organic and research chemistry, special research projects	
Learned minimal amounts about asbestos while at Griffiss or while teaching	10
Knew asbestos did not burn and was very inert to chemical reactions and was used as high-temp. insulation	10-11
Did not learn anything about health hazards during that period	11
Had to know the basics about hazards presented by the materials he was handling - did not research into this subject during period up to 1963	11-12
1965 went to work for the Navy at Marine Engineering Lab., at Annapolis, Md.	13
Part of Bureau of Ships	
Did R&D in area of ship's machinery	14
Inc. heavy machinery for propulsion and ship silencing	14
Don't know if it was nuclear or not	
He was involved in fluid processing lab. and work in submarine atmospheres and boiler water treatment	
Was there 1½ years	15
Concerned with keeping submarine atmosphere as habitable as possible	
Had no concern with asbestos in the air during the time he was there	
Went to Naval Ship Engineering Center, then in Washington, now in Arlington, Va.	
Working on water treatment systems and fire-fighting chemicals	16
Work was more that of an administrative type of engineer	
Was there about 3 years - till Sept. 1969	
Very little concern with asbestos during that time	
Was concerned with asbestos - a little re. fire-fighting	17-18
Also re. high-temp. insulation	
He was in charge of dealing with specs. for all kinds of insulating material, thermal insulation primarily - some sound and a very little electrical insulation	18
Was called Chemical and Toxicology unit - Nov. 1966- Sept. 1969	19
Wrote specs. and standards for various chemicals used on board ship	
Fire extinguishing agents, water treatment chemicals and techniques	19
Insulation was not involved during this 3 year period	

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During 1966-69 his only connection with asbestos was re. water
filters in treatment systems for propulsion plants 20
Cooling etc., not drinking water
Sept. 1969 went to Coatings Unit of NSEC 20-1
1969-Oct. 1972 21
Concerned with specs. and standards
Was Materials Engineer
Boss of Coatings was Supervisory Engineer, Ed Morganstearn
Reported to Morganstearn 22
6-7 people in coatings unit
Involved with insulation materials and ablative materials -
peels off on exposure to great heat, thereby absorbing heat 22
Predecessor was Tom Pugielissi - had been there 3 years
Bob Seith prior to Pugielissi - don't know for how long 23
Duties were to maintain optimum insulation materials for use on
board Naval Ships
Insulation for piping, hull, machinery - not electrical
Thermal and acoustical 24
In 1969 standards existed
No previous familiarity with insulation standards 24-5
Came to this position because a successor for Pugielissi was needed 26
1969 Was already a program under way to reduce or eliminate asbestos
in insulation - this started approx. fall of 1968
Knew about this program before he went into coatings
Cherowbrier had asked him if he had worked with asbestos in any
of the work he was doing at the time 27
Cherowbrier worked in chemistry and toxicology unit
Was trying to determine where asbestos was used on board ship
and to what extent
Said there was high level interest in determining this
There was an article in the NYTimes or Washington Post about the
alleged dangers of asbestos 28
This was the first he heard about alleged dangers of asbestos
He had not seen the article referred to
Told Cherowbrier they used a small amount of asbestos filters in
some cooling treatments 28
Cherowbrier was a chemical engineer or materials engineer in
chemicals and toxicology unit 28-9
Cherowbrier asked him about asbestos officially one time and
mentioned it unofficially from time to time in conversation 29
Part of his job - had other duties in fall 1968
This was his only involvement with asbestos until moving to coatings
unit in Sept. 1969 30
1968-9 his only contact with the asbestos program was in talking
with Cherowbrier or people from Philadelphia who came down, who
were working in it
Phila. div. of NSEC dealt primarily with ship machinery - propulsion
plants 31
Sept. 1969, read about insulation, read some specs., referred to
reference books, talked to people in and out of the Navy
Talked with piping section, boiler section, refrigeration, people
who actually applied insulation
No other section dealt with hull insulation
Piping, boiler, and refer. sections were all in code 6140 32
All part of NSEC
Concerned with standards and specs. and dealt with operation of
equipment in piping, boiler and refer.

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When he took his position in Sept. 1969 there had been some
work done re. asbestos elimination 32
Cherowbrier had looked into the places and extent of asbestos use 33
And continuing to do this
Learned later this was with the overall goal of trying to reduce
the amount of asbestos in those places where it must continue
Was primarily Cherowbrier's job for Naval ships 33
Witness was to work with Cherowbrier in this overall job
Was a lot more to overall insulation than just asbestos 34
Inc. flame-retardancy, fire hazards connected with organic
insulation - polyurethane, polystyrene, etc., and paints and
certain fabric
Asbestos was just part of what he was looking at
Had no formal order of priorities
Informal priorities change depending on pressures from higher up 35
Priority of asbestos varied over the 3 years
Other things such as fire hazards, problems with attaching hull
insulation, etc., varied the pressure re. priorities 35-6
He was told about the asbestos program as soon as he took over
the job - always considered important but didn't work on it
constantly 36
Hull insulation - surface ships, fiberglass - submarines, foam rubber
Had problems re. refrigeration compartments; for protection of jet
blast deflectors from high temps. and high velocity of F14s;
developed coating for deflectors to prevent them from melting 37
Many little problems with antisweat materials, accoustical problems,
etc.
Got involved in high temps. in the fire rooms 38
All these things included revision or new specs. as appropriate
He had a little of both developing new materials to solve problems
and also making decisions re. standards and specs. and paperwork
Specific case - asked Puget Sound Naval Shipyard to survey the
field for a product which would satisfy requirements 39
Requirements were set based on info. from carrier type desk and
NSEC and worked with NAVAIR and Naval Air Engineering Center
Then tested materials selected, small and full scale
Worked with different people to do testing
This is one way to solve problems
Another way - get information from industry and work with them
to come up with materials 40
Work with ASTM, etc.
Much has to do with what funds are available
Funds were available to work on the deflectors referred to
He worked as coordinator on some jobs 41
Generally he would just recommend a solution to his bosses 41-2
Decisions might be made at NSEC or higher 42
Were trying to reduce the amount of asbestos used on Navy ships
for insulation
Were told there was allegation that it was a hazard
He was not involved in investigating such allegations 43
Accepted it as a problem and tried to solve it
Ran through all ships
Don't know if problem applied to aircraft as well
or structure, buildings, etc.
Objective was the same for submarines and surface ships
Specs. identify particular materials; standards give procedures
on how to use materials 44

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Used mainly performance specs. for materials 45
Did not necessarily call for use of asbestos
Other than asbestos, did not know of any materials which would
do the job 46
Asbestos is used for high-temp. insulation
Not talking about hull insulation
Tried to learn of materials with lesser amounts of asbestos, or
with no asbestos, which would still do the job 47
By fall 1972, when he left the coatings div., they had not found
all nonasbestos containing materials which would do the job
for high-temp. insulation 47
Had been able to reduce the amount of asbestos in some batting
and pipe insulation and boiler insulation materials
Had to maintain performance requirements 48
Did not reduce the performance requirements in the specs.
Towards the end of this period, had a task going in California
on a ship to see if a non-asbestos high temp insulation could
do the job of asbestos material 48
This was the only task he is aware of done by the Navy in this period
Don't know if there were any questioning in the Navy as to whether
asbestos elimination was really necessary 49
He was party to writing an instruction citing procedures to be
used when working with asbestos
Co-authors were from NAVSHIPS, code 07, shipyard resources; 50
Ed Cherowbrier; people from safety area of NAVSEC.
Shipyard resources - manpower and equipment 51
Man from 07 was Jerry Crawford - Cherowbrier was working with him 51-2
Safety people from NAVSEC - Larry Farina 52
Instruction was based on a survey done by NSEC, Phila., in
connection with the work Cherowbrier was doing with Phila.
Phila. had gone to the Naval shipyards to determine extent of
asbestos use and how to keep asbestos fibers to a minimum in
the environment 53
Don't know if this was just Naval shipyards
Don't know what the distribution of the instruction was to be
Phila. survey had begun prior to his transfer to coatings 54
Was begun back in fall of 1968
Instruction was completed while he was with coatings, and was
issued
Sometime later he visited a few shipyards to see how they were
adhering to that instruction 55
Boston, Portsmouth, Norfolk, Charleston
No other involvement with how asbestos was used in the field
Witness and Cherowbrier were doing the work in the asbestos program
Supervisors were also directly involved because they were supervisors
Witness immediate boss - Ed. Morganstearn; Cherowbrier's boss
Frank Lovell 56
Don't know reason for Cherowbrier's leading involvement in asbestos
Cherowbrier had chemistry background
He was not as much involved in actual writing of specs. as
witness was
Got involved with contractors, mfrs., suppliers to gather info. 56-7
No clear cut division of things that witness or Cherobrier would do 57
Cherowbrier is retired from the Navy - sometime after witness
left coatings
Fall 1972, went to work for Naval Ships Systems Command - materials
engineer - changed to general engineer 57-8

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Assignment changed - design services
Co-ordinated design and engineering work associated with fleet modernization program 58
This was not a promotion - wanted to work closer to home
Was replaced in some aspects of the job, by Winer
Winer took over the asbestos work
Cherowbrier continued to work with Winer 59
Winer also took over some hull insulation and fiberglass
After leaving coatings - no further association with asbestos and its problems
Birnbaum was second-level supervision
Morgenstearn and Lovell's boss - Section Head
He was one of the Navy reps. on American Society for Testing and Materials, while in coatings div.
Group who work in industry and govt. on materials used in construction and shipbuilding 60
Set mutually agreed upon standards and testing procedures
Large number of sections
He was in insulation section
This was just while he was in coatings div. - as a Navy rep.
Was involved with ASTM while he was in water treatment - they have a water treatment section
Was involved with NIMA - used to clear specs. with them to ensure that performance requirements set forth, were attainable 61
Mr. Pugielissi, his predecessor, still with Navy, in air conditioning unit, NSEC
Last saw Bob Seith about Aug. 1972 - was still with Navy then, NSEC
Brought no documents in response to notice for deposition - has nothing 62
These pertained to coatings section - was last there in 1972 63

Was no stated program to remove asbestos 64
Was an objective - elimination would be the ultimate
Did not get involved in trying to eliminate asbestos from electrical components
He was limited to thermal insulation 65
Asbestos gaskets would not come into that category - had no duties re. finding substitute for asbestos gaskets

His activity re. asbestos was from 1969-1972
Instruction re. working practices with asbestos - was a party to this 66
Was involved in updating - revised several times before it was signed out
Instruction was to keep asbestos fibers in the atmosphere to a minimum and reduce chances of workers in immediate area from breathing in asbestos 66
Wet down area before ripout
Wear respirators
No smoking during ripout 67
Insulation to be cut out with special shears - not ripped out by hand
Air to be monitored for asbestos content - 5-50 microns 67
Special clothes - special way of laundering
Coveralls, gloves

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Identifies copy of this Instruction NAVSHIPINST 5100.26, 67-8
Feb. 9, 1971 68
Went to many of the Navy operating divisions - instruction
Study which resulted in this instruction started in late 1968
Involved work by several individuals
Study was done by Cherowbrier 70
Coordinator
Phila. people at NSEC, Phila. did the work
Cherowbrier went with them to some of the Navy shipyards
Witness was not directly involved with the survey work
Don't recall if there was a file for this study work 71-2
Don't recall which shipyards were visited - Phila. was one 72
Don't know if contract yards were visited
Instruction was drafted and revised several times 73
Don't know if the Navy had any instructions re. work practices
with asbestos in Navy Shipyards, prior to Feb. 1971 74
He did not look at any prior instructions re. work practices
He visited shipyards, Boston, Portsmouth, Norfolk and Charleston,
after Feb. 1971 74
Visit to Norfolk was late 1971 or early 1972
(Instructed by counsel not to answer questions re. observations
made at the shipyards) 75-82

1965 asbestos was not touched upon during his work with the
Lab. in Annapolis
Asbestos was not monitored re. breathing air for sub. crews 82
Don't know if asbestos was monitored elsewhere in 1965
Asbestos filters were used in water treatment of boiler water,
to filter any particulate matter 83
Believe the filters were in a housing - don't know if they could
be changed without a shipyard visit or not 84
Coating unit was 6-7 employees in 1969 - no secretary
There was a secretary for the section, coatings and chemistry &
toxicology units 84
Witness was individual from coatings involved in the asbestos
elimination effort, with Cherowbrier from Chemistry & Toxicology
Cannot give % of time involved with asbestos on ships 85
1969-72 spent about 10-15% of his time concerned with asbestos
on ships - guess 85-6
Don't know Cherowbrier's % 86
Cherowbrier first approached him about asbestos in fall of 1968
when witness was at Ship Engineering Center 87
Said some admirals were interested - did not identify them
Article in the N.Y. Times or Washington Post was shortly before
Cherowbrier approached him
Witness does not recall when he actually saw the article
Initial conversation with Cherowbrier was short, 15 minutes;
Got impression at that the study re. asbestos on ships had
already begun 88
Did not discuss any of the work done at that time
Goal was to determine where and to what extent asbestos was
used on ships
He was told there was an article in the paper by Selikoff which alleged
that asbestos was a health hazard 89
When he went to coatings unit, read or referred to some reference
books to do with thermal insulation - don't recall titles 90

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Books had to do with thermal insulation properties not with health 90
Was involved in all high-temp. insulation, not just on pipes 91
Boilers required asbestos insulation
Foam rubber on sub. hulls did not contain asbestos
Glass insulation in the hull did not contain asbestos 91
Cherowbrier never worked at Phila. - retired from Washington, NSEC 92
Witness had visited shipyard prior to Instruction 5100.26 being issued 92
Not to do with asbestos
Often wrote trip reports about such visits - don't know if these are still available - he does not have any
Never maintained a private file at home re. work with coatings 92-3
Is not presently a member of any professional association 93
Was a member of the American Chemical Society, around 1963-65
May have been a member of Society of Chemical Engineers for a year
Probably when at NAVSEC - not sure
Don't know of anything called a deficiency report re. asbestos control in shipbuilding 94

Reviews some documents - 3 documents 96-99

Was his job to try to maintain mil. specs. up to date 99
Performance spec. primarily addresses the requirements to be met by the material
Could also have a spec. that dealt primarily with characteristics and composition of the material 99-100
Often a cross between the two - performance and part of composition 100
In a spec. which called for characterisation of the material there was not substitution allowed for
Documents - MIL I-15091C Insulation Felt, Thermal, Asbestos Fiber
This is a cross between performance and exact composition
Gives some indication of composition and also lists properties that the material should perform
Says that it covers asbestos fiber felt
Would have to be either plain or water repellent as stated
Would have to have asbestos in it 101
Marked Exhibit 2 - 16 pages 102
Second document - "Cloth, Thread & Tape - Asbestos"
SS-C-00466D (Navy Ships,) June 19, 1962 - Exhibit 3 102-3
Third document - follow-on of second document
SS-C-466E Interim Amendment - 1 (Navy Ships), 17 June 1965, Ex. 4 102-3
These are mil. or fed. specs.
Both are compound specs. - characteristics and performance
Asbestos in all of these - no substitute allowed for 104
If a supplier was complying with these specs. he would have to meet them - calls for product containing asbestos
He reviewed MIL standards 769 describing procedures of how insulation products should be used 105
Did not draft the whole thing
Standard would have to be invoked by the ship spec.
Standard 769 would tell the reader what set of specs. could be used for specific purposes 105-6
Would give instructions on how to apply insulation aboard a sub. 106
Believes it also instructed how to remove asbestos insulation aboard ship
Was not the sole source of instructions

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He reviewed instruction 5100.26 during its preparation 106-7
He was one of several reviewers 107
Also reviewed Mil Standard 769, and others
Centered around kind of material to use and how to use it 108
Al Munkrees and Joseph Amore were also involved in reviewing
Lovell and Morganstearn might look at them from time to time
Also Cherowbrier
Would review them if there was something significant to change 109
Munkrees was in piping section - almost all piping on ships had
to be insulated
Piping section was code 6153 F
Don't know when it started up 110
Don't know if they did tests on insulation for ship pipes
or if they participated in studies
Munkrees is now retired
Amore was still with the Navy several months ago 111
Thinks he was in refrigeration - code 6153 C
Chief of a section or a unit
Don't know his background
Generally anyone with any involvement in an instruction, in use
of it, would see it 112
BUMED had input to instructions - worked with Cdr. Sam Barboo
Don't know Barboo's background
Talked with Barboo about the asbestos situation - first time was
probably late 1969 or early 1970 113
Re. use of asbestos on ships
Formal meetings - kept no notes 113-4
Cdr Barboo's boss was also involved in reviewing standards
Don't recall name - he was a Captain 114
A change would be initiated by one interested person - this
would have to be reviewed by people in other areas
Would go from one desk to another
Was no formal getting together of people to work on a piece of paper 115
Re. asbestos insulation on Navy ships, his dept. would be involved,
also safety office and boiler people and piping people
Change would have to be sent through specifications, 6120 116
Specifications would send it to others involved in govt.
and out to industry to make sure that industry could supply
the material described 116
Industry people would sometimes initiate a change - such suggestions
were considered
Depending on the spec. other govt. people would be contacted -
in case of a fed. spec., might be used for land construction
as well as for shipbuilding 117
Worked with GSA, Army, Air Force, etc.
No other govt. dept. would be involved in writing specs. for
asbestos insulation aboard Naval ships
Spec. Review Board would have ultimate approval - no particular
office - made up of people from NSEC now called Naval Sea Systems
Command - Crystal City 118
Each major directorate in NSSC has a representative on the review
board, 04, 06, 07
About 4-5 people from NAVSEA, 2-3 from NAVSEC
Witness has made presentations to the review board - don't remember
the particular specs. involved 118-9
Might have dealt with asbestos 119

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Combination of written and oral presentation 119
Don't know if copies are maintained
He kept copies of written presentation
Written presentation consisted of the change he wanted and any
comments by people who reviewed it 120
Was a formal proceeding
Secretary took notes
Received copy of minutes of the meeting which may have covered
6-7 different specs., one of which was his 120
Don't know where these minutes are kept
There was no avenue of appeal from the Review Board 121
Don't know of other documents dealing with asbestos insulation
other than mil. or fed. specs. 122

Was not concerned with asbestos in the atmosphere during his
work with submarine atmospheres, or with dust 122
When he joined the coatings division he talked with a number of
mfrs. and suppliers, to learn about insulation 122-3
Talked with GSA sometimes and with people at shipyards 123
Probably at all the Naval shipyards over a period of time
Usually spoke with people in shop 56 - insulation dept.
Occasionally spoke with insulation people at private yards 123-4
Spoke with Newport News
Don't recall speaking with anyone at Electric Boat, Groton 124
Don't know of any written document outlining asbestos elimination
program
Don't know if individual yards had their own elimination program 125
Priorities would be indicated by his immediate chain of command
Morganstearn, Birnbaum, Alfors - military head, Cpt. Ryan
and Cdr. Smoot 125
Everything was oral - no written memo.
Cherowbrier told him about the alleged allegations that asbestos
was harmful 126
Believe there was a task in Hunter's Point, Cal., to determine
if nonasbestos products could do the job
Using a non-asbestos material to see if it could do the job in
high temp insulation purposes - on piping and propulsion plant 127
Don't know where Jerry Crawford is now working
Mr. Farina was with NAVSEC, Washington area 128
Still at 6105 - don't know title
Don't know of anyone involved in instruction re. asbestos who
visited Electric Boat, Groton
Observed a ripout for a short period - don't recall which shipyard
Probably 1970-71 129
While he was with coatings
Has not met with anyone other than attorneys for this depo.
Has not heard of Shipbuilders Council of America

Don't know when chemistry and toxicology unit was first set up 129
First became aware of it in fall, 1969 130
One of his first meetings after he joined coatings, was with
J-M, Porter, Cherowbrier and Birnbaum
To talk about procedures to be used during ripout and talk
about trying to reduce asbestos content in high-temp. insulation 130-1
1969-72 most specs. dealt with were performance type
Some were mixture of performance and characteristic 131

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Reviewed SSC-466 during that time - looking for ways to
reduce % of asbestos in insulation 131

Considered eliminating asbestos from it, but at that time there
was not other material which would be satisfactory 132

Man called Morty something, in Phila., was involved in the study
there 132

Also Cherowbrier

NSEC, Phila. did the study - under Sam Greenberg's area

Don't know if there was an actual report

Knew of the study through Cherowbrier and had an idea of the results 133

Ship spec. is description of the characteristics of a specific
ship that is being acquired by the Navy

In working with SS-C-466 were trying to use the lower of the
two types of asbestos described therein 133-4

UG is 80% asbestos, double A is 90%, Triple A-M is 95%, AAA is 10% 134

Became involved in this in fall of 1969 - worked with Cherowbrier
and Morganstearn and Birnbaum and Alfors 134-5

Relied to a large extent on industry to find a substitute product 135

Mfrs. reps. would visit and apprise them of latest materials

Some info. would come from ASTM and NIMA

NIMA is a group of mfrs. who provide products for the common good
of the industry - insulation industry - all kinds, not just asbestos 135-6

He never attended any NIMA meetings 136

Received letters sometimes, giving NIMA's position on certain
specs. sent to them for review

Don't know if received NIMA comments on SS-C-466

Had used glass cloth as a substitute for asbestos cloth for certain
projects - in-house

One project - had to remove a foam rubber insulation (antisweat)
from cold water lines to test integrity of the pipes 137

Devised technique of building a sleeve for the pipe to be tested
from time to time, and covered the rubber insulation with glass
cloth instead of asbestos cloth

This worked, to his knowledge 138

Started this in May 1972 - was working well when he left

The cloth was more as a fire retardant than as insulation

Not aware of tests of low asbestos cloth or nonasbestos cloth
on hot pipes or high-temp applications in connection with 466 program 139

One of the reasons they did not substitute cloth under 466 spec.
was because they couldnot find a material which would hold up
to the requirements

Wanted good insulation and something that would hold up under
stress of abrasion on board ship

When they started out, they were told that only asbestos would
do this 140

Various mfrs. told them this, and suppliers of insulation

They were initiating some tests in the summer of 1972, just before
he left 140

1969-72 his dept. or the govt. performed no tests of asbestos-free
or low asbestos cloth - relied on industry

Reports were mainly oral - nothing written that he would consider
a report 140-1

Received from various mfrs. and suppliers' reps.

Inc. H. K. Porter, who said that a certain amount of asbestos 141
was needed to provide the kind of material which would withstand
shipboard use 141-2

Don't recall any conversations with Porter rep. re. asbestos and
health

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Also talked with people from Pittsburgh Corning 142
Local rep., now dead, and man from home office
Told that P-C were sponsoring tests at U. California to
determine health hazards 143
Was told that tests basically coincided with Selikoff's work
Local rep. would visit every couple of months - discussed
any problems of supply or anything dealing with specs.
Re. any products, inc. asbestos
Don't recall any specific discussions with local rep. re. health 144
Mr. Sinclair, dec'd - was previously at Anapolis, Navy
Man from home office came to Washington area
Recalls meeting where this person requested time for the U.Ca.
tests to be completed before revising any of the specs. 145
Changes re. reduction or elimination of asbestos
Estimated tests would be completed in a few months - took a
little longer than estimated but it was completed 145-6
Don't recall that any recommendations re. substitution were
made as a result of that study 146
The meeting was with Cherowbrier, Capt. Ryan, people at BUMED
Sam Barboo and his boss - not other mfrs. reps.
Mfrs' reps. came into the office now and then - no schedule 147
Sept. 1968 attended a meeting - requested to do so by Birnbaum -
dealing with reduction of asbestos in insulation and procedures
during ripout 148-9
People from Porter and J-M were there 149
Were told that they had to continue to use asbestos in high-temp.
insulation - no known material would stand shipboard use
Mfrs. reps. told them this 149-50
Document - list on page 1 of MIL Standard 769B 150
Has provided information in connection with drafting or revision
of some of the specs. listed 151
SS-C-466 - conversations with industry re. substitutes 151-2
Trying to use lowest possible asbestos content 152
Relied on industry as to what could be done
Talked with people in piping area - Munkrees, code 6153, NSEC
Most info. came from the industry 153
Munkrees and witness tried to bring it up to date
Mil. Standard 769B was superseded by 769C and 769D
Each time trying to reduce the amount of asbestos by citing
those types within the specs. with lower asbestos content 153-4
Pg. 9 of the standard - have to refer back to SS-C-466 to see
what the cloths referred to include 154-5
He may have worked with Munkrees on changes in that standard 155
Probably discussed it with mfrs.
Received oral pitches from mfrs. 155
Mfrs.' main thrust was that asbestos was still needed and that
glass cloth would break too often 156
Mil standard and mil. sepc was tied together
Standard applies to thermal insulating materials and asbestos
materials is one thermal insulating material class 157
Navy shipyard would use that standard
A contract yard would use that standard if it was invoked in the
ship's specs. in the contract
No specific recollection of discussing that standard with any
asbestos mfr. 157
Worked on MIL C-788, brattice cloth - just cotton cloth 158
Worked on MIL I-2781 - at least reviewed it - don't remember 159
Insulation, pipe, thermal - thinks it was fiberglass

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Talked with industry on all specs. 159
Relied on industry for info., through ASTM, NIMA and by
visits from industry reps.
Did not keep records of visits by industry reps. 160
Business cards might be in the files
Was involved in many of the specs. listed
Insulation blanket, thermal, fibrous, mineral, MIL I-2818
Was involved in almost all of those listed, to some degree 161
Don't recall MIL P-15328, pre-treatment
Nor MIL B-19564, bedding
Don't recall Fed. spec. T-T-931 Twine, Cotton, Mattress
Very little in QQ-S-775, steelsheets
Not involved in QQ-W-343, Wire; QQ-W-390 Wire; SS-C-192 Cement; 162
TT-P-26 Paint; TT-P-320 Pigment; UU-T-106, Tape.
Was involved in all the others 162
Often consulted with industry during drafting and revision
After it went through the cycle within the Navy, within coordination
and review cycle, would be sent to NIMA for review by industry 163
NIMA would list reasons for disagreement, or would agree
Depending on the comments, would either drop it or incorporate
it 163
Thinks that NIMA suggested revisions to mil. or fed. specs. -
cannot give example
When he was there he kept copies of letters from NIMA 164
Usually under the spec. - in folder for that particular spec..
After NIMA input, spec. would be sent to code 6120 who were usually
involved in interface with NIMA
6120 would put it together for presentation to the Spec. Review Board
Not familiar with Asbestos Textile Institute
Would discuss change with the review board, and finally it would
be adopted and printed and issued 165
After enough amendments came out then the spec. was reprinted 165
Don't recall any instance where a spec. was drafted or revised for
a product which did not exist at the time
Or where a spec. required that a new product be made to meet it
All specs. concerned existing products 165-6
Don't recall any specific conversations re. health and asbestos
with industry or mfrs. 166
Just the one study sponsored by P-C at U. California to check
on what Selikoff published
Usually talked to marketing people
Don't think that health was ever a consideration in drafting a
spec. 167
Wanted to reduce asbestos - in connection with Cherowbrier's work
Don't recall receiving any written communication from any
mfr. re. asbestos and health
Recalls a letter setting forth some procedures for working with
asbestos, and asbestos ripout - some of which was incorporated
into the NAVSHIP instruction 5100.26 168
Believe it was a letter from H. K. Porter to the Navy 168
Don't recall when he saw this
Ex. 5 - Mil. Standard, thermal insulation requirements for
machinery and piping, MIL Standard 769B(Ships), 3 Jan. 1966 169
Referred to this standard earlier in testimony 169-70
Had conversations with reps. of J-M and P-C 170
Also talked with Porter, Eagle-Picher, Claremont; Raybestos-M
came in once; Owens-C;

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Don't recall any conversations with Cummings 171
Possibly with Amatex
Don't recall Eastern Refractories or Defense Apparel or SEPCO,
or Shook & Fletcher, or Reef Industries 171-2
Has heard name Unarco today
Recalls Unarco name - were a supplier - don't recall specific
conversations 172
No specific conversations with Westinghouse re. asbestos - may have
talked with them re. water treatment
Don't recall receiving any written material from Cherowbrier re.
asbestos substitution program 173
Remember the newspaper article being brought to his attention
Don't recall NAVEXOS P-52 174
August 1946, Vol. III, No. 8
Exhibit 6
Never saw this document before today 176
Ex. 7 NAVEXPOS P52, Vol. IV, No. 1, Jan. 1947
Never saw this before 176-7
Ex. 8, Safety Manual, Part 2, shops 56, 25, 27, Norfolk Naval Shipyard 178
Never saw it before
Ex. 9, Safety Handbook for pipe fitters - NAVORDINST 5100.21
Jan 7, 1958 179
Never saw this before
Ex. 10, NAVSO P-2455, Safety Precautions for Shore Activities
April 1965, June 1, 1967 changed 180
Never saw this before
Task at California was at Hunters Point and involved molded pipe
insulation 180
No mfr. had any hand in the testing
Material was procured from the industry 180-1
From Eagle-Picher 181
Used gas turbine
Left before test was complete - don't know if there was a report
Did not observe any of the test
Don't know if anyone from his dept. saw any of the tests 182
Worked with Munkrees of piping section on 769, revisions C and D
Talked with him re. use of insulation for their piping systems
Piping section was involved in use and application of asbestos
insulation on high-temp. pipes on board ship
Were not involved in actual installation 183
Wrote instructions and served as info. gathering and dispensing service
Info. sent to various shipyards
If a ship had a problem they came to the ships logistics managers
or to appropriate Naval Ship Engineering Center engineer involved
Don't know if this section had responsibility for private yards
with govt. contracts
Don't know who is in charge of that department now 184
When he worked at NAVSEC the phone book had a brief description
of what a dept. or office did - dept. could consist of several
divisions, branches, units 184
He had a formal job description in the coatings unit
Don't know where that is 185
Recalls - to work with insulation materials, try to provide
best insulating materials for both thermal and acoustical
insulation materials for use on board ships 185
Job descriptions did not go into details re. drafting of specs.
When he was in water treatment, provided Naval Nuclear Engineering
with info. developed and maintained on water treatment

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Naval Nuclear provided him with their water treatment manual	185
Had a little contact with Nuclear re. insulation	
Received a letter from Nuclear re. status of insulation	
materials - responded to this	186
Don't recall date - probably late in 1970	
Don't recall that health was mentioned	
Was concerned with performance of the material	187
Gave them status of what was being done, inc. specs.	
Thinks he said that progress was about as expected	187-8
Towards reducing asbestos content in high-temp insulation	188
Nuclear never provided any input towards this goal.	188

//

Piping section wrote up standard 769 and cited various specs.
of materials to be used for lagging pipe 197

Pipe lagging was done at the Navy shipyards for overhaul and repair
He saw various installation procedures of all kinds of
insulation on board ship, during various visits to shipyards 198
Both on surface and submarine vessels
Sometime after 1969
Saw mechanics installing insulation on bulkheads, hulls, piping,
boilers 199
Saw preformed pipe insulation being installed - take out of box,
set it on the pipe, secure with wire or tape - sometimes
put lagging cloth on it with glue
There are pretreated cloth - already treated with adhesive -
wet it
Don't recall if he saw anyone wearing respirator 200
He was not wearing respirator when he saw this
Sometimes work area was partitioned off
Don't know if other trades were present working while insulation
was applied
Many of these observations were before OSHA regulations 201-2
Visited Charleston in Feb. 1972 - didn't see much - got sick 202
Don't recall ventilation equipment on board ships 203
Observed installation of boiler insulation sometime after 1969 204
Saw that lagging was on the boilers - was guided through by
someone from shop 56
Saw high-temp. insulation being used, containing asbestos 204-5
Cloth and batting on outside - asbestos felt 205
Saw it after it was installed
Was shown how wire were twisted to secure it
Don't recall any other type of insulation he saw applied - asbestos
Visited the ships primarily for his own education
Shipyard visits were usually re. insulation - took time to visit
ships while he was there 206
Naval Ship Technical Manual would contain instructions for
installation of asbestos insulation
Issued to all ships and Navy shipyards and is accessible to
private shipyards
Available to anyone with legitimate need 207
Don't know exact procedure for distribution
Understood anyone could go and buy it
Don't recall seeing any publications from BUMED re. asbestos
Don't know origins of mil. specs. 208
Has worked on developing new specs.
One in particular on fire-fighting foam test kit
Simply described the test kit definitively enough so it
could be bought from industry
Purpose of a mil. spec. is to describe a material which the govt.
may want to procure 208
Involves classification
Never heard of SSP
Military standard is a document that describes where certain
spec. materials may be used in operational situation 209
Some include instructions on use or application
Don't know origins of mil. standards
Whereever possible specified insulation containing the lower or
lowest asbestos content that could be used 210
Reduced the asbestos content in batting and boiler insulation

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This took some time 210
Spec. change was not necessary because there were already
various types of materials identified in the spec. 210-11
Revised mil. standard to provide for use of products containing
less asbestos 211
Would be one of the C or D revisions
Dept. code 6105 safety, may or may not be involved in a spec.
revision 211-12
Worked with any Navy code or outside people who had an interest
in the spec. 212
Initiator of the change would make the initial determination as
to who would be interested
Checked with safety personnel on a number of spec. revisions 213
Don't know if it was oral or written
Many were from fire hazard standpoint
Cherowbrier dealt with Larry Farina in 6105 on asbestos 213
Ben Leota was the top person in 6105
Leota and Farina are both still in 6105 214
Also dealt with Jim Hughes on fire hazards, and couple of other
people on various material problems with safety requirements
Code 07 was concerned with shipyard resources and participated
in drafting instruction marked as Ex. 1
Resources is manpower and equipment, inc. men installing insulation
Navy shipyards only at that time - during his tenure 215
07 did not have responsibility for Supervisors of Shipbuilding
1969-72
Don't know of any connection between 07 and SUPSHIPS at that time
Today 07 has responsibility for Supervisor of Shipbuilding 215
This was in 1974
When NAVSHIPS integrated with NAVORD to become NAVSEA 215-6
Original SUPSHIPS appears to have been included on the distribution
list for Ex. 1 Instruction 216
Don't know if mfrs. had input to Cherowbrier's study started 1968 218
Barnhart was exec. secretary of NIMA - signed letters re. NIMA
position on specs. or other insulation matters 218-9
Don't recall specifics 219
Mfrs. of asbestos products generally took the line that there
was not any better choice at the time 220
Mfrs. of non-asbestos insulation took the line that their high-temp.
products were just as good
Don't recall any instance where a mfr. of asbestos products brought
him a nonasbestos substitute 221
Talked with Heard of Owens-Corning re. asbestos free products
Heard may have mentioned that cal. sil. and fiberglass could do the
same job as asbestos
Do not specifically recall Heard or anyone from his office
suggest the change to asbestos free product 222
Discussed asbestos free products with Johns-Manville, Bert Tower 222
Probably spoke in general terms - don't recall a specific
substitute which was available 222-3
People from Raybesto-Manhattan came by once or twice 223
Talked with H. K. Porter - don't recall if they had any idea
of a substitute 224
Brought in lower asbestos content materials or materials which
resulted in lower concentration of fibers
Tests they showed were not very valid 224
Tests were by Porter or contracted by them
He felt the tests were superficial 225

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Eagle Picher people came in now and then 225
Had a material that was high-temp. insulation which was cited
in a fed. spec. - claimed it could do the job
He had reservations about it - seemed too friable and would
chip too easily, resulting in particles in the air 225
Finally able to test it, and used the product on the surface
test ship previously mentioned 225-6
Don't think the material had any asbestos in it
Existing fed. spec. already described that material - HH ?
Spec. is not included in the list, Ex. 1 226-7
Don't know if Mil Standard 769 was revised to inc. that spec.
Talked with man from Claremont re. asbestos free 228
He said glass cloth could withstand rigors of shipboard use
Rewettable could be used in same way as asbestos rewettable
Sold to Portsmouth Naval Shipyard
Claremont glass cloth used in task involving removal and rapid
replacement of insulation for cold water piping 229
Think some shipyards were using that cloth at that time
Don't know if anything was done to specs. re. this cloth -
passed along the info. to Cherowbrier and Winer 230
Test was still in process when he left
People at Portsmouth were writing up a procedure for use
Don't recall specific conversation re. substitution with UNARCO
or with Westinghouse, or Amatex
Robert Roy was the man from Claremont
Met him in connection with the glasscloth 231
No other discussions
Never visited any facilities of asbestos mfrs. 232
Admiral Rickover is head of nuclear reactor directorate, code 08 232
Had dealings with that dept.
No records of such dealings
Dept. plays a role in drafting mil. specs. and standards
Don't recall names of those he dealt with 232-3
Dealt with some of them re. water treatment 233
Received one letter from Rickover asking about progress in
the asbestos situation
Responded - said they were essentially on schedule 234
and were doing what they had said they would do
Don't recall any instruction from 08 to embark on asbestos
substitution program 234
Qualified Products List is a list of mfrs. with products
qualified by presenting as described in a portion of the spec.
to serve useful purpose to the govt. 234
To get on QPL, mfr. must submit samples of products described by
a spec., to a testing facility agreeable to govt., products
must pass the tests written into the spec. 235
Worked with 6124 in making up the list
Tests were sometimes performed by mfrs. themselves, sometimes
govt. did tests 235-6
Purpose of QPL was to have available a list of mfrs. that could
supply materials needed by govt. or Navy on short notice 236
To expedite the procurement process
Understood that insulation products on the QPL were used in other
aspects of fed. govt. and also outside of govt. or military 236-7
Various mfrs. reps. told him this
Received catalogs and sales brochures from mfrs.
Would receive info. that certain mfrs. products met particular
mil. specs. 237-8

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Don't recall if that info. would be on a list or in the brochures 238
Usually a separate document
Often looked like it was pulled from a bigger set
Had information correlating mfrs. products with specs. -
don't know how complete it was 238
Mfrs. and suppliers would give them this info.... 239
General insulation information - would put it in the folders
based on material type 239
Last saw such folders 6½ years ago - don't know where they are now
Has been to shipyards at Puget Sound, Maryland, Long Beach 240
Several times to Puget Sound-Bremerton 240
First time was on jet blast deflector coating problem in 1972
or fall 1971
Went several times on that job - may have gone in spring 1971
At Puget Sound sometimes stopped in to observe dept. 56, insulation dept. 241
At least once
Don't recall if he went on ships 242
Don't recall much about that department - thinks they had a pretty
good shop - well run - cannot recall specifics 242-3
Believes he visited the actual shop 243
Went to Maryland shipyard about 2 years ago - nothing to do with
insulation - did not observe any insulation activities
First went to Long Beach yard in Dec. 1972, after finished working
with insulation coatings - did not look at any of their
insulation work 244

Also visited Phila. shipyard many times 245
NSEC Phila. was there - visited many times for water treatment 246
Naval Air Engineering was there - visited 2-3 times re. jet blast
deflector
Various quick tests were going on there
Visited Phila. many times for the design div. since he left
insulation area
Never visited Pearl Harbor yard
Don't know if he observed workers using asbestos products while
on any visits to Phila. or to other Navy facilities 246-7
No specific recollection
Don't know if he met Roger Beckett at Puget Sound 247
Asbestos reduction program was not specially funded
Never saw a specific program 248
Were orally asked to try to reduce asbestos in high-temp.
insulation and mission funded to work on specs.
Fell within the general purview
Don't know if a written task was given to Phila. re. the asbestos
program
Was a job description for each assignment he had with the USN
None of them mentioned asbestos reduction 248-9
Did not receive written reports from any USN agencies re. this
task 249
Cherowbrier may have received such reports
Normally there is a report when a field activity is asked to do
a job
He did not receive any such report - possible that he saw one
Yesterday Mr. Levy - attorney - mentioned a letter from Phila.
Shipyard which triggered his memory that there may have been
one or two such reports 250

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Has not talked with anyone else except Levy and Mowinski 250-1
Did not receive any reports in connection with the task assigned
to him 251
Or review any reports that others had, except possibly
Cherowbrier 252
He would sometimes write trip reports
Wrote letter in response to 08's letter addressing status
Did not write any other reports
Prepared no recommendations other than changes to specs., standards,
the instruction and the Naval Ships Tech. Manual 252-3
CNO is Chief of Naval Operations - HQ of the Navy 253
Navy Material Command reports to CNO
Material Command has several systems commands reporting to them
Biggest was Naval Ship Systems Command
Also Naval Air Systems Command, Naval Ordnance Systems Command,
Naval Electronic Systems Command, also Naval Supply Systems
Command 253
He and Naval Ship Engineering Center would report to NSSC
Divisions of NAVSEC reported to HQ NAVSEC
Phila. div. was one of those reporting to NAVSEC
The OPNAV instruction referred to previously was a NAVSHIP
instruction 254
O7D instruction signed out by Dolan who was O7 at that time
Witness' input to Ex. 1 instruction would have gone up the
command chain to be incorporated by HQ 254
Received oral direction from his immediate superior re. asbestos task
Had no contact with Naval Air Systems re. asbestos task 255
Don't know if Cherowbrier did
Had no contact with Naval Ordnance 255
May have been a little interface with Naval Supply Systems
To determine how much asbestos was available and try to get
them to reduce procurement of high asbestos content material
Naval Supply procures material directly for use by shipyards 256
Mechanicsburg, Pa. supply depot would be under their supervision
Also responsible for inventorying and stockpiling material
No contact with Naval Electronics Command or with Naval
Environmental Health Center
He had asked the Annapolis lab. to review asbestos specs.
Cannot think of name of person he worked with 257
Task was reduced to a brief written description
No tests per se - job was to review specs.
He did not receive written advices of this review - don't
know if any were prepared - was towards the end of his tenure
Had something started in Aug. 1972 258
Specs. would not be changed until the Navy was assured that the
change would still satisfy Navy needs
USN did not retain any independent labs. or consultants in connection
with this task
Don't know if Navy worked with other military service organizations
He had no such contact and is not aware that Cherowbrier had any 258-9
Had no direct contact with OSHA - don't know about Cherowbrier 259
Did not attend any symposiums or seminars by any U.S. agency re.
the task
Attended ASTM meeting in Oct. 1971 - working group
At Hershey, Pa. 260
Re. setting of standards - broadly speaking

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Meeting at Hershey - discussed ways to improve testing of insulation materials 260
Informally discussed ways to reduce amount of asbestos or eliminate it
Holtgren is now associated with 04F 261
Spoke by phone - knew him from before
1969 Holtgren was in 6120 of NAVSEC - first met him there
Later Holtgren was working with asbestos at NAVSHIPS
Spring 1972 262
Did not consult with Holtgren while he was in NAVSEC, 6120
Holtgren's first involvement with asbestos was with NAVSHIPS
Captain Rosenwinkle was Barboo's boss - never met him 262
Spoke on telephone
Captain Lawton was Barboo's boss after Rosenwinkle 263
No specific recollection of talking with Rosenwinkle re. task
No specific recollection of conversations with Barboo 263-4
Don't know if he met industrial hygienist Paul Snyder 264
SUPSHIPS supervises the construction of ships to be acquired by the Navy at private shipyards
Navy directives to private shipyards would be issued through SUPSHIPS 264-5
On occasion he worked with SUPSHIPS and communicated with SUPSHIPS Personnel working at shipyards inc. private yards 265
Interested users of specs. often included mechanical and other codes, boiler code, piping code 266
Specs. were not normally distributed to shipyards for comment
Sometimes they might be, depending on nature of the spec.
Don't know if specs. were sent out to trade organizations representing shipyards
Anyone who uses a spec. has opportunity to comment on it by letter or by using a form in back of the spec. 267
May have received comments from shipyards
Ex. 1 was distributed to all Naval shipyards - designated by FKL1 (?)
INA would be inactive ship facilities
FB30 is Naval ship repair facilities
FB34 is a fleet activity, accessible
A recipient of the instruction might reword it and issue their own field activity instruction 268
Purpose of the instruction was for info. to be disseminated throughout the Navy
Page 8 Copy to, BUMED, Coast Guard, Naval Facilities Engineering Command, Naval Supply Systems Command, Naval Safety Center, Navy Material Command, Chief of Naval Operations
Naval Ship Engineering Center, 6101, 6140, 6105E, 6131, 6153, Naval Ships Systems Command 07D, Naval Ships Specialist Y2 268-9
NAVSEC 6101 would be a code designation - this is the section he worked for - materials development and applications office 269
6040 NAVSEC - ship's machinery div.
6105E, Safety
6131 Habitability
6153 Piping 270
07D is the code in 07 that Crawford worked in 270
07 had control of shipyard resources
100 NAVSHIPS - not a code, means they were sent 100 copies
Nolan signed the Ex. 1 - his office issued it
Nolan was at least an Admiral and was deputy commander in charge of shipyard modernization and management 270

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Author is designated in first page - JC, Jerry Crawford 271
L. Breidinger is the secretary who typed it
Don't know if any revisions were prepared for this instruction
NAVSEC 6124 maintains list of qualified products 272
Navy Dept. had responsibility for incorporating mil. standards
and specs. into shipbuilding contracts with private yards
Contracting office in NAVSEA now - used to be NAVSHIPS
'Would be 02 people in charge of writing contracts 273
Many Navy offices get involved in writing contracts 273-4
re. certain specs. or standards 274
Purpose of incorporating mil. standards and specs. into contracts
was to ensure that shipbuilder would meet requirements of the USN
Government furnished equipment is that provided by the govt. to
a contractor in connection with a contract 274
Did not know that the govt. supplied asbestos containing pads to
private shipyards 274-5
No knowledge of this 275
Never visisted a European shipyard, nor did Cherowbrier
Visited Holy Loch - in Europe but is an America facility
Spoke with people at British Ministry of Defense but did not
visit any shipyards
May have seen documents by Brit. Min. of Defense - no specific
recollection 275
Don't know of any other task force, other than those already
mentioned, concerned with use of asbestos by USN

Ex. 11, NSEC, Phila. to Owens-Corning May 5, 1969 and
May 11, 1969 - 3 pages 276
Ex. 12, NSEC, Phila. to Electric Boat Div., 30 April 1969 - 2 pages 277
Ex. 11 and 12 are the two documents he saw briefly yesterday 278
Has no specific recollection of seeing these letters before 279

California task re. asbestos free high temp. insulation - was
in summer 1972 281
Dealt with one ship
Was not complete when he left - understand the insulation
was found not suitable for shipboard purposes 282
Al Winer probably told him this
Broke up too easily
Water temp. was 568 degrees for a 1200 lb. boiler
That is boiling point at that pressure 283
Fire side of the boiler goes up to about 900-1100 degrees
Don't know if there was a previous coatings rep. to ASTM 283
Don't know if anyone replaced him at ASTM
First went to coatings, borrowed reference books from NAVSEC library
in Hyattsville, Md. - now in Arlington 283-4
Trip reports might now be in insulation area 284
Never visited Electric Boat installation 285
6147 Boiler section - Ted Lund was a section chief, Allan Lee
was head of 6147 div. 285
Ver little discussion with them re. asbestos task
Did not review any documents prior to deposition
Did not talk to anyone other than govt. attorneys 286
While he was in Annapolis dealing with submarine atmosphere -
just dealing with gaseous content 286
Sometimes pressure would be applied by higher up for addressing
questions on asbestos

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Chemistry and toxicology purposes -

Chemical cleaning - all methods of using chemicals for
cleaning on board ship - water treatment and fire fighting 287
Chemical, biological and toxicology interests were reviewed
and addressed - Cherowbrier and Lovel involved in that 287
Understands that products which would meet specs. AA, AAA,
AAA-M, are interchangeable with each other 288-9
In revision to 769, specified out products meeting AA and AAA-M 289
to specify only products which met AAA with only 10% asbestos
Don't know who initiated procedure of sending proposed changes
to NIMA
Visited shipyards for purposes other than checking for
instruction 5100.26 290-1
Was his impressions that Phila yard received written instructions
re. asbestos reduction 291
This is normal way to do business with field activity
Has had indirect contact with OSHA - knew they were considering
putting some conditions on use and working with asbestos 291-2
Understands health hazards of asbestos to be that it caused
lung disorders and lung cancer 294
This is what was alleged in 1969
This understanding did not change 1969-72

Pittsburgh Corning were sponsoring testing at U.Cal. 295
Don't recall who first advised him of this
Don't remember name of P-C rep. he spoke with
Tests were to verify work by Selikoff 296
Early 1970
Learned of the results from BUMED
Substantiated what Selikoff had reported
Did not speak to anyone from P-C about the results
Mr. Sinclair from P-C came by now and then 297
Discussed any type problem involving any P-C products 297
Is sure P-C were represented at ASTM and NIMA - thus participated
in spec. changes
P-C may have made indirect suggestions re. changes in specs. in
course of conversation - don't recall 297-8
Name James Nesser is familiar 298
Practice of mfrs. reps. calling on him continued during the time
he was in coatings - don't remember all the names of people who
came
Such meetings brought him up to date on changes and developments
in products 299
This was how mfrs. brought developments to attention of govt.
Done orally and by leaving written literature
Mentioned Mr. Tower of J-M
Name of Charles Enrst is familiar - don't know
Windblad - vaguely 300
Remembers name Skelley from J-M
Manahan, could be from J-M
Gus Fowler sounds familiar, also Bob Simmons
Had contact with several J-M people 301
Tried to bring him up to date on technical developments at J-M
re. asbestos
Remembers talking with or receiving letter from Sunberry with ATI 302
Don't recall specifics

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Possible he had contact with Magnesia Silica Mfrs. Assn. 302
Marshal Allen is familiar name
ASTM was a private group - industrial people, some govt. participation 303
Reps. from J-M attended ASTM spec. meetings 303
Also from E-P, and most of the people he did business with - names
mentioned previously - O-C, P-C, E-P, Porter, etc. 304
ASTM was to set standards and testing procedures
ASTM standards were often incorporated into MIL specs.
A change in the ASTM standard specified in the Mil. spec. would
have the effect of changing the mil. spec.
Did not vote at the ASTM meeting he attended 305
Ex. 3 - para 2.2 is the para. which incorporates the ASTM spec.
Ex. 2 - para 2.2 - ASTM spec.
Common practice to incorporate ASTM standards by reference
Was wrong yesterday when he indicated that mil. spec. 2781
was fiberglass and excluded asbestos 308
I-2781 is a performance spec. - does not identify composition
To comply with MIL I-2781 mfr. has option to use fiberglass or
asbestos or something else 309
Anything that met performance specs.
Observed installation of pipe covering around late 1971 310
did not observe anything at Charleston
Cannot remember at which yard he observed the pipe covering 311
Was not at Electric Boat
Has had no personal contact with Electric Boat re. insulation
No written contact with Electric Boat re. asbestos insulation
Don't recall any contact with Groton SUPSHIP re. asbestos insulation 312
Mfrs. reps. told him there was not better choice available than
asbestos 312
During 1969-72 point of locked in asbestos was brought up
Don't recall by whom 314
Recalls there was a hard asbestos product, mainly for use in
fire doors in bulkheads 314
Milled product, similar to slate - would not flake easily
Like a millboard
Same material could be made into preformed pipe insulation
J-M had something like this
Was heavy and expensive 315
Don't recall any totally encased asbestos product in the textile
line - cloth could be covered with adhesive or paint
He had info. that there was less airborne asbestos resulting from
some of the products being developed, not that there would
be no asbestos at all
Ultimate goal of the Navy was to eliminate asbestos from ships 316
At the time he left this was still the goal
His work was progressing towards that goal
Accepted products with lesser asbestos content was because it
was not possible to obtain asbestos free materials 316
Based on info. given to him, this goal was based on health dangers
of using asbestos insulation 317
No reason to question this
Don't recall any meeting with people from BUMED or PHS where it
was explained why asbestos should be eliminated 317
There is nothing mandatory about application for QPL listing 318
Mfr. wants to sell his products to the govt.
Is free to apply for the list or not - no govt. compulsion

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Never tested respirators to determine effectiveness 319
Don't know if this was done anywhere in govt.
Was not familiar with fact that J-M ran tests on respirator
effectiveness 1969-71
Ex. 11 and Ex. 12 - one is a letter of April 1969 asking
a mfr. if they can come up with a reduced or asbestos free
product 320
The other is a letter to shipyard asking about asbestos
work practices - May 1969
These letters would be in line with the Phila. task 321
Still feels the survey started in fall of 1968
Would have been a preliminary internal survey before such letters
went out
P-C tests substantiated Selikoff's work 322
Someone from BUMED told him this
Selikoff's conclusions were that asbestos fibers eventually
caused lung cancer
Did not make comparison tests to see if J-M products gave off
more or less dust than other similar products 323
Don't know if the Navy did tests re. asbestos release characteristics
of different mfrs.' products 323
Personal protection aspect was started prior to his tenure 323-4
Has no knowledge of its beginnings 324
In developing specs. his office worked closely with industry
Flow of info. between his office and industry reps. in working
on spec. being developed
While he was working in coating, mfrs. brought to his attention
changes in their existing asbestos products and new products
which were developed 325
One of the purposes might be that the existing mil. spec.
might not cover new or changed products 326
Then specs. were amended - this was one way they were updated
Considered suggestions made by industry about changes in specs.
Mfrs. sometimes provided suggested changes in language of spec. 327
and sometimes provided test results
When drafts of specs. were prepared, 6120 submitted drafts to
NIMA for review 329
Might also be reviewed by specific mfrs. - would depend on the spec. 330
Don't know if spec. for asbestos pipe covering was sent to
individual mfrs. - could have been 331
Got some comments from NIMA 331
Read all comments from NIMA and considered them
Depended on mfrs. and suppliers to supply material 332
and to supply info. because of their technical capabilities
Spec. is used as part of procurement vehicle and unless it
described an attainable material it was no longer useful 332
Consistent with practice that specs. were prepared to cover
existing products
Spec. could be used to identify existing products 333
Sometimes specs. were akin to mfrs.' product list
Might phone members of the various NIMA committees to discuss
comments 334
This was part of his office's relationship with industry - to try
to bring about development of specs. for existing products
Recalls no spec. where a provision was included that warnings were
not required or should not be included on any packages - re.
asbestos products 335-6
Specs. did not prohibit anyone from putting warnings on product 336-7

H. G. Murad

Duties while in coatings re. specs. were to maintain specs.
in such a way as to provide best materials which the govt.
could use in shipbuilding 337
Optimum materials available from industry 338
Criteria came mostly from industry - mfrs. said what was available
In insulation, had to take temperatures into account - could not
use flammable material for high-temp. application - took
into account stresses of shipboard use, availability and cost 338
Cost was a factor in overall way 339
Don't know who did consideration or price when drawing up a spec. 339-340
Specs. were already there - had been issued when he started his
tenure 340
These specs. were called out in the standard 769
If they came up with a new spec. inc. an item that was
very expensive, it would not be cited in the ship's specs.
because of price 340
Did not price out every insulation material when writing a spec.
or making changes
Price was only a factor if it was exorbitantly high - greater
than going price range of commonly found insulation
Re. such things as friability - they maintained the characteristics
already described in the spec. unless some info. from industry
cited improved characteristics 341
When proposed spec. was circulated - might just get agreement
from some people 341-2
Got some disagreements - varied 342
Would sit down and discuss the change and whether there was a problem
or not
If there was a problem proposed change might be dropped or amended
Cannot recall specific disagreements within the Navy Dept.
Most of the people on the Spec. Review Board were civilian -
could include military personnel
He experienced a Spec. Review Board turn down on a proposed change 343
Change or new spec. would not be promulgated until approved by Board
If a spec. called for something that was too expensive it mightn't
get included in a standard or spec. for a particular ship - this
is his opinion 344
When someone designs a ship, plans and specs. for the ship specify
certain materials meeting particular military specs. for
particular places 344
Material is not used until somebody calls for use of material
meeting a particular spec. on a set of plans and specs.
Decision as to which mil or fed specs will be referenced is made
by the design agent - someone in the Navy or engaged by the Navy 345

Loose bound asbestos is a felt material bound with wires or
strings with asbestos fibers only loosely held 345-6
His training is as a chemist 346
Cannot recall any corrosive substance which he has studied the
spec. for
Without studying the spec. in question, cannot say if govt. might
require labeling as corrosive
Cannot think of any spec. he worked on which required special labeling 347
Don't know about labeling of explosive materials in specs.
Cannot think of any spec. which addressed the issue of labeling
of a cautionary nature
Don't know if there is a mil. spec. for concentrated sulfuric acid
Might be Army Chemical Corp 348

H. G. Murad

Don't know which govt. dept. would handle mil. spec. of
explosive or flammable materials - would have to address
specific material

348-9

Porter test done in 1970-71 - results were not valid
Was told that a Porter employee conducted the test
Don't know where

Test material was a felt - asbestos - two materials

One was supposed to be a stiffer asbestos felt

350

Test consisted of dropping a metal rod on the material

He did not attend the actual test

Another kind of product was loose bound felt - supposed to
be tighter than predecessor and not to give off as many asbestos
fibers into the air

Re. loose bound felt - he kicked it around a little and
quite a bit of felt came off

351

Just visual observation

California tests was to see if a substitute for asbestos could
be used on ships

352

He was out of the job when this was concluded

352

Results indicated that the test did not work out

Don't know if the Navy still uses asbestos on ships

Understood that the letter from Porter formed part of the basis
for a portion of instruction 5100.26

352-3

His conclusion

353

Letter spoke to different procedures suggested for ripout of
asbestos

Do not know as a fact that the letter formed basis for
the instruction

Don't recall when first saw the letter

Recalls seeing the Porter letterhead

354

Don't know date

Spec. SS-C-466 -Ex. 4 - AAA asbestos cloth contained 9% asbestos
in 1965

355

Correction sheet indicates that Grade AAA - delete 9 and
substitute 95

356

Probably did deal with this before now - a long time ago

Refreshed recollection that AAA cloth required 95% asbestos

Previous testimony re. interchangeability of 10% asbestos cloth
with other cloths was incorrect

Spec. was sent to NiMA to find out whether the sepc. and/or
change described material that was available from industry
and which could be mfrd. in necessary quantities and delivered
for construction and for repair

357

Cannot recall being involved in any specs. re. labeling
ASTM - members from mfrs. and govt. and consultants
and academia

358

359

Purpose of reference in Exs. 2,3,4 was for testing products
Normally spec. has a section addressing testing of material
described

359

Al Winer may be able to give more info. on the California task

360

Joe Morelli was the person on the work preliminary for the Ca. task

Part of the development of the FFG series of ships

Used Eagle-Picher's high temp. insulation - rock wool insulation

361

For high-temp piping on the ship

MT-PWHD-015878

H. G. Murad

Ex. 13, MIL-I-2781D, June 13, 1963, 10 pages 362
This is a performance spec. 363
Specs. are used to describe existing products
Asbestos or nonasbestos could be used in Ex. 13
Nonasbestos products which were in existence at the time were
cal. sil. and fibreglass and perhaps mineral or rock wool 363
Asbestos materials were used shipboard at that time for
high temp. work 363-4
Had been told that the others were too friable, would not hold up 364
People in shipyards and mfrs. told them this - cannot be
specific about who

Mil Standard 769 refers to installation procedures for insulation
on page 10, para 6; page 11 and 12, 13 365
Brief description under each material of how to install it
These are the installation procedures referred to in previous
testimony contained in MIL standard 769
Understands that the Supervisor of Shipbuilding, Conversion
& Repair, Groton, protects the interests of the govt. 366-7
Understanding is based on experience in the Navy 367
All the SUPSHIPS during the time he was involved in insulation
and later in design services branches for NAVSEA 367
Acquired his understanding of SUPSHIPS responsibility
Has no understanding of SUPSHIPS responsibility as to personnel
safety in a private yard where SUPSHIPS is located 371-3
Knows that SUPSHIPS maintains offices where there are private
contract yards 373
Understands that SUPSHIPS does have responsibility to monitor
work practices at such private yards 374
Don't know specifics - not within his expertise 374-5
Ask SUPSHIPS or O7, shipyard resources 375
O7 has authority over shipyards and over all Supervisors of
Shipbuilding
Documents are distributed to those organizations that the drafter
feels have need of it 376
Usually SUPSHIPS would get any safety directives 377
Has had a little relationship with private yards where SUPSHIPS
are located, over the years 377
Newport News had asked some questions about asbestos material
Sometime in 1971
Were wondering what material they could use for high temp
insulation because it appeared to them that asbestos would
become a problem 377-8
This inquiry came through the type desk at NAVSHIPS 378
Meeting was held at NAVSHIPS with reps. of NNews
Were uncertain what to use if they were not to use asbestos
Was all oral 379
Not reduced to writing at any stage
Not much advice was given - said they must abide by the specs.
Whatever specs. were available

Instructions and directives referred to re. safety and health,
relate primarily to Naval uniformed and civilian personnel 379-80
Do not know of any Navy instruction or directive related to
safety and health of employees of independent contractors at
shipyards 381

//

MT-PWHD-015879

JELLEY

- 7 9822 Bridle Ridge Court, Vienna, Virginia
- 8 for last three months has been employed as an engineer by U.S. Air Force
for last 14 years - since May '65, has been employed by U.S. Navy
1957 - Univ. of Md- Master's Degree in Inorganic Chemistry
- Utica College - Bachelor's Degree in Chemistry
- U.S. Army - six months' service
- 9 1957-63: Griffith Air Force Base - General Chemist (analysis for
intelligence)
1963-65: Utica College - teacher of Chemistry
- 10 while at Griffith and at Utica College - learned "minimal amounts"
about asbestos; it does not burn; it is very inert to chemical
reaction; it is used as high temperature insulating material
- 11 while at Griffith and at Utica - learned nothing about asbestos and
health
- 13 May 1965 - joined (U.S.Navy) Marine Engineering Laboratory, Annapolis,
Maryland
- 14 laboratory - did research and development of ship's machinery; was
involved in fluid processing lab; did work in submarine atmosphere
and boiler water treatment
- 15 while at laboratory, had no concern with asbestos
November '66, joined Naval Ship Engineering Center (Nav Sec), Washington,
D.C.
- 16 while at Nav Sec, worked on water treatment systems and fire fighting
chemicals (chemistry and toxicology section)
- 20 only connection with asbestos - filters in water treatment systems for
propulsion plants
September 1969 - "coatings" unit of Nav Sec
- 21 coatings unit concerned with preparation of specifications and standards
deponent was "Materials Engineer"
Ed Morganstearn, "Supervisory Engineer" was in charge
- 22 primarily concerned with insulation materials
- 23 Tom Pugielissi was predecessor (3 years); before him was Bob Smith
duties: to maintain optimum insulation materials for use on board
Naval ships
insulation for piping, machinery, hull - but not for electrical
- 26 prior to September, 1969 - knew nothing about mil specs and mil stds
pertinent to asbestos
about Fall '68 - program to reduce or eliminate asbestos was initiated

27 in Fall 1968, learned of program from Ed Cherobrier who then worked in
chemistry and toxicology unit
Cherobrier said he was trying to determine extent and where asbestos
used aboard ship
Cherobrier said there was high level Navy interest

28 there was then an article in either the New York Times or the Washington
Post in reference to asbestos and health hazards
first time deponent heard there might be some asbestos-related dangers

29 Fall '68 - Cherobrier's duties included identification of asbestos uses

30 Cherobrier had people from Nav Sec, Philadelphia and asked to work with
him

31 Philadelphia Division, Nav Sec dealt with ship machinery, mainly pro-
pulsion plants
when joined "coating unit", learned about insulation by reading specs,
talking to predecessor and other people, both inside and outside USN

32 Nav Sec sections included Boiler, Piping, and refrigeration - all within
ship Machinery Division - Code 6140
when joined in September '69 - predecessor had been involved in program

34 asbestos was one of several problems - no priorities - depended upon
pressure from higher up

36 material during years with coating section for hull insulation - surface
ships - fiber glass; submarines - foam rubber

42 trying to reduce asbestos because of alleged hazard (accepted what
he was told)

44 mil spec identifies a particular material
mil std provides procedure on how you use that material, how the material
is applied

45 mil spec identifies characteristics; used mainly performance standards -
they did not necessarily call for asbestos

46 when revising mil specs, did not ban asbestos because "we didn't know of
any materials that would do the job . . . other than asbestos"

47 By Fall '72 - not able to find all non-asbestos containing materials;
were able to reduce the asbestos percent in some materials

48 did not reduce performance requirements
went to industry for help
one task aboard ship in California to determine use of non-asbestos

49 helped write an instruction citing procedures to be used while working
with asbestos

50 others involved were Ed Cherobrier, Code 07 Nav Ships (shipped resources)
Nav Ships safety, NAUSEC

- 52 representative from Code 07 was Terry Crawford
Larry Farina was the NAUSEC Safety Representative
study was based on survey by Nav Sec, Philadelphia Division
- 55 visited USN shipyards at Boston, Portsmouth, Norfolk and Charleston
to see how yards were adhering to instruction
Cherobrier and deponent were in charge of the program
- 56 Cherobrier's boss was Frank Lovell
- 57 Cherobrier got involved with manufacturers and suppliers; deponent became
involved to lesser extent
Fall '72 - worked at Naval Ship Systems Command to be closer to home
- 58 Winer took over asbestos work; Cherobrier continued to work
- 59 Fall '72 - end of association with asbestos
Mr. Birnbaum was Morganstearn and Lovell's supervisor - a section head
was one of the USN reps on the ASTM (Insulation Section) -while with
coatings)
- 60 involved with NIMA - used to clear specifications with them to make sure
that the kind of performance requirements set forth were attainable
- 64 has no pertinent documents

CHRISTIE

- 65 deponent's effort did not concern electrical insulation on gaskets

KENNY

- 66 instruction which was updated was intended to keep asbestos fibers
in the atmosphere to absolute minimum - wet down the area before
ripout with a fine water spray - wear respirators - no smoking during
rip out - use of special kind of shears - air monitoring -special
laundering - special clothes
- x. 1 69 instructions is Nav Ship Instr. 5100.26, 2/9/71 (Winer Ex. 2)
- 74 prior to '71, does not know if USN had any instructions with respect to
use of asbestos in USN shipyards

MONSTREAM

- 86 from 1969 - '72: approximately 10 to 15 percent of time devoted to
asbestos
- 87 USN higherups interested in program were admirals

89 article in paper (Cherobrier) referred to Dr. Selikoff

MOHER

99 work included maintenance and revision of mil specs
in addition to performance spec - characteristic Composition/spec

2 101 mil I - 15091C required asbestos

3 103 SS-C - 00466D :
4 SS-C - 466E : asbestos required

105 std 769 would tell what specs could be used for specific purposes

106 std 769 would instruct on how to apply insulation;

107 has reviewed mil std 769

108 others who assisted in review were Al Munkreus, Joseph Amore, Charobrier,
Morganstearn, Lovell

109 Munkreus was concerned with piping

112 Bu Med, Cmdr Sam Barboo, had input into Ex. 1/Nav Ship instructor

113 spoke with and met with Barboo on asbestos use aboard ship; Barboo's
boss, a Captain, also got involved

115 Code 6101C, 6105(safety), 6147 (boiler), 6153 (piping) people would get
involved in changes to specs

116 recommendations would go to 6120, specifications
6120 would send to industry "to make sure industry could in fact supply
material"
sometime industry would suggest changes

117 ultimate approval for the adoption of a change in mil specs -
Specification Review Board

118 Spec Review Board - made up of Nav Sec (now Nav Sea) personnel each of
the major directors on board

119 presentation to Spec Review Board would be in writing and orally

120 secretary made minutes of Spec Review Board meetings

121 there was no appeal from decision of Spec Review Board

COLLINS

123 when joined coatings, talked with manufacturers and/or suppliers
spoke also with naval shipyard personnel

124 spoke with Newport News; cannot recall any contact with EB
no written instructions concerning program

128 knows of no one who visited EB

129 didn't know of Shipbuilder's Council

COYNE

130 one of first meetings re: asbestos - met JM and HK Porter reps;
Cherobrier and Birnbaum attended - discussed rep out procedures
and reduction of asbestos content

133 Ship spec - description of specific ship's characteristics

HOWD

135 in trying to find a substitute product - relied to a large extent on
manufacturers' and suppliers' representative; would also receive
material from ASTM and NIMA

136 didn't attend NIMA meetings
but received some letters stating NIMA position on specs sent to them
for review

140 between '69 - '72; USW performed no tests of an asbestos-free or low
asbestos insulation cloth; relied on industry - mainly oral

142 rep from Porter said there was need for asbestos in cloth
talked with PC personnel - Mr. Sinclair; also someone from Pittsburgh

143 PC personnel advised of Univ. of Cal. study being taken to test hazards
told results coincided with Selikoff's work

145 PC asked specs to remain while Univ. of Cal. tests were being performed

149 didn't recall name of JM personnel he met at initial meeting; they were
among those who stated had to continue to use asbestos

163 as part of changing spec - would send to NIMA for comments
then, would either accept or reject comments
thinks, NIMA suggested a revision

164 didn't know of ATI

165 couldn't recall a spec being drafted or revised for a product that was
not then in existence

166 other than PC discussion, cannot recall discussing health with reps.
they were basically marketing people; they were not well versed on
health hazards

- 167 cannot recall ever receiving a written communication concerning health from a manufacturer
- 169 mil std 769B, 1/3/76
- 170 over time, also talked with EP, Claremont, RM, OCF
- 171 may have talked with Amatex
- 174 Navexos P. 52, Volume 111, No. 8, August, 1946.
didn't recall seeing
- 177 Navexpos - P. 52, Vol. IV, No. 1, January, 1947,
didn't recall seeing
- 178 Safety Manual, Part 2, shops 56, 25 and 27, Norfolk Naval Shipyard,
First edition, 1954
didn't recall seeing
- 179 Safety Handbook for pipe fitters, NANORD INST. 5100.21, January 7, 1958
has not seen before
- 180 NAVSO. P. 2455, Safety Precautions For Shore Activities, April, 1965,
changed June 1, 1967
had not seen before

HOWD (cont'd)

197 piping code wrote up Mil Std 769; cited various specifications of material to be used for lagging pipe

206 Naval Ship Technical Manual - contains instructions on procedures for the installation of asbestos insulation products manual is issued to all ships and navy shipyards; accessible to government contract yards

207 during period of time with coatings, does not recall any publication of Bu Med concerning asbestos and health

208 purpose of military specification - to describe a material which the government may want to procure

209 Mil Std describes where certain specification materials may be used in an operational situation; some instruct how product is to be used or applied.

212 initiation of spec change and Code 6124 would determine who would be involved in spec revision

215 today, Code 07 (resources - manpower and equipment) has responsibility for Supervisor of Shipbuilding; responsibility assumed in 1974 when Naval Ships and Naval Ord. merged to become Naval Sea

216 "FKL 2", Sup Ship is std navy distribution list identification

218 does not know if manufacturers participated (inputted into Philadelphia survey) thinks he may have spoken to Jack Barnhart of NIMA over phone

219 Barnhart, executive secretary, signed letters on NIMA's position

221 can recall no instance where a manufacturer of asbestos products came with a non-asbestos substitute dealt with Sanford Heard of OCF

222 dealt with Burt Tower of JM - spoke in general terms about substitution with asbestos-free products

223 talked with RM representatives

224 talked with Porter representatives - they showed tests

225 talked with Eagle Picher - they were proposing an asbestos-free product

228 talked with Claremont - in regard to asbestos-free substitution; they were proposing a glass cloth; it was being tested and written up at Portsmouth Naval Shipyard in '72

230 Rob Roy was Claremont representative

232 has not visited any manufacturers Code 08 - nuclear reactor directorate headed by Adm. Rickover

- 233 received an inquiry concerning program from 08
- 234 Qualified Product List - list of manufacturers whose product has
been qualified by pre-testing
- 235 Code 6124 makes up QPL
- 236 testing varied - sometimes by government, sometimes by manufacturers,
sometimes by pretesting

SCHWARTZ

- 247 asbestos reduction program was not specifically funded
- 251 never received any reports in connection with the program
- 252 does not recall if he read reports submitted to Cherobrier
other than trip reports, he wrote no reports
- 253 1969-1972 structure of USN: CNO / Naval material Command / Naval Ship Systems Command
maybe Naval Supply Systems Command / Naval Air Systems Command
Naval Ordnances Systems Command / Naval Electronics Systems Command
- 255 as part of program, contact with Naval Supply Systems to determine
how much asbestos was available and try to get them to reduce
the procurement of high asbestos content insulation
- 256 Naval Supply Systems - responsible for procuring, inventorying and
stockpiling material for naval shipyards
did not have contact with Naval Environmental Health Center
- 257 tasked Naval Ship Research and Development Center to review asbestos
containing specifications with the intent to reduce or eliminate
asbestos; center did not test; does not know if report prepared
as he was then leaving
- 258 specifications would not be changed until NSN was assured that the
change would still satisfy the needs of the Navy
- 259 deponent had no direct contact with OSHA, NIOSH; does not know if
Cherobrier did
other ASTM meeting, at Hershey, in October 1971, did not attend outside
meetings
- 260 at ASTM, discussed reduction (elimination of asbestos in context of
satisfying needs of USN)
- 262 did not consult with Holtgren
Captain Rosenwinkle was Supervisor of Commander Barboo
- 263 Captain Lawton may have been Barboo's supervisor

264 purpose of Sup Ships - supervise construction of ships to be
acquired by the Navy at private shipyards

265 there were sup ships personnel at private yards

266 proposed specs would not normally be sent to Sup Ships or to yards

268 purpose of "instruction" is for information to be disseminated
throughout USN

269 NAUSEC 6101 - materials development and application
NAUSEC 6040 - ships machinery
NAUSEC 610SE - safety
NAUSEC 6131 - habitability
NAUSEC 6153 - piping

270 NAUSHIPS P7D - shipyard resources

273 NAUSEA (formerly NAUSHIPS) contracting office wrote contracts with
private yards

274 purpose of incorporating mil stds and mil specs into shipbuilding
contracts was to ensure that the shipbuilder would meet the
requirements of the USN
government furnished equipment - material provided by government
to contractor

275 was not aware that government furnished equipment ever contained
asbestos
has spoken with people at British Ministry of Defense; didn't recall
if he reviewed their documents

11 276 NAUSEC letter to OCF, 5/5/69 and 5/11/69

12 277 NAUSEC letter to EB, 4/30/69

279 has no recollection of previously seeing exhibits 11 and 12

DE ANGELO

282 tested asbestos-free material aboard a ship in California in 1972
understand unsatisfactory as it could not withstand rigors of ship-
board stress

294 In 1969, based on article provided by Cherobrier, "understanding of
the nature of the alleged health hazards of asbestos were that
it caused lung disorders and lung cancer"

LEVY

294 James Nesser of PC sounds familiar

300 Charles Ernst sounds familiar

(LEVY 300 cont'd)

B C Windbladt is vague
Skelley-remember name, from JM
Gus Fowler of JM met
could have met Manahan of JM

301 Bob Simmons of JM sounds familiar
JM people tried to bring deponent up to date as to what technical
developments were going on with JM

302 either talked with or received letter from Sunbury of ATI

303 ASTM meeting attended included reps from JM, EP, OCF, PC and Porter

304 ASTM changes were incorporated into certain mil specs;
changes in ASTM would therefore change spec

311 never had contact with EB personnel

314 hard asbestos - like a millboard - similar to slate material which
would not flare off very readily, if at all - used on bulkheads
as a fire door
same material could be made into moulded pipe covering - JM had
something along these lines

315 it was quite expensive and heavy

316 ultimate goal was to eliminate asbestos; accepted products with lesser
asbestos content because otherwise could not meet mission

317 goal was based on health hazards and dangers

318 government did not compel manufacturer to sell

319 never tested respirators; does not know if government tested
was unaware that JM was testing

322 PC study at University of California, he was told by Bu Med,
substantiated Dr. Selikoff's conclusions that asbestos fibers
eventually cause lung cancer

323 does not know of any tests showing whether Unibestos or Thermobestos
gave off more dust as it was being worked

326 in revising specs, took into consideration requests of industry

332 needed manufacturers to supply information because of their technological
capability and background
practice was to prepare specs to cover existing products

335 never prepared a spec which said warnings were not required; it was not
addressed

336 specs did not prohibit placement of a warning

TILLEY

339 cost was a factor in selection of material

345 decision as to what is specified is made by USN

SCHWARTZ

358 does not recall any specs which dealt with labeling

359 ASTM reference in spec deals with method of testing; it does not
specify a particular material or component

DE ANGELO

361 California test was of EP mineral-wool product

TEDFORD

.13 362 mil I 2781 D, June 13, 1963

364 performance spec; didn't use non-asbestos; told by shipyards and
manufacturers that non-asbestos was too friable

NOWINSKI

364 Sup Ships, Groton - protect interest of US; make sure US is getting
ship contracted for

373 Sup Ships (fuzzy according to deponent) has some responsibility to
monitor work practices of private yard

377 Sup Ships would normally receive safety notices
In 1971, Newport News Sup Ships inquired concerning asbestos

381 does not know of any USN instruction or directive related to safety
or health of contract yard employees.

Elizabeth C. Hayes

SOURCE OF INFORMATION: Deposition and Summary
May 21-22, 1979

Mr. Murad has a B.S. degree in Chemistry and a M.S. degree in Inorganic Chemistry, 1957. He had been a general engineer in the United States Air Force for three months at the time this deposition was taken. Prior to that time he was a civilian employee of the U.S. Navy for 14 years.

Beginning in 1965 he was employed at Marine Engineering Laboratory, Annapolis, Maryland, for 1-1/2 years as a general chemist in the fluid processing laboratory. He transferred to the Naval Ship Engineering Center (then located in Washington, D.C.) as a general chemist in the Chemical and Toxicology Unit and worked in that position from 1966 to 1969.

His involvement with asbestos, which included working with industry to write specifications and to limit the amount of asbestos in products and search for substitutes, was during the years 1969 to 1972. During this period of time he worked as a Materials Engineer in the Coatings Division of Naval Ship Engineering Center. He was involved in working with all types of insulation and ablative materials.

He states that it was expected that asbestos would be used to meet specifications. (p.149) No substitute was known to meet all performance requirements. (p.101). The specifications described asbestos (p.104).

In developing specifications, his office worked with industry. Manufacturers of asbestos products advised that there was no suitable substitute for asbestos. (p.149). People in industry

HENRY GEORGE MURAD (Cont.)

and personnel in the shipyards advised that substitute products were too friable and would not hold up on board ship.

Mr. Murad states that specifications were drafted for existing products and that he cannot recall a draft or revision for a product which was not in existence at the time of the draft or revision. (p.165). (I would limit this statement to the years of Mr. Murad's experience, 1969-1972.)

He refers to a test of the suitability of products substituted for asbestos products on a naval ship in California, conducted by the Navy. The "California Task" (1972) was an attempt to determine whether an asbestos substitute could be used on board ship. He was told (probably by Al Winer, p. 282) that the conclusion was that the substitute would not work out. (p. 351, 352).

He was one of the Navy representatives on the American Society for Testing and Materials. (Prior to his involvement with asbestos.) (p. 59,60)

He had many contacts with industry. JM contacts included: Bert Tower and Mr. Skelley. He possibly had contact with Gus Fowler, Mr. Manahan, B. D. Windblatt, Charles Ernst and Bob Simmons.

Mr. Murad made several visits to shipyards and observed insulation being applied and ripped out.

He is familiar with various types of specifications. He is somewhat familiar with SUPSHIPS, which supervised the construction of Navy ships in private shipyards.

HENRY GEORGE MURAD (Cont.)

Information from manufacturers regarding specifications would be filed under the particular specification in his office files. He doesn't know if the files are still there and he indicated that his filing was not absolutely perfect.

His contacts and associates include:

Ed Morganstearn
Tom Pugielissi
Bob Seith
Ed Cherowbrier
Larry Farina
Jerry Crawford
Al Winer
Frank Lovell
Leon Birnbaum
Al Munkrees
Joseph Amore
Sam Barboo
Captain Ryan
Robert Roy
Ben Leota
Mr. Holtgren

In addition he met with representatives from various manufacturers on a frequent basis.

HENRY GEORGE MURAD

<u>DATE</u>	<u>JURISDICTION</u>	<u>CIVIL ACTION NO.</u>
5/21/79	U.S.D.C. for Dist. of CT.	H-75-327 H-76-434
5/22/79	U.S.D.C. for Dist. of CT.	H-75-327 H-76-434

HENRY GEORGE MURAD, Materials and General Engineer NAVSEC

DATE: May 21, 1979

TIME PERIOD: Joined Navy in May of 1965
From 1965-'69 - little concern with asbestos
'66-'69 - connection with asbestos was regarding
water filters and treatment systems
'69-'72 - concerned with specs and standards
'72- went to work for Naval Ships Systems Command

SUBJECT: Specs, asbestos elimination, instructions regarding
working practices with asbestos, MIL standards,
Spec. Review Board, NIMA, exhibits.

HIGHLIGHTS:

No research on asbestos prior to 1963.
1969-'72 involved with insulation materials and ablative materials.
1968-'69 only contact with asbestos program was in talking to Cherowbrier.
Sept. '69 read about insulation.
When took over position in Sept. 1969, had been some work done regarding
asbestos elimination.
By Fall of 1972 had not found all non-asbestos containing material
which would do the job for hi-temp insulation.
Describes the instructions existing from working practices with
asbestos in '69-'70.
'69-'72 spent 10-15% of his time concerned with asbestos on ships.
One of the first meetings after joined Coatings was with J-M, Porter.
Meeting was to talk about procedures to be used during rip out and
trying to reduce asbestos content.
Sept. 1968 attended the meeting dealing with the reduction of asbestos
J-M was present, doesn't think that health was ever a consideration
in drafting a spec.

HENRY GEORGE MURAD

DATE: May 22, 1979

TIME PERIOD: Saw installation procedures for various kinds of insulation after 1969. Early 1970s recalls that Pittsburg Corning was sponsoring testing to verify Selikoff's work. Newport News shipyard had asked some questions about asbestos material sometime in 1971.

SUBJECT: Specifications, asbestos substitution program, QPL, Shipyard visits, ASTM meeting in Oct. '71.

HIGHLIGHTS:

Has seen pre-formed pipe insulation being installed and taken out of the box.

Shipyard visits were usually regarding insulation.

Naval Ship Technical Manual would contain instructions for installation of asbestos products; this was issued to all ship and Navy shipyards and is accessible to private shipyards.

Does not recall any instance where asbestos manufacturer brought products of non-asbestos substitutes.

Would receive catalogs and sales brochures from manufacturers.

Specs would not be changed until the Navy was assured that the change would still satisfy Navy needs.

Purpose of incorporating MIL standards and specs into contracts was to insure that the shipbuilder would meet requirements of the U. S. Navy.

California tasks regarding asbestos-free high-temp insulation was in summer of '72.

Representatives of J-M attended ASTM Spec meetings.

Manufacturers sometimes provided suggested changes and test results for specs.

Specs did not prohibit anyone from placing warnings on products.

Does not know of Navy instructions or directive related to safety and health of employees of independent contractors at shipyards.

Henry George Murad
May 21, 1979 deposition

Nav Ship Inst. 5100.26, dated Feb. 9, 1971 pertained to wetting down area before ripout, wearing respirators, and instructions that insulation be cut out with special shears, not ripped out by hand. (p. 67)

He doesn't think health was ever a consideration in drafting a specification. (p. 167)

respirators

Henry George Murad

May 22, 1979 deposition

From 1969-1972 there were instructions to wet down area before
rip out and to wear respirators. (p. 140)

He saw various installation procedures on board ships. He
doesn't recall if he saw anyone wearing a respirator. Sometimes
work area was partitioned off. (p. 199)

H. G. Murad
May 22, 1979

SUPSHIPS has authority over shipyards and over all supervisors of shipbuilding. (p. 375)

Usually SUPSHIPS would get any safety directives. (p. 377)

Labeling

Henry George Murad
5/22/79 Vol. II (Deposition)

He cannot think of any spec. that he worked on which required special labeling. He doesn't know about labeling of explosive materials in specifications. He cannot think of any spec. which addressed the issue of labeling of a cautionary nature.
(p. 347)

He cannot recall being involved in any specs. regarding labeling.
(p. 358)

MR. NOWINSKI: Off the record.

(Discussion off the record)

BY MR. HOWD:

Q Mr. Murad, you have explained to us your early conversation with Mr. Cherobrier concerning the asbestos substitution program or attempts. Did you receive any written material from him concerning asbestos and health at any time?

A Not that I recall. I may have. As I said earlier, I may have read that newspaper article that seemed to kick this whole thing off, but I don't remember when I read it or even if I did read it. I certainly remember talking about it, hearing about it.

Q You remember it being brought to your attention?

A It was brought to my attention, yes.

Q There was the Times, The New York Times article?

A It was either the Times or the Post.

Q Or The Washington Post?

A One or the other.

Q It concerned the Selikoff work?

A Yes.

Q Have you ever seen this document, sir?

VOLUME I

(May 21, 1979)

FILE COPY

HGM 7901

IN THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF CONNECTICUT

-----X
IN RE: GENERAL DYNAMICS ASBESTOS CASES : CML No. 1

-----X
SAMMIE L. GRAY, et al., :
Plaintiffs, : Civil Action
-versus- : No. H-75-327
GENERAL DYNAMICS CORPORATION, et al., :
Defendants. :

-----X
HENRIETTA C. BROWN, et al., :
Plaintiffs, : Civil Action
-versus- : No. H-76-434
UNITED STATES OF AMERICA, et al., :
Defendants. :

-----X
Deposition of HENRIETTA C. BROWN, taken
pursuant to the Federal Rules of Civil Procedure,
at the offices of the United States
Department of Justice, Todd Building, 550 11th

SANDERS, GALE & RUSSELL
Court Reporters & Transcribers

PRODUCED
JM - 83

MT-PWHD-015902

Street, Washington, D. C., before Roy F. Brown,
a Registered Professional Reporter and Notary
Public within and for the State of Connecticut,
on Monday, May 21, 1979, commencing at 10:03
o'clock in the forenoon.

oOo

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ooo

H E N R Y G E O R G E M U R A D , called as a
witness, having been first duly sworn by the Notary
Public (Roy F. Brown), was examined and testified as
follows:

MR. SCHWARTZ: The usual stipulations,
just so there is no misunderstanding, unless
someone objects: Roy is competent to swear in
the witness and to take the testimony, and that
all objections as to the notice are waived and
all objections except as to form are reserved
until time of trial.

Off the record.

(Discussion off the record)

DIRECT EXAMINATION

BY MR. JELLEY:

Q Why don't you give us your full name and address,
Mr. Murad.

A Henry George Murad, 9822 Bridle Ridge Court,
Vienna, Virginia.

Q By whom are you employed, Mr. Murad?

A By the United States Air Force.

Q What position do you hold with the United States

Air Force?

A I'm a general engineer.

Q How long have you been employed by the Air Force?

A About three months.

Q By whom were you employed prior to your employment by the Air Force?

A By the Navy.

Q How long were you employed by the Navy?

A Almost fourteen years.

Q Does that mean that you began in about 1965 with the Navy?

A That's right, May of '65.

Q What is your educational background, Mr. Murad?

A Well, I have a Master's Degree in Inorganic Chemistry.

Q From?

A The University of Maryland, in 1957.

Q And your Bachelor's Degree?

A That was in chemistry, from Utica College of Syracuse University.

Q Were you in the service at all?

A Six months, yes, in the Army.

Q What was your first employment after you received your Master's Degree?

A I worked for the Air Force at Griffiss Air Force Base.

Q That is in Rome, New York?

A Rome, New York, right.

Q Doing what?

A General chemist.

Q How long were you at Griffiss Air Force Base?

A Till September of '63.

Q Then where did you go to work?

A I worked for Utica College. I taught various chemistry courses.

Q That was for two years, until 1965, was it?

A That's correct, two school years, right.

Q What did you do at Griffiss Air Force Base as a general chemist for six years?

A Well, basically, analytical chemistry.

Q Analyzing what?

A Analyzed all kinds of samples, air, water, soil samples, for trace concentrations of a variety of different elements and/or compounds.

Q What was the purpose for which you were making these analyses?

A Well, it was to gather -- intelligence-gathering purposes.

Q Did the section or department that you were in at Griffiss have a name of some sort?

A I recall it was a chemistry unit.

Q It was the chemistry unit of what?

A Chemistry unit of -- well, overall. Worked for intelligence and reconnaissance, I believe it was called at that time, I and R; I believe that was the name.

Q What kinds of courses did you teach at Utica College, in chemistry?

A Taught general chemistry, nurse's chemistry, organic and research chemistry, special research projects. Basically it.

Q At any time during your undergraduate or graduate education or your work for Griffiss or your teaching at Utica College, did you learn anything about asbestos?

A Just minimal amounts. I knew that asbestos did not burn, that it retained -- you know, it retained its own properties; it was very inert to any chemical reaction; it

was used as high-temperature insulating material. Just the basics.

Q Did you learn --

MR. NOWINSKI: Just a minute, please.

(Discussion off the record)

MR. NOWINSKI: Go ahead.

BY MR. JELLEY:

Q During either your undergraduate years or your graduate years or your time at Griffiss or your teaching at Utica College, did you learn anything about any health hazards associated with asbestos?

A No.

Q Did any of your work or studies during that period of time, from the early '50's until 1963, deal in any way with the health hazards of various chemicals or other materials?

A Yes, to a minimal amount.

Q When was it that that was so?

A Well, of course, working in any line of chemistry, you must be aware of the hazards involved, and a variety of chemicals are hazardous from the standpoint of burns and toxicity, and, obviously, you have to determine -- you have to

know how to handle such things as sulfuric acid, a very common laboratory chemical. It can cause serious burns, and poisonous if anybody are foolish enough to ingest it. That kind of thing. We had to know the basics about the chemicals that we dealt with.

Q But none of your studies or work during that period required you to do research or study in that area of dangers; did it?

A No.

MR. KENNY: I think the record ought to reflect, Mr. Nowinski, that there is constant conferring between the deponent and yourself; at least in the last six questions there have been three conferences.

MR. NOWINSKI: I think it is a gross distortion, Mr. Kenny. I have not conferred with the witness while any question has been pending.

If you want to make your comments at a relevant time, so the record will be accurate, you are invited to, but please do not put such characterizations on the record as --

MR. KENNY: I see nothing in the way of a caricature here. There have been three conferences in the last five minutes.

MR. NOWINSKI: I again make the point: not while any question has been pending, and they have not been constant.

BY MR. JELLEY:

Q Mr. Murad, in May of 1965 you left Utica College and went to work for the Navy. Is that correct?

A Yes.

Q What piece of the Navy did you begin working for in May of 1965?

A At that time it was called the Marine Engineering Laboratory.

Q Where was it?

A That's at Annapolis, Maryland.

Q What bureau or agency or piece of the Navy was the Marine Engineering Laboratory a part of?

A Organizationally, I don't know if it was under the Bureau of Ships or not. I think it was. I think it was part of the Bureau of Ships.

Q What did the Marine Engineering Laboratory do

Annapolis do?

A Basically, the laboratory did research and development in the area of ship's machinery.

Q Was this all kinds of ship machinery or some particular kind?

A Several different kinds. They had the heavy machinery for -- that included the propeller -- propulsion plant, rather, and ship silencing. Those are the two I knew of.

Q Was this nuclear and nonnuclear, or just one of the two?

A I don't know.

Q You do not know whether the research and development that was going on at the Marine Engineering Lab dealt with nuclear or whether it dealt with nonnuclear propulsion systems?

A Yes, I don't know it as a fact; that's right.

Q What, specifically, did you do there?

A I was involved in the fluid processing lab and did work in submarine atmospheres and also in boiler water treatment.

Q How long were you at the Marine Engineering Lab

in Annapolis?

A A year and a half.

Q What do you mean when you say that you did work in submarine atmospheres?

Well, we determined the components of the submarine atmosphere. The objective was to keep the atmosphere as habitable as possible.

Q Was this atmosphere from merely a gaseous point of view, or other things as well?

A Well, anything that was in the atmosphere; well, in the breathing air of the submarine.

Q Was asbestos in the atmosphere anything you had any concern with --

A No.

Q -- during your time there?

A No.

Q Where did you go from the Marine Engineering Laboratory in Annapolis?

A Naval Ship Engineering Center, that was located in Washington at that time.

Q Is that no longer in Washington?

A Well, right now it is in Arlington, Virginia.

Q What did you do for the Naval Ship Engineering Center?

A I started working on water treatment systems and fire-fighting chemicals.

Q Were you still being a chemist in the things that you were doing, or were you starting to seem more like an engineer?

A More like an engineer, administrative type.

Q How long were you with the Naval Ship Engineering Center, concerned with water treatment systems and fire-fighting chemicals?

A About three years.

Q So that brought you up to about 1970?

A September '69, right.

Q Did you have any concern with asbestos while you were working in the Naval Ship Engineering Center?

MR. NOWINSKI: Objection. Argumentative.

You can answer.

A Very little.

THE WITNESS: I'm sorry, would you repeat that question again, please.

MR. JELLEY: I must say that, considering

the objection, I'm not sure that I can remember what the question is, since the objection seemed so inappropriate. But why don't you read the question again, Mr. Reporter.

(The question referred to was read.)

A (Continuing) The answer to that is yes.

Q Was that in connection with fire fighting?

A Well, very little.

Q Tell me, then, the reason that you had concern with asbestos during that period of time.

MR. NOWINSKI: Just a minute. The same objection, argumentative.

You can answer.

A Your question?

MR. JELLEY: Why don't you repeat the question.

(The pending question was read.)

A (Continuing) I don't understand the question.

Q All right, let's start again on that subject.

I asked you whether, while you were at the Naval Ship Engineering Center, you had had any concern with asbestos, and I think your answer was yes; and then I asked you whether

that was in connection with fire fighting, and you told me, I think, barely, or just a little, leading me to believe that it was in some other connection that you had reason to think about asbestos, so I am trying to determine that reason.

A Okay. With regard to high-temperature insulation.

Q What is it that you were doing at the Naval Ship Engineering Center that involved high-temperature insulation?

A Well, I was in charge of dealing with specifications for all kinds of insulating material, thermal insulating material, primarily, some sound insulation, very, very minuscule amount of electrical insulation.

Q Did the piece of the Naval Ship Engineering Center that you worked in during these three years, more or less, have a name?

A Yes. It was called the -- I worked -- let's see, it was called chemistry and -- for the three years that you are referring to, it was called chemistry and toxicology unit.

MR. JELLEY: Can you have the answer read back, please?

(The answer was read.)

BY MR. JELLEY:

Q This is 1967 through up to September '69; is that correct?

A Approximately. It was November '66 to September '69.

Q Was the chemistry and toxicology section concerned with the writing of specifications and standards?

A Specifications and standards, yes.

Q This was specifications and standards for what?

A For a variety of different chemicals that are used in -- on board ship, fire extinguishing agents, water treatment chemicals, water treatment techniques.

Q How does the insulation come into what you have just told me about?

A It doesn't -- it was not at all involved in that three-year period.

Q I see. Okay. I misunderstood something that you said, then. I am sorry.

So that the high-temperature insulation and so on comes after September of 1969; is that correct?

A Yes.

Q Okay. I did misunderstand you.

So that during this period from November '66 to September '69, did you have anything to do with asbestos at all?

A Very little in that period of time.

Q To the extent that you did have something to do with asbestos, what connection did you have something to do with it in?

A Only in that there are some filters in water treatment -- certain water treatment systems that are composed, partially, at least, of asbestos.

Q This is water treatment systems for --

A Propulsion plants.

Q -- cooling and things?

A Right.

Q Not drinking water?

A No.

Q Where did you go after you left the Naval Ship Engineering Center in the chemistry and toxicology section in September of 1969?

A Well, I continued to work for the Ship Engineering Center, and I worked for another unit.

Q What was that unit?

A That was called the coatings unit.

Q How long were you with the coatings unit of the Naval Ship Engineering Center?

A Another three years, approximately, from '69 -- September '69 to October '72.

Q Was the coatings unit another section or unit that was concerned with preparation of specifications and standards of one sort or another?

A Yes. ;

Q Did you have a title or position in the coatings unit?

A Materials engineer.

Q I suppose that the coatings unit had a boss of some sort? Did it?

A Yes.

Q What was his title?

A His title was supervisory engineer, I believe.

Q Who was that during the time that you were with the coatings unit?

A It was Mr. Ed Morganstearn.

Q Did you report directly to Mr. Morganstearn, or was there some intermediate level between you and Mr.

Morganstearn?

A I reported to Mr. Morganstearn.

Q As a materials engineer, were you a supervisor, with people under you, or not?

A No, I was not.

Q How many people were there in the coatings unit, approximately?

A About six or seven.

Q Including additional materials engineers?

A Yes.

Q What kind of materials were you involved with while you were in the coatings unit?

A Insulation materials.

Q Exclusively?

A Well, primarily.

Q What else?

A Some of the materials served as both insulation and ablative materials.

Q I don't know what ablative means.

A Ablative is a material which peels off upon exposure to a good deal of heat, thereby absorbing heat.

Q Did you have a predecessor as materials engineer

in the coatings unit concerned with insulation materials?

A Yes.

Q Who was your predecessor?

A Tom Pugielissi, P-u-g-i-e-l-i-s-s-i.

Q How long had he been a materials engineer concerned with insulation materials, approximately?

A To my knowledge, about three years.

Q Had he had a predecessor?

A Yes.

Q Who was that?

A I believe it was Bob Seith.

Q How long had he been in that position?

A I don't know.

Q A long time or a short time?

A I don't know.

Q What were your duties as a materials engineer in the coatings unit, concerned with insulation materials?

A To try to maintain optimum insulation materials for use on board Naval ships.

Q Is this insulation for piping alone, or is it also insulation for machinery and also electrical insulation?

A It is insulation for piping, machinery, hull, but

not electrical.

Q Did you say hull?

A Hull insulation, right, the hull of a ship and the walls or bulkheads of the ship.

Q When you speak of --

A Ceilings, floors. Thermal insulation and acoustical insulation, as opposed to electrical.

Q I take it, when you are speaking of, as you have, hull insulation, decks and ceilings and bulkheads --

A Right.

Q -- that this is, in a sense, insulation similar to building insulation; is that correct?

A That's correct.

Q I suppose that, when you went into this position in September 1969, there were already existing military standards for many different kinds of insulation; is that correct?

A There were standards, yes.

Q Is that an area that you had had any familiarity with before you went into this position?

MR. LEVY: You mean the standards area or the insulation area, or both?

MR. JELLEY: The area of insulation standards.

A No.

MR. ELLIS: Can I ask for another clarification? Are you using "standards" in the strict sense of the military standard or a generic sense which includes specifications as well?

MR. JELLEY: We are talking about military standards.

MR. ELLIS: There is a technical sense of military standards which does not include military specifications. I wondered which sense you were using the phrase in. In other words, military specifications are distinct from military standards. I wondered whether you were using the term to include military specifications or not.

MR. JELLEY: Let's find out what Mr. Murad meant.

BY MR. JELLEY:

Q At the time that you came into this position in

September 1969, did you know anything about insulation and the military standards and specifications that were connected with insulation?

A No.

Q Were you brought into this position, to your knowledge, for a specific reason, because of some specific expertise that you had, or simply because they needed a successor to Mr. Pugielissi?

A They needed a successor.

Q At the time that you went into this position, in September of 1969, was there already underway some program to reduce or get rid of asbestos in insulation?

A Yes.

Q Do you know when that got underway?

A Not exactly, no.

Q Approximately?

A Yes.

Q When?

A About the fall of '68.

Q Is that something that you had known about the commencement of even before you went with the coatings unit?

A Yes.

Q How had you learned of the commencement of that program in the fall of 1968?

A Mr. Ed Cherobrier came by and asked me if I had any -- worked with any asbestos in any of the work that I was doing at that time.

Q Who was Mr. Cherobrier at that time?

A Well, he worked in the chemistry and toxicology unit.

Q Did he tell you why he was asking you if you had any knowledge in that area?

A Yes. He -- yes, he did.

Q What did he say?

A He said he was trying to determine where asbestos was used on board ship and to what extent.

Q Was the coatings unit in the chemistry and toxicology section?

A No.

Q Did he tell you why he was trying to determine where asbestos was used aboard ship?

A He said there has been -- there was some high-level Navy interest in determining this.

Q Did he tell you why there was high-level Navy

interest in determining that?

A There was an article in one of the papers, The New York Times or The Washington Post -- I've forgotten which -- that spoke to the alleged dangers of asbestos.

Q Is that the first time that you had ever heard that there might be dangers in connection with asbestos?

A Yes.

Q Had you seen the article in the Times or the Post?

A No. ;

Q Were you able to help Mr. Cherobrier with the information that he was looking for?

A Oh, I told him that we used a small amount of asbestos filters in some of our cooling treatments.

Q Did he say anything to suggest that the Navy was going to try to get rid of asbestos in any way at that time?

A At that time, I don't know.

Q Was he the head of the chemistry and toxicology unit at that point?

A No.

Q Did he have a title of some sort?

A Yes.

Q What was it?

A I think it was chemical engineer. It may have been materials engineer.

Q Did he say that there were others who were also trying to find out the various places where asbestos was used aboard ships?

A I don't know.

Q Is this just one conversation that you had with Mr. Cherobrier about this subject, or a series?

A Well, he asked me officially one time, and from time to time he might mention it unofficially, you know, just informal conversation.

Q Did you gather that this was his job at that point, to try to ferret out all the places that asbestos was being used, or did he have other duties as well?

A It was his job, and he had other duties.

Q This is the fall of 1968 that we are talking about?

A Yes.

Q Aside from the conversation with Mr. Cherobrier in the fall of 1968 and the informal or casual talks on the subject that you may have had with him thereafter, was that sort of all there was to your involvement with questions

about asbestos until you moved into the coatings unit in September of 1969?

A Yes.

Q During this year or so between your conversation with Mr. Cherobrier and your moving into the coatings unit, did you become aware in any other way of what the Navy was doing about eliminating or reducing asbestos?

A No. Anything I learned was conversations with either Cherobrier or some of the people he had working with him.

Q Who were they?

A He had some people from Naval Ship Engineer Center, Philadelphia division, tasked to work with him, and I don't remember -- I don't remember their names.

Q Do you remember any of their names?

A One guy was -- his first name was -- I believe was Morty, but I don't remember his last name.

Q Were these people who came down from Philadelphia to Washington to work on this, or were doing it in Philadelphia?

A They were primarily doing it in Philadelphia. Occasionally they would visit.

Q What activities of the Naval Ship Engineering Center went on in Philadelphia?

A Well, the Philadelphia division of Naval Ship Engineering Center dealt with ship machinery, mainly propulsion plants.

Q When you went into the coatings unit in September of 1969, how did you go about learning about insulation?

A I read some of the specs; I referred to a few reference books, talked to my predecessor, talked to other people who dealt with asbestos and its use -- not just -- I'm sorry, I meant to say insulation and its use.

Q Is this other people in the Navy?

A Yes, and outside the Navy, both in and out of the Navy.

Q What other parts of the Navy, other than your coatings unit, had something to do with insulation?

A People that actually applied it; for example, the piping section, the boiler section, refrigeration.

Q Was there also a section that dealt with hull insulation?

A No, no other one, other than us, as I recall.

Q When you speak of the piping section and the

boiler section and the refrigeration section, these are sections of what?

A Well, all of those three were a part of ship machinery division, I believe it was called. In the Navy we use -- the Navy uses codes, c-o-d-e-s, to designate the various offices, and all of those three were in 6140.

Q This is all part of the Naval Ship Engineering Center; is that correct?

A Yes, that's correct.

Q Were they also, like you, concerned with standards and specifications?

A Yes.

Q But they were concerned with other things as well?

A Yes.

Q What?

A Sure. They were -- dealt with the operation of the equipment.

Q When you took over this position in September of 1969, did you find that your predecessor had been in the process of dealing in some way with the elimination of asbestos?

A There had been some work. There had been some

work along these lines, yes.

Q What work had there been?

A Well, as I mentioned, Cherobrier had looked into the places and extent of use of asbestos in the Navy, and he was continuing to do this, and with the over -- I learned later -- with the overall goal of trying to reduce the amount of asbestos that was actually -- the places where it was used and the amount that was used in those places where it must continue to be used.

Q When you went to the coatings unit in September of 1969, did you learn that Cherobrier was apparently the person who was looking for asbestos use throughout the Navy and that was his job and not someone else's job?

A It was primarily his job for Naval ships.

Q Someone else was concerned with aircraft, and I suppose someone else was concerned with building construction; is that right?

A I don't know.

Q Where did you fit into this picture of the overall goal of reducing or eliminating asbestos?

A Well, I was asked to work in conjunction with Cherobrier in this overall job. There was a great deal more

to the overall insulation job than just asbestos.

Q What other things were involved?

A One of the biggest items was flame-retardancy, fire hazards connected with organic insulating materials.

Q What are organic --

A Well, such things as polyurethane, polystyrene, that kind of thing. That incorporated -- that particular job of looking into the fire hazards incorporated more than just insulating materials. It also incorporated paints and certain kinds of fabric materials.

Q Which I suppose were also considered coatings; is that correct?

A Yes, you could look at them that way.

Q So that asbestos and the elimination of asbestos was just one of some problems that you were dealing with; is that correct?

A Yes.

Q Was there any order of priority that you had in dealing with these problems, such as asbestos and fire hazards with organic insulations, things of that sort?

A I had no formal order of priorities, no.

Q Did you have any kind of informal priorities set?

A Well, there are always informal priorities. They change from time to time, depending on the pressures you receive from higher-ups.

Q During the three years that you were with the coatings unit, from September of 1969 to October of '72, did the priority of the asbestos problem vary?

A Yes, it varied from time to time.

Q Tell me, during that period of time, how it varied so far as its ups and downs are concerned.

A I don't know if I can answer that question. It varied based on pressures that had to do with other insulating materials but had nothing to do with asbestos. For example, the one that I already cited was the fire hazard of insulation materials. Another one was the problem -- we were having problems with hull insulation. Many of the people in the field wanted to use another -- a technique for fastening hull insulation that we didn't agree with. They made all kinds of -- people in the field that were applying the hull insulation made all kind of claims that it was difficult to cut, and so on.

I mean, we had a myriad of problems that came up, and, depending on the pressures that were brought to bear by

people higher than I am, than I was at that time and still am, we had to react to it.

Q Was there some time during this three-year span that you were in coatings when the pressure to do something about asbestos became great?

A Well, I was told about that problem when I first took over the job. As a matter of fact, I think that was -- as I recall, that was the first meeting that you had involving insulation, had to do with asbestos. So it was always considered important, but I wasn't working on it constantly.

Q I take it some of these other problems were more important from time to time?

A From time to time they had to be. When there was a fire on board a ship and it had to do with an insulating material, then certainly I was one of the people that was involved in it.

Q What kind of material was being used as hull insulation during the three years you were with the coatings division?

A For surface ships we used fiberglass. For submarines we used a foam rubber.

Q In addition to the hull insulation installation problems that you referred to, the asbestos problem and the fire hazard with organic insulations problem, were there any other problems that you had during the three years that you were with coatings?

A Oh, sure. Sure. We had a lot of problems. A number of problems that dealt with refrigeration compartments. Had a project going for protection of jet blast deflectors from the high temperature and high velocity of the F14 -- of the F14, extremely high temperatures and high velocity from the exhaust of the F14 when it was taking off from an aircraft carrier. We had to protect -- without the kind of coating that we developed, the jet blast deflectors which protect the personnel and equipment on board an aircraft carrier would have been melted. You could use them once and -- the jet blast deflector is as big as this room, so it was an important job, I think.

Q Any other problems?

A Well, there were a lot of little problems that came up, with all kinds of antisweat materials. That was basically -- all the other -- the acoustical problems -- we were always dealing with high noise levels. We started to

get involved with the extremely high temperatures in the fire rooms, some of which went up to a hundred forty, a hundred fifty degrees, Fahrenheit. It was almost -- it was very hot from time to time.

Q All of these subjects that we have been talking about, that were under your cognizance when you were with the coatings division -- did they all involve the need to either revise existing standards and specifications or create new ones, things of that sort?

A They didn't all involve that, no. They included that as appropriate, yes.

Q What I am trying to find out, Mr. Murad, is this: Were you in charge of trying to develop materials to solve problems, or were you merely, in a sense, making decisions on standards and specifications and doing the paperwork?

A Well, a little of both. Really, the way you phrase the question, it is impossible to answer.

Q I take it, maybe, then, from what you have just said to me, that, if a problem arose, such as the one with the jet blast deflectors that you were telling us about, you had concern in one way or another to find a material that

would involve a problem; is that correct?

A That's true.

Q How did you go about finding materials to solve problems?

A That specific case, we tasked Puget Sound Naval Shipyard to survey the field and determine whether there was any kind of existing material that would satisfy the requirements that we set for it. We set them for it based on information we received from carrier-type desk and the Naval Ship Engineering Center, interface with the aircraft carrier type desk, as it was called at that time, and we worked with NAVAIR, Naval Air Engineering Center, or Naval Air Systems Command. We also, by the way, worked with Naval Air Engineering Center, but that's another part of it.

We then tested those materials that were -- or we saw to it that those materials that were selected were tested on a small scale, a pilot scale, and a full scale. We worked with a variety of different people at different places to do it. I don't know if you want to take the time here to break it down.

That's how we worked that particular one.

Q Is that, in general, the way you solved problems

of materials?

A That's one way to do it.

Q Tell me another way.

A Another way is to get information from industry and work with them to -- and with the existing engineering and testing organizations -- to come up with materials; for example, the American Society For Testing & Materials.

A good deal of it has to do with the funds that are available to do the job. In the case of the jet blast deflector, we were allocated funds; we were funded by people at Naval Ship Systems Command. In the case of some others, we were not given funds, so we tried the best we could, depending on -- obviously, if you have money to pay people to do a job, the job gets done better --

Q Faster --

A -- than if you have to do it with no funds.

MR. NOWINSKI: Would this be a good time to take a break?

MR. JELLEY: Sure.

MR. NOWINSKI: About five minutes.

(A recess was taken from 11:09 a.m. until 11:19 a.m.)

MR. NOWINSKI: Off the record.

(Discussion off the record)

BY MR. HOWD:

Q Mr. Murad, you have explained to us your early conversation with Mr. Cherobrier concerning the asbestos substitution program or attempts. Did you receive any written material from him concerning asbestos and health at any time?

A Not that I recall. I may have. As I said earlier, I may have read that newspaper article that seemed to kick this whole thing off, but I don't remember when I read it or even if I did read it. I certainly remember talking about it, hearing about it.

Q You remember it being brought to your attention?

A It was brought to my attention, yes.

Q There was the Times, The New York Times article?

A It was either the Times or the Post.

Q Or The Washington Post?

A One or the other.

Q It concerned the Selikoff work?

A Yes.

Q Have you ever seen this document, sir?

BY MR. JELLEY:

Q Mr. Murad, before we broke briefly, we were talking about the problem of jet blast deflectors and how a problem of that sort got solved. I understand from what you have said that you were in a position, with respect to the solution of the problem, that might be spoken of as coordinator. Is that an accurate characterization?

A For some jobs, yes.

Q In other words, information about the problem came in to you from the field in one way or another; you set information-gathering processes into motion in one way or another and got that information, and tried to fit the problem and possible solutions together; is that correct?

A Yes.

Q Who, then, was the decision-maker with respect to a possible solution to a problem? Was that you or someone else?

Mr. LEVY: Are we talking generally now, or are we talking about the blasting --

MR. JELLEY: We are talking generally.

A Generally, I would just recommend.

Q To?

A To my bosses.

Q Then are you saying that, in a sense, the decision would be made at some level of the Navy Ship Engineering Center?

A Perhaps. It might be made at the Naval Ship Engineering Center or some other place.

Q Higher, in other words?

A Yes.

Q Turning from the general to the more specific, one of the problems that you were dealing with while you were in the coatings division was this question of asbestos. Correct?

A Yes.

Q What, as you understood it, during the three years that you were there, was the problem, if you will, that you were trying to solve?

A We were trying to reduce the amount of asbestos used on board Navy ships for insulation purposes.

Q The reason that that was a problem was what?

A We were told that there was allegations made that it was a hazard.

Q Do I correctly assume that you did not get

involved in the investigation of those allegations in any way?

A Yes, you are correct in assuming that.

Q So that, for your purposes, you accepted it as a problem and went about trying to solve it; is that correct?

A Basically, that's right.

Q Was this a problem that ran throughout the ships part of the Navy, or was just confined to one kind of ships, like submarines?

A All ships.

Q Do you know whether the problem and efforts to get a solution went beyond ships, to aircraft as well?

A I don't know.

Q What about structures, buildings, things of that sort?

A I don't know that, either.

Q In other words, you were just concerned with ships, and you did not deal with any of the other parts?

A That's right, yes.

Q Was the problem the same in submarines as it was in surface ships, or was there a different problem, different in degree or in kind?

A The objective was the same.

Q Was the problem the same?

MR. JELLEY: That is withdrawn. That is not a good question.

Q At the time that we are talking about, from the fall of 1969 to the fall of '72, when you were with the coatings division, you, of course, had a number of military standards that called for asbestos for various insulation purposes; isn't that true?

A The only -- as I recall, there was just the one standard.

Q Maybe I am using my language incorrectly. Is it military specifications? Is that the terminology?

A There are specs and there are standards.

Q What is the difference?

A Specification identifies a particular material. A standard gives procedures on how you use that material, how the material is applied.

Q Specifications are these things with MIL spec numbers, and so on; is that correct?

A They have MIL spec numbers, yes.

Q All right, let me ask a different question, then. At the time that you were with the coatings

division, from the fall of 1969 to the fall of '72, you had a number of different military specifications for insulation used aboard ships that called for asbestos. Is that correct?

MR. NOWINSKI: Excuse me, Counsel. What do you mean, "called for asbestos"?

MR. JELLEY: That required the use of asbestos.

A Here again, the specification identifies the characteristics. We used mainly performance specifications, called for the performance of a -- the performance characteristics of the material. That's what the specification does; it describes the performance that the material -- of that material.

Q So that the specifications, or most of the specifications that you were dealing with for insulation on ships, were performance specifications that required material that did particular things but didn't necessarily call for asbestos. Is that correct?

A Didn't necessarily -- yes, that's right.

Q Why, when you were trying to reduce the amount of asbestos aboard ships, didn't you just revise the military specifications for insulation so as to provide that asbestos

was not to be used?

A Based on -- we didn't know of any materials that would do the job.

Q Other than asbestos?

A That's right.

Q So that, even though the military specifications for insulation aboard ships might not call for asbestos by name, there was no other material that you knew of at the time that met the performance requirements of those specifications; is that correct?

A Yes. Again, asbestos is used for high-temperature insulation.

Q Yes. We are not talking about hull insulation, I suppose, here; are we?

A No. No.

Q Because there you were primarily using fiberglass aboard surface vessels and foam rubber on submarines; is that correct?

A Right.

Q How did you go about solving this problem of finding materials that would meet the performance requirements of the military specifications for shipboard insulation

but would not contain asbestos?

A We tried to learn of materials that had lesser amounts of asbestos that would still do the job--or better, of no asbestos, and still do the job--from industrial sources.

Q What kind of progress did you make with that problem during the time that you were at the coatings division?

A I'm not sure if I can answer that question, what kind of progress.

Q Were you able to, during that three-year period, solve the problem, so that by the time you left the coatings division in the fall of 1972 you had managed to find all nonasbestos materials, or was the problem still pending?

A We were not able to find all nonasbestos-containing materials that would do the job for high-temperature insulation at that time.

Q Had you solved any part of the problem by then?

A We were able to reduce the amount of asbestos in some of the high-temperature insulation materials.

Q Which materials?

A Some of the batting materials, some of the pipe insulation materials, boiler insulation materials.

Q Did these partial solutions, if you will, involve finding other materials that were just as good as asbestos, or did they involve reducing the performance requirements?

A We had to maintain the performance requirements.

Q So you are saying that you did not reduce the performance requirements in the specifications; is that correct?

A Right.

Q In addition to going out to industry for help in solving this problem, did you have any studies of any sort done within the Navy to help solve the problem?

A We used a -- toward the very end of the time period that I was involved, we had a task going in

California on board a ship to determine whether a non-asbestos, high-temperature insulation material could do the job of asbestos-containing material.

Q Is that the only task, as you put it, that was being done within the Navy during your time in this position?

A To my knowledge, yes.

Q Did there ever come a time within the three years that you were in the coatings division where, to your knowledge, any studies were done to determine whether or not

this was really a problem in the first place?

A I don't know.

Q During your three years in the coatings division, was there any questioning, to your knowledge, going on in the Navy as to whether reduction or elimination of asbestos was really necessary, after all?

A I don't know.

Q Do I correctly assume, then, that during that three-year period your mission to reduce or eliminate asbestos aboard ship remained a constant mission?

A Yes.

Q But the priority of it varied from time to time; is that correct?

A As I explained earlier, yes.

Q In addition to the quest for substitute materials that you have told us about, did you get involved in any way with methods of handling asbestos, either in new installation or ripping out of old installations?

A Yes.

Q In what way were you involved in those matters?

A I was a party to writing an instruction, citing the procedures to be used when working with asbestos.

Q I take it that, when you say that you were a party, maybe there were others involved as well?

A Yes.

Q Were those others from different disciplines than yours?

A Some.

Q What kinds of people were involved in the writing of this instruction?

A A man from NAVSHIPS, code 07, which they are concerned with shipyard resources, were involved. There were people -- Ed Cherobrier was involved; people in the safety area of NAVSHIPS -- NAVSEC, rather -- were involved, as I recall.

Q Any other types?

A That's all -- I think that's it.

Q The first one that you mentioned was code 07 of NAVSHIPS. NAVSHIPS is --

A Naval -- well, at that time it was called Naval Ships Systems Command.

Q This is the old BUSHIPS?

A Well, it is one of the derivatives of the old BUSHIPS, yes.

Q What is code 07?

A They are concerned with shipyard resources, both the equipment and manpower.

Q This is just Naval shipyards or --

A Yes --

Q -- commercial ones also?

A -- yes, Naval shipyard. That's what they were concerned with at that time.

Q What input were the code 07 people bringing to bear on this problem?

A Well, they were drafting the instruction.

Q When you say that they were concerned with or involved with shipyard resources, what kind of resources are you talking about?

A Manpower and equipment.

Q Were they concerned with the question of whether or not the shipyards would be able to carry out the new procedures?

A Yes.

Q You said Mr. Cherobrier was involved. What was his involvement at this time?

A He was working with the man from 07.

Q Who was the man from 07?

A Jerry Crawford.

MR. ELLIS: Would you spell that, please.

THE WITNESS: Crawford, C-r-a-w-f-o-r-d, I believe.

BY MR. JELLEY:

Q Who were the safety people from NAVSEC who were involved?

A Larry Farina.;

Q NAVSEC is the --

A Naval Ship Engineering Center.

Q How did you, in connection with this writing of an instruction for procedures when working with asbestos, know, if you did know, what the field practices were and what problems there might be in making changes in those practices?

A It was based on a survey that was done by Naval Ship Engineering Center, Philadelphia division.

Q What survey is that?

A That was done in connection with the work that Cherobrier was doing with Philadelphia division.

Q Is this some kind of a written survey?

A I don't know. Cherobrier had been working with the people at Philadelphia to determine the extent and -- where and to what extent the asbestos was used on board ship and also to determine how best to work with it, how to keep asbestos fibers to a minimum in the atmosphere, or environment, I should say.

Q What kind of a survey had Philadelphia done?

A They had gone to the Naval shipyards to determine these things that I just mentioned.

Q Just the Naval shipyards?

A I don't know.

Q Was your instruction giving procedures when working with asbestos to be applicable not only to Naval shipyards but also to commercial shipyards working on Navy contracts?

A I think there was going to be a NAVSHIPS instruction, and I believe -- I don't remember. I don't remember what the distribution was.

Q What was the number of that instruction when it came out?

A I don't remember that.

Q This survey that was done by Philadelphia that

you had spoken about -- had that begun prior to the time you moved over to the coatings division?

A Yes.

Q Had that begun back in the fall of 1968, when Mr. Cherobrier spoke with you about asbestos?

A Yes, I believe so.

Q Was it underway prior to that time, of the fall of 1968?

A No.

Q Did this project of writing an instruction giving procedures for working with asbestos get completed during the time that you were with the coatings division?

A Yes.

Q An instruction was issued; is that correct?

A Yes.

Q Is that the only involvement that you had, while you were with the coatings division, that dealt with the way asbestos was used, either in new construction or ripouts, as opposed to dealing with asbestos as a material and substitutes for it?

A No.

Q How else were you involved?

A Sometime later I visited a few shipyards to see how well they were adhering to that instruction.

Q Which shipyards?

A Boston, Portsmouth, Norfolk and Charleston.

Q Any other involvement with how asbestos was actually used in the field, as opposed to asbestos as a material, while you were with the coatings division?

A Not that I recall offhand, no.

Q During the three years that you were with the coatings division, was there someone that you thought of as being the person in charge of this problem of reducing or eliminating asbestos?

A Well, Cherobrier was -- and myself -- were involved, certainly; and, of course, our mutual bosses.

Q Did either of your bosses have direct and continuing involvement, or were they involved merely because they were the supervisors?

A Well, that's a difficult question to answer, because they were the supervisors, and, as such, they were directly involved.

Q But you and Cherobrier were doing the work?

A Yes. Yes.

Q Who was your boss during those three years?
You have told me, I think, already, but I have forgotten.

A Yes. My immediate boss was Ed Morganstearn.

Q Cherobrier's boss was?

A Frank Lovell.

Q During the three years that you were in coatings, did Cherobrier stay in the same position that he had been in before you moved over to coatings?

A Yes.

Q Why was he involved in such a leading position in this asbestos problem?

A I don't know.

Q Was there something about his background that made him somehow specially fit for the asbestos program, or what? You do not know?

A His background, I believe, was as a chemist. He had a chemistry background. If that made him specially fit, I don't know.

Q While you were over in coatings, what did he do differently from what you did on asbestos?

A He wasn't as much involved in the actual writing of the specifications. He was involved in -- got involved

with contractors, you know, the manufacturers and suppliers, to gather information; and I would, too. He continued to work with their residual tasks involved with the survey that had been done previously by the Philadelphia people, continued to work on the specifications. There was no clear-cut set of steps that he would do or I would do.

Q Is he still with the Navy?

A No.

Q Is he retired, or working for someone else?

A He is retired, as far as I know. I don't know if he's working for someone else or not.

Q Is he still in the Washington area?

A I don't know.

Q Did he retire during the time that you were with coatings or did he --

A No.

Q Sometime thereafter?

A Sometime thereafter.

Q What did you do after you left the coatings division in the fall of 1972?

A Went to work for Naval Ships Systems Command.

Q In what position?

A Called me a materials engineer, and later that was changed to general engineer.

Q Did you continue to have something to do with asbestos, or did your assignment change when you made that move?

A It changed.

Q What did you have concern with thereafter?

Q Design services, all occasion. We coordinated the design and engineering work associated with the fleet modernization program.

Q Was this a promotion for you?

A No.

Q Why did you leave the coatings unit?

A I wanted to work closer to where I lived. Again, a little bit more management experience, but it primarily was to be closer to where I worked.

Q You were replaced by Mr. Winer, was it?

A Well, he took over some aspects of the job, yes.

Q Who took over the unfinished business that you left behind when you left the job?

A Well, Winer took over the work on asbestos.

Q I see.

A And Cherobrier continued to work with him. And then the other insulation work fell into people who were dealing with plastics, rubber, that kind of thing. I think Winer also took over some of the hull insulation, fiberglass.

Q At the time you left, was there a reorganization of the unit that you were with or --

A No.

Q After you left the coatings division, was that the end of your association with asbestos and its problems?

A Yes.

Q Who was Mr. Birnbaum?

A Mr. Birnbaum was second-level supervision. He was Ed Morganstearn's boss, and he was Frank Lovell's boss.

Q What was his title?

A I think that was a section head.

Q During the time that you were in the coatings unit or at any other time that you were working for the Navy, were you involved with any organizations or associations that were in any way involved with this asbestos problem?

A Yes. I was one of the Navy representatives on the American Society For Testing & Materials.

Q What is the American Society For Testing &

Materials?

A ASTM is a group of people who work in industry and government on all kinds of materials that are used in construction, shipbuilding, throughout industry. They set the -- certain standards, mutually agreed upon standards and testing procedures. They have a variety of -- a large number of sections. I was in the insulation section, I believe.

Q Was that just during the time that you were in coatings that you were in the --

A Yes. That's the only time I was a Navy rep. I was involved with them when I was in water treatment, because they have a water treatment section.

Q Were you the only Navy rep to the insulation section of the ASTM during the time that you were in the coatings unit?

A I don't know.

Q Any other organizations or associations that you were involved with that had anything to do with asbestos?

A Well, involved in that I was involved with NIMA, to the extent that we interfaced with NIMA. National Insulation Manufacturers Association I believe is the name,

NIMA. We used to clear many of our specifications with them to make sure that the kind of performance requirements we set forth were, in fact, attainable.

Q You said that your predecessor in your job was Mr. Pugielissi?

A Right.

Q Is he still with the Navy?

A Yes.

Q What is his position at this point?

A He's in the air conditioning unit.

Q This is --

A Also Naval Ship Engineering Center.

Q You said his predecessor was Bob Seith. Is he still with the Navy?

A I don't know.

Q Do you even know him?

A Yes, I know who he is.

Q When did you last see or hear of him?

A Oh, gee, about August of '72.

Q Was he still with the Navy then?

A Yes.

Q Where?

A At that time he was with Naval Ships -- no, wait.
No, he was with Naval Ship Engineering Center.

MR. NOWINSKI: It is twelve o'clock.

Would this be a convenient place for you to break?

MR. JELLEY: Yes, it probably is, but let
me ask one or two more questions.

BY MR. JELLEY:

Q Mr. Murad, in connection with this deposition
today, the notice of deposition asked you to produce a rather
extensive array of documents. Have you brought anything with
you in connection with that notice of deposition?

A No.

Q Why not?

A I don't have anything.

MR. JELLEY: Now we might as well break.

(A recess was taken for luncheon at 12:04
o'clock p.m.)

AFTERNOON SESSION1:08 P.M.

H E N R Y G . M U R A D resumed and testified

further as follows:

DIRECT EXAMINATION (CONT'D)

BY MR. JELLEY:

Q Mr. Murad, we were talking just before lunch about the items listed in the notice of your deposition, and you said that you had not brought anything with you today because none of the items existed. Is that correct?

A That I don't have any of the items.

Q You do not have them. All right. That is, of course, because you are no longer working for the Navy and instead are working for the Air Force; is that correct?

A That's -- yes, that's true. Also because, even if I were working for the Navy at my last job, it wouldn't have anything to do with the work I was doing previous to that.

Q Because these things pertained to the time that you were with the coatings unit, and you were last there in 1972?

A That's right.

MR. JELLEY: I have no further questions.

CROSS-EXAMINATION

BY MR. CHRISTIE:

Q Mr. Murad, my name is Fred Christie, and I represent Westinghouse Electric. I have just one or two questions.

Insofar as your task was to try and reduce or eliminate asbestos from insulation purposes aboard Navy ships, did you attempt to remove all asbestos, if possible? Was that the goal of the program?

A Well, first of all, I'm not sure if it was a program, per se, but that was an objective to -- there was no stated program. We would do this, but that would be the ideal; that would be the ultimate, yes.

Q My point is, insofar as asbestos is utilized in some electrical applications, rather than pure, per se, in insulation applications, did you make any efforts to try and reduce or eliminate asbestos from electrical components as well --

A I didn't get involved in that, no.

Q Was there somebody else, to your knowledge, that was --

A I don't know.

Q So, insofar as your task was concerned, it was limited to insulation materials --

A Thermal insulation materials, that's right.

Q Would you put asbestos-containing gaskets in the thermal insulation category?

A No, because the purpose of insulation is to reduce the flow of heat.

Q So can I take it from your answer that, insofar as asbestos-containing gaskets were used aboard Navy ships, your job was not to try and find a substitute for those asbestos gaskets?

A Yes, you are right.

Q I am correct?

A You are right.

MR. CHRISTIE: I have no other questions.

Thank you, sir.

BY MR. KENNY:

Q Mr. Murad, apparently your period of activity insofar as asbestos is concerned is the period from 1969 up to '72?

A That's correct.

Q You spoke of being a co-author or part author of instructions on working practices with asbestos?

A I was a party to it.

Q In what way were you a party to it, sir?

A Well, that instruction had been revised several times before it actually was finalized and signed out, and I was involved in updating, I believe it was, the last revision or last couple of revisions before it was signed out.

Q Could you tell us what these instructions provided?

A I can give you --

Q The substance.

A -- as to my recollection.

Q Yes.

A Essentially, to -- the goal was to keep the asbestos fibers in the atmosphere to an absolute minimum and to reduce the chances of workers in that immediate area from breathing in or ingesting asbestos -- whatever asbestos fibers might be in the atmosphere. With that as the goal, we, first of all, were to -- supposed to put -- you're supposed to wet down the area before ripout with a fine water spray. You're supposed to wear respirators. There

was no smoking permitted during the ripout of asbestos. There was -- asbestos was to be -- the insulation that was on pipes was to be cut off, using a special kind of shears, as opposed to just ripping it out by hand. The air was to be monitored for asbestos content of a certain size, between 5 and 50 microns. Every so often -- I've forgotten what the interval was -- there was a certain threshold limit above which it was not permitted. What else? Clothes were to be special -- laundered in a special way, outside of the -- first of all, the workers were to be -- to have special clothing on, overalls and gloves.

Q Here, sir. I do not want to interrupt you in your answer, but this probably may help refresh you. I will show you this and ask you whether or not this is a copy of the NAVSHIP instruction that you are testifying about now and that you have testified to earlier.

Mr. LEVY: Which one is it? What is the number?

MR. NOWINSKI: I have been handed a copy of NAVSHIPINST 5100.26, dated February 9, 1971.

Take your time and look it over.

BY MR. KENNY:

Q Look this over.

MR. LEVY: For the record, is that the same one that was marked during Mr. Winer's deposition as Exhibit 2?

MR. KENNY: Was it? I was not there.

MR. SCHWARTZ: Off the record.

(Discussion off the record)

A Yes, I believe; this is the one. This is the one.

Q This is the one that we have been talking about here this morning and just after the noon recess; right?

A Right.

What was the distribution? I'm just interested to see what the distribution really was on it. Okay.

Q It would appear as if it went to almost all divisions of the Navy; did it not?

A Well, it went to quite a few of the operating divisions.

MR. KENNY: Could I have this marked?

MR. SCHWARTZ: Off the record.

(Discussion off the record)

(Copy of NAVALCHIPSINSTR 5100.26, dated

February 9, 1971, consisting of nine pages, was marked Defendants' (Murad) Exhibit 1 for identification, as of this date.)

BY MR. KENNY:

Q Now, sir, showing you Defendants' (Murad) Exhibit 1 for identification and asking if perhaps you might refresh your recollection, I would like to know what part of that particular instruction was your contribution.

A Well, as I said earlier, this was drafted several times, and I simply went over it once or twice to make sure that everything was up-to-date as of the -- it came out finally in February of '71, so I just brought it up-to-date the last one or two times around.

Q For how long a period was this study in the works?

A The study that resulted in this?

Q Yes.

A I know it started in the latter part of -- in the fall of '68. I don't know when it ended.

Q You indicated that it involved work by several different individuals, including yourself?

A I was sort of a party to it.

MR. NOWINSKI: Excuse me. Are you

talking about the instruction or the study?

MR. KENNY: The study.

A (Continuing) The study was carried out, really, by Ed Cherobrier. He was the coordinator for it; he was leading it. The people at Philadelphia, at the Naval Ship Engineering Center, Philadelphia division, actually did the work. I believe Ed Cherobrier went along with them to at least some of the Naval shipyards.

Q In connection with the work, I would like to know a little bit about the mechanics. You say that Mr. Cherobrier supervised the work; right?

A More or less, yes.

Q And there were individuals working under him --

A Right.

Q -- who were directed to go out and visit certain shipyards with certain objectives in mind; is that correct?

A Yes.

Q Were you involved in part of that survey work?

A No, I wasn't.

Q You, yourself, were not directly --

A No, I was not.

Q -- directly involved.

Was there a file, to your knowledge, made up with regard to that survey work?

A I don't know.

Q You do not know whether or not there was a file kept on this? This is before it became a Naval ship instruction.

MR. NOWINSKI: Excuse me, Mr. Kenny. Are you talking about the study that started in the fall of 1968 --

MR. KENNY: 1968.

MR. NOWINSKI: -- or are you talking about the instruction you are holding in your hand?

MR. KENNY: I gather that, you know, the study antedated the instruction and the instruction constitutes what came out of the study.

BY MR. KENNY:

Q Is that correct, Mr. Murad?

A Yes, the study was used as part of this, that's right.

Q So I am talking about the study, sir. To your knowledge, you have no knowledge, direct or indirect, that

there was ever a file that concerned itself solely with the study that was commenced in 1968?

A No, I don't recall it. I just can't answer you directly, because I can't recall it specifically.

Q Do you know what shipyards were involved in connection with the study?

A Well, certainly Philadelphia, and I know they went to several yards. I'm not a hundred percent sure if they went to all the Naval shipyards or not. They did go to several yards.

Q When you say "several," sir --

A Several Naval shipyards.

Q Drawing on your memory, what do you recall as to the actual shipyards that they went to?

A I don't know.

Q Do you know whether or not they went to any contract yards?

A No. No, I don't. I don't know if they went to them or not.

Q Were you in attendance at any meetings, at the time that these studies were going on, in which the progress of these studies was discussed?

A Not in any meetings per se, no. Ed Cherobrier mentioned informally to me that he was doing this. In that sense, I knew of it.

Q You correct me if I am in error, Mr. Murad, but did you say earlier in your testimony that this NAVSHIP instruction, 5100.26, was actually a revision of earlier NAVSHIP instructions?

A No. What I was saying was it was a revised draft, that it hadn't been signed out but it had been drafted several times, and prior to actually becoming an official instruction it had been changed.

Q Can you recall when it was initially drafted, sir?

A I don't know with accuracy when it was.

Q Could you approximate, estimate?

A Say a few months would be my guess. That's a guess, really.

Q That would have been the initial instruction, then, dealing with work practices at Navy shipyards?

A No, it wouldn't be the initial instruction. That's the only instruction. That would be the initial work. That was when work was initiated on drafting it.

Q But prior to February 1971, do you have any knowledge that the United States Navy had any instructions whatsoever, prior to that, on work practices in Navy shipyards, treating with asbestos?

A I don't know.

Q Did you, yourself, ever have occasion to look at any prior NAVSHIPS instructions or material, data, pertaining to work practices in Navy shipyards prior to this NAVSHIP instruction of February 1971?

A I don't -- no.

Q You indicated that during this period of time you, yourself, had occasion to visit some of the shipyards to examine the work practices?

A After that instruction came out, yes.

Q You mean after it became effective as of February 1971?

A Yes.

Q You indicated that you visited Boston, Portsmouth, Norfolk and Charleston?

A Yes, right.

Q With regard to your visit to Norfolk shipyard, was that in 1971?

A It was either late in '71 or early in '72.

Q Tell me: What type of an examination or visit did you make?

MR. NOWINSKI: Do not answer that.

He is not going to answer any questions regarding inspections of Naval shipyards.

MR. KENNY: May I ask the ground?

MR. NOWINSKI: Total lack of any relevancy to the subject matter of this action.

MR. KENNY: That is no part of the stipulation that has been entered into here. I mean I do not see how you can play the role of Judge Blumenfeld, ruling on the relevancy of a query, where the stipulation is that all objections except as to form are reserved for the time of trial.

MR. NOWINSKI: They certainly are reserved, but that is, in my judgment --

MR. KENNY: Certainly, the knowledge --

MR. NOWINSKI: Excuse me, Mr. Kenny. The reservation of the objections does not foreclose my right to assert them now.

This witness need not answer any questions, under the Federal Rules, that are so totally foreign to the relevancy of the subject matter of this action as those, and we are not going to waste our time sitting here doing it.

MR. KENNY: In other words, you are not prepared to observe this stipulation that you followed heretofore?

Mr. Brown, will you mark that down, because I think we ought to get a ruling from Judge Blumenfeld on that.

Are you saying now that any query that I put to this gentleman as to any visits that he has made to any shipyards with regard to whether or not Naval Ship Instruction 510.6 is being properly executed is irrelevant to any issue that is in the pending action?

MR. NOWINSKI: I assume you mean NAVSHIPS instruction 5100.26, and, if that is the case, that is my position.

MR. MOHR: Just so I understand this, are you going to say that we cannot ask any questions

concerning his examination of other shipyards?

MR. NOWINSKI: Naval shipyards, for purposes of compliance with NAVSHIPINST 5100.26.

MR. KENNY: All right.

MR. COYNE: Joe, before you start . . .

Just for the record, I disagree with your position, Peter, completely, and also, in this case, Judge Blumenfeld, with regard to another defendant, has endorsed a motion indicating that counsel cannot direct witnesses not to answer questions based on relevancy.

MR. NOWINSKI: I have not seen such an order --

MR. COYNE: I am looking for it for you.

MR. NOWINSKI: -- or been made a party to any proceedings leading up to such an order and do not feel bound by any such order.

MR. MOHER: I think that order that he is referring to, Peter, is a deposition which you attended, and out of that deposition came a Court order.

MR. NOWINSKI: As I say, Jim, not that I

am aware of or was a party to.

MR. MOHER: I think it was the Amatex deposition, and the direct --

MR. NOWINSKI: Actually, I am surprised I never had notice of proceedings leading up to such an order.

MR. MOHER: Off the record for a second.

(Discussion off the record)

MR. MOHER: All right, back on the record.

MR. KENNY: Now, without regard to NAVSHIP instruction 5100.26, Mr. Nowinski, I am going to ask this gentleman about his visits to any of these Navy shipyards and as to his observations during those visits. What is your situation with regard to that?

MR. NOWINSKI: Mr. Kenny, he has told you he visited three Naval shipyards for a purpose of having to do with NAVSHIPS instruction 5100.26, and I am not going to permit him to answer any questions about the results of those inspections. If he made other inspections, I will consider different advice or instruction to the witness.

MR. KENNY: All right.

BY MR. KENNY:

Q Mr. Murad, I asked you about Norfolk, the visit to Norfolk shipyard, and you thought it was the latter part of 1971. Is that correct?

A The latter part of '71 or early '72, yes.

Q What did your examination consist of?

MR. NOWINSKI: Do not answer the question.

Q How long did your examination last?

MR. NOWINSKI: Do not answer the question.

Mr. Kenny, if you are going to pursue this --

MR. KENNY: I am.

MR. NOWINSKI: -- we are not going to remain. I have told you what my position on it is.

MR. KENNY: I am sorry, Mr. Nowinski. For the record, I am going to pursue it, and I see no reason why you are going to be able to handcuff me in regard to pursuing it --

MR. NOWINSKI: Mr. Kenny, may I make --

MR. KENNY: -- and, if you want to cut me off and walk out of here, that is your

prerogative.

MR. NOWINSKI: Mr. Kenny, if I might, I suggest you either continue the deposition on other matters or, if you want to terminate this deposition now to get a ruling from Judge Blumenfeld, that is your choice; but please do not make us sit here just to require me to instruct the man over and over to refuse to answer questions about these specific inspections, which I have told you he is not going to answer questions about.

MR. SCHWARTZ: Peter, doesn't Mr. Kenny have to raise the question? Unless you are willing to --

MR. KENNY: Let's not get into academics here. I am going to pursue the examination in my own light.

MR. SCHWARTZ: Off the record.

(Discussion off the record)

MR. KENNY: Will this encompass, Mr. Nowinski, any conversations which he had prior to his visit to Norfolk or any other shipyards with

regard to preparing himself in readiness for the examination, any conversations which he had at the respective shipyards with any personnel, either government or nongovernment? In other words, anything pertaining to any steps whatsoever toward preparing for the trip, making the trip, the results of the trip, recommendations of the trip, any communications, oral or written, in the wake of the trip or trips; that is what you are objecting to because it relates to the NAVSHIP instruction that is the point of contention? Is that correct? Could we agree on that?

MR. NOWINSKI: Basically, that is a fair statement of my position.

MR. KENNY: All right. Is that a fair statement of my query? I mean, I am not attempting to diagram the question, but I am merely saying does it paraphrase.

MR. NOWINSKI: I am willing to concede that those are matters that you would like to inquire about that my instructions to the witness do not permit.

MR. KENNY: I have been properly muzzled.

MR. LEVY: I do not understand the ground, the legal ground for the objection.

MR. NOWINSKI: It is on the record.

MR. LEVY: I don't think that does anything. I don't think it says anything.

MR. KENNY: I am through.

BY MR. MONTSTREAM:

Q I have a few questions, Mr. Murad.

When you in 1965 were involved in the Marine Engineering Lab in Annapolis and involved in the fluid processing lab, involved with submarine atmospheres, was asbestos one of the things that was touched upon, even though it may not have been a problem at the time?

A No.

Q So the breathing air for the crew of a submarine at that time, as far as you are aware, in no way monitored asbestos content in the air?

A That's right, not for any of the work that I was involved in.

Q Do you know whether, for any other purpose, asbestos content in the air was monitored in around 1965?

A No, I don't know.

Q Was there any other branch of the government, to your knowledge, which might have been involved in other phases of the atmosphere and breathing air aboard a submarine?

A Not that I knew of at that time, and I don't think since.

Q What is the basis for the comment that you have just made, that you don't believe at that time or since --

A No, I say I didn't know of any at that time, and I don't think so even since that time.

Q At the Naval Ships Engineering Center, you were dealing with water treatments systems and clarifying chemicals of one sort or another, and, as I understand it, asbestos was used in some of the filtering that was done at that time?

A Yes.

Q Could you give us an example of where an asbestos filter might have been used?

A As I recall -- I may be wrong, but, as I recall, it was in the water treatment of boiler water, just to filter out any particulate matter that might be there.

Q Were those changeable filters, or would that require a general overhaul of the vessel?

A My memory is a little bad here, but -- because we didn't work with them much, but I believe they were in a housing.

Q Which could be changed by the crew?

A That I don't know. Might have to -- the ship might have to come into a shipyard. I really don't know.

Q When you indicated you came into the coating unit in 1969 and there were six or seven employees in that unit, did that include secretarial staff?

A There was no secretary in that unit. There was a secretary for the section. The section was made up of the two units. One was the coatings; the other was the chemistry and toxicology unit.

Q However, within that unit, you were the basic person involved in an effort to reduce the amount of asbestos aboard Naval ships?

A Well, again, along with Ed Cherobrier.

Q Was he within that unit?

A He was in the chemistry and toxicology unit.

Q But he was not in the coatings unit, as such?

A No, he was not.

Q What percentage of your time from September of 1969 to October of 1972 would you have been involved in dealing with the asbestos aboard ships?

A I don't know.

Q You have mentioned baffles on aircraft carriers, and you were involved in other projects. Would it be a small percentage of your time, a large percentage?

MR. NOWINSKI: What is the pending question?

THE WITNESS: How much time I spent.

(The pending question was read.)

MR. NOWINSKI: Would what be?

MR. MONTSTREAM: Why don't you read the preceding question.

(The record was read.)

MR. MONTSTREAM: You are right, Peter; it is a bad question. Let me rephrase it.

BY MR. MONTSTREAM:

Q Concerning yourself with the asbestos aboard ships, as the area of inquiry, would that have been a small percentage of your total time from 1969 to '72 or a larger

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percentage of time?

MR. NOWINSKI: Excuse me, Bob. I would let him estimate the percentage of time if he could. He has already said he can't.

The further problem I have with your question is I do not know what a large percentage or a small percentage is.

MR. MONTSTREAM: I am prepared to accept his versions and definitions. I would like to have some expression.

MR. NOWINSKI: I will allow him to estimate, if he can, the time he devoted to those matters.

MR. MONTSTREAM: Thank you.

A Well, if it is just a guess or an estimate, I'd say in the neighborhood of maybe 10 to 15 percent, in that area.

Q Do you know whether Mr. Cherobrier would have spent more or less time than you in the same project?

A I really don't know his percentage of time.

Q When did he first come to you and ask questions pertaining to your experience with asbestos?

A Well, it was in the fall of '68.

Q Where was that?

A That was when I was at Ship Engineering Center.

Q Did he identify any of the so-called high-level Navy personnel who were interested in the asbestos problem?

A Not by name, no. He said some admirals; some admirals were.

Q Did he identify them by title?

A No, just the rank.

Q And that rank was?

A Admirals.

Q Is that a plural on that?

A Yes.

Q Did he indicate the date of the article that had been seen in The New York Times or The Washington Post?

A No, but it was shortly before he asked the question. He didn't give me the exact date.

Q Did you ever see that article?

A Yes, I think I did, but I didn't -- I'm trying to remember now if I actually saw the article or not. I certainly heard about it, and I think I did see it later on, but that's the best answer I can give you.

Q When he spoke to you in the fall of 1968, did he indicate that he was already embarking on a program or a study to reduce asbestos aboard ships?

A Initially?

Q Yes.

Q When he first asked me? Well, I got that impression. I'm not sure if he said it or if it was just my conclusion.

Q How long did you chat?

A The initial chat was short, fifteen minutes or so.

Q Did he discuss any work that he might have done already on such an effort?

A No, not that I recall.

Q Did he discuss with you what he felt the goal would be?

A Again, as I recall, it was to determine where asbestos was used on board ship and to what extent.

Q What was your understanding of the health hazard that was involved in that initial conversation --

MR. NOWINSKI: Wait a minute.

Q -- pertaining to asbestos exposure.

MR. NOWINSKI: Go ahead.

A Well, according to what I was told, there was an article in the paper that was -- that addressed work by Dr. Selikoff, in which Selikoff alleged that asbestos was a health hazard.

Q Can you be any more specific as to what you believed the health hazard might have been?

MR. NOWINSKI: Excuse me. The last question was his understanding of what the health hazard was. ;

MR. MONTSTREAM: And he did not answer the question specifically, so, rather than repeating it, I am coming at it again.

MR. NOWINSKI: You are asking now for his belief as to what the health hazard was?

MR. MONTSTREAM: Yes.

MR. NOWINSKI: I will not allow him to answer that. He's got absolutely no foundation-- at least you have laid none--to make his belief regarding the health hazards at all relevant.

MR. MONTSTREAM: Your objection is noted. Can he answer the question?

MR. NOWINSKI: No.

MR. MONTSTREAM: Are you directing him not to answer?

MR. NOWINSKI: I am.

BY MR. MONTSTREAM:

Q At the time you went to the coatings unit, you indicated that you read some specifications and also some books. Can you tell us what the books were that you made reference to?

A Well, it was -- I recall -- I referred to some reference books. I don't recall the exact name. They had to do with thermal insulation. Basically, that was it. There may have been one or two books in the NAVSEC library on thermal insulation. I just went -- used them as the occasions arose, more as an encyclopedia than anything else, as a reference book. I didn't actually read the whole thing.

Q Did these references have anything to do with the health hazard of asbestos exposure in them, or were they purely military-type specifications of temperature control?

A No, the ones I was -- that I referred to had to do with thermal insulation properties, not with health properties, or with military specs, per se, just more along the lines of an academic physics book.

Q Other than pipe insulation, was there any other area of asbestos reduction that you were involved in?

A Well, all high-temperature insulation, not just on pipes; on the entire propulsion system. For example, the boiler required asbestos insulation.

Q That was an asbestos --

A All parts of the boiler. Of course, there's a series of pipes in the boiler, but -- as part of the boiler -- but there are other parts of the boiler -- the drum and so on -- that are also very hot.

Q Did the foam rubber insulation on the hulls of the submarine contain any asbestos?

A No.

Q Was the glass insulation used within the hull mixed with any asbestos?

A No.

Q I think the question may have been asked, and please indulge me: Where is Mr. Cherobrier today?

A I don't know. The question was asked, but I don't know where he lives.

Q Do you know where he was last associated with the Naval Ships in Philadelphia, or was he last some other place?

A No, he was -- to my knowledge, he never worked at Philadelphia. He worked at the Naval Ship Engineering Center in the Washington area, and when he retired he was still working there, you know. That's where he retired from.

Q Prior to issuing the NAVCHIPS instruction 5100.26, had you visited any shipyards?

A Yes, I had visited shipyards prior to that.

Q Prior to the issuance of that instruction, had you visited any shipyards with regard to viewing problems with asbestos?

A I don't believe so. I don't think so.

Q If you had, would there be a log or notes in the department to confirm or disaffirm whether your activity in this project --

A We oftentimes wrote trip reports. Whether they are still available I don't know.

Q Would you have kept copies of trip reports?

A I, personally, didn't, no, not since I've left there, you know. I mean -- all my files were left there.

Q Did you maintain for your own interest, convenience and education a personal file at home concerning any of the work that you did while in the coatings department?

A No.

Q Did you at any time maintain a private file at home?

A No.

Q Other than the ASTM, are you a member of any other association as an individual -- professional association?

A Well, first of all, I'm not a member of ASTM any longer. No, I'm not a member of any organization now.

Q In the past, have you been a member of any professional organizations?

A Yes. I was a member of the American Chemical Society for a few years. I may have joined the Society of Chemical Engineers one year. I'm not sure if I even joined that.

That's about the extent of it.

Q Do you recall the approximate years that you might have been a member of the American Chemical Society?

A Oh, in the '60's, '63 to maybe '65 or so.

Q And the Society of Chemical Engineers?

A Well, if I were a member there, it probably was when I was at NAVSEC. I don't remember. I really don't.

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Q Is there such a thing as a deficiency report concerning asbestos control in shipbuilding, to your knowledge?

MR. NOWINSKI: Wait a minute. Would you read back the question.

(The pending question was read.)

MR. NOWINSKI: Excuse me a minute.

(Discussion off the record)

MR. NOWINSKI: You can answer.

A No. To my knowledge, I didn't know of any.

Q Is there another name for something that might be so considered?

A Not to my knowledge.

MR. MONTSTREAM: I have nothing further.
Thank you.

MR. MOHER: Peter, may I assume that I am going to be under the same restrictions as Mr. Kenny from UNARCO, with respect to inquiries along those lines, that you instructed the witness not --

MR. NOWINSKI: My problem with those inquiries is not limited to any one individual,

but, rather, to the subject matter.

MR. ELLIS: If you would answer them for anybody, you would answer them for Joe.

MR. MOHER: May I assume from your comments that I will be restricted in asking similar questions?

MR. NOWINSKI: I won't allow the witness to answer questions along the same areas that Mr. Kenny tried to inquire into.

MR. MOHER: Peter, I will be very happy to go through the same line of questioning. All I want to do is preserve my right to go to the Judge and get an order to have those same questions on behalf of the H. K. Porter and The Southern Asbestos Company. That is the only concern of my inquiry, to save time.

MR. NOWINSKI: Fair enough.

MR. MOHER: Mr. Nowinski, did you bring any documents with you along the lines that we asked for in the notice to take deposition?

I realize the notice specifically refers to those in the custody of Mr. Marra; but did you

bring any documents?

MR. NOWINSKI: No. I am not aware of the existence of any documents that fit the description in your notice of deposition.

BY MR. MOHR:

Q Mr. Murad, I am going to hand you three documents and ask you if you would review them and tell me if you can identify those documents.

MR. MOHR: While Mr. Murad is reviewing those documents, maybe I can explore with you, Peter, if your answer would be different except for the qualification of those documents being in the possession and control of Mr. Murad.

You indicated that you did not know of the existence of any of those documents that were specifically requested. As I remember the request, it asked for documents that would be in the care, custody and control of Mr. Murad, and we are all aware of the fact that he has changed his job from the United States Navy to the Air Force.

What I am asking you is do you have

knowledge of those documents, other than the restriction that they be in his possession, or will you --

MR. NOWINSKI: I am not sure I understand your question, because Mr. Murad has changed jobs and now works for the Air Force. He has neither the custody, care, possession nor control of any documents that would come within the descriptions 1 through 6 in your notice. And each of those specific descriptions refers to documents in his custody.

MR. MOHRER: Excluding that fact, that they are no longer in his custody, do you have those documents?

MR. NOWINSKI: Do you mean does the Government have documents arising from and/or related to health risks allegedly arising from exposure to asbestos?

MR. MOHRER: Yes, sir.

MR. NOWINSKI: I would suspect the document has some such documents.

MR. MOHRER: Would you be kind enough to

bring those with you tomorrow?

MR. NOWINSKI: No, I am afraid I cannot do that, Jim. You are talking about voluminous documents.

You have noticed the depositions of several government witnesses, with similar requests for documents, and we will respond to those as best we are able.

MR. MOHRER: That was the purpose. I do not know if we are playing games. I was asking for the documents that he would have had in his possession while he was engaged with the United States Navy. You are telling us that you have no knowledge of the existence of those documents that he had while he was in the United States Navy, while he was a member of this coating section.

MR. NOWINSKI: I have made no search to attempt to identify documents that he might have had in his custody when he worked for the Naval Sea Engineering Center, and I don't know how I would undertake to go about that.

MR. MOHER: Off the record.

(Discussion off the record)

A Okay.

Q In response to questioning from Mr. Jelley, you indicated that you did a revision of some military specifications. Is that correct?

A Well, it was the job to try to keep -- try to maintain them, keep them up-to-date, with what was available from industry.

Q You indicated that there were two types of specifications. One was a performance specification. What did you mean by "a performance specification"?

A Well, performance specification primarily addresses the requirements that should be met by the material being described in the spec.

Q Were there some military specifications that would have called for one or more product that could have met that specification with respect to performance?

A Sometimes they did; sometimes they didn't. I didn't describe what a -- what the other type of -- besides a performance spec, you could have a specification that was -- that dealt primarily with the characteristics of the

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material, the exact composition of the material. Now, oftentimes you would have a cross between the two, so that you'd have a specification that dealt with the performance of the material and also addressed a part of the composition.

Q With respect to those specifications that called for the characteristic of the material, there was no substitution with respect to those military specifications of product; was there?

A Not as far as -- the spec would describe what was wanted, right.

Q These three documents that you had a chance to look at -- could you identify those for the record, please.

A Well, this first one is MIL spec -- MIL I-150910. It is entitled "Insulation Felt, Thermal, Asbestos Fiber."

Q That is a military specification of a characteristic kind, is that correct, as you have described it?

A Well, it is -- this, I'd say, is a cross between the performance and exact composition, because it does point out two things: It gives some indication of what the composition is and it also gives a list of properties that this material should perform.

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Q With respect to that particular military specification, could there have been a substitution of any other material, other than asbestos?

A This one, the scope says the specification covers asbestos fiber felt for thermal insulation.

Q Therefore, there would be no substitution of any other compound that would have met that specification; is that correct, sir?

A Well, it has to meet the spec, yes.

Q Therefore, it would have to be asbestos?

A It would have to be any one of whatever types. There's a plain and a water-repellant in here, yes. That's right.

Q It would have to be asbestos?

A You'd have to have asbestos in it, right.

Q There is a second document. Can you describe that for us?

MR. LEVY: Are you going to mark that?

MR. MOHRER: Off the record.

(Discussion off the record)

MR. MOHRER: Mark that.

(Copy of MIL I-150910, headed "Insulation

Felt, Thermal, Asbestos Fiber," dated July 3, 1962, consisting of sixteen pages, was marked Defendants' (Murad) Exhibit 2 for identification, as of this date.)

MR. MOHER: It is marked Defendants' (Murad) Exhibit 2 for identification.

MR. LEVY: The date is 3 July 1962.

BY MR. MOHER:

Q Could you identify the second document, please.

A The second one is "Cloth, Thread & Tape - Asbestos," and the number is SS-C-00466D (Navy Ships). The date is 19 June 1962.

Q Could you identify the third document there?

A The third one is the -- it is the same -- it is a follow-on of that second one, and it is identified as SS-C-466E, "Interim Amendment - 1 (Navy Ships)."

Q Mr. --

A And that's 17 June '65.

Q These fall under government or military specifications?

A Either military or federal specs, depending on the one you are --

Q Again, what category do these two specifications fall under? Are they performance specifications or are they compound specifications?

A I'd say compound, the way you're using the term "compound," a mixture of the characteristic and the performance spec.

MR. MOHER: Why don't you mark these.

The first one will be 3 and the next one will be 4.

(Copy of SS-C-00466D, headed "Cloth, Thread & Tape - Asbestos (Navy Ships)," dated June 19, 1962, consisting of eleven pages, was marked Defendants' (Murad) Exhibit 3 for identification, as of this date.)

(Copy of SS-C-466E, headed "Interim Amendment - 1 (Navy Ships)," dated June 17, 1965, consisting of ten pages, was marked Defendants' (Murad) Exhibit 4 for identification, as of this date.)

BY MR. MOHER:

Q With respect to Defendants' Exhibits 3 and 4 for identification, in complying with these specifications, could

a manufacturer or a supplier have substituted some other type of cloth, thread or tape, other than cloth, thread or tape containing asbestos?

A No. There was asbestos in all these; different amounts, different percentages of asbestos, depending on the type.

Q But the cloth, the tape and the thread -- it was mandated that it contain asbestos?

MR. NOWINSKI: Wait a minute, Jim. He has testified that these specifications describe asbestos-bearing products. There is no mandate that any manufacturer comply with them.

Q My question is, if a supplier were complying with those specifications, did they have to --

A They'd have to meet the specification, of course.

Q And the specification calls for some product containing asbestos?

A That's what it describes, right.

Q Mr. Murad, you indicated before that you drafted some procedures dealing with the installation of insulation materials aboard ships. Is that correct?

A Well, I was involved in it. I didn't actually

draft them. I reviewed MIL standards 769, I believe it was, which describe procedures of how insulation products were to be used, what choice of specifications were allowed, and where --

Q These --

A -- and I would review it. I didn't draft the whole thing, but --

Q Would these specifications direct a shipyard to apply insulation in a certain manner?

MR. NOWINSKI: Excuse me, Jim. Are you referring to MIL standard 769?

MR. MOHER: Do you have it there?

MR. NOWINSKI: No, but you said the specification.

BY MR. MOHER:

Q I meant the specification you referred to.

A The standard. The standard would have to be invoked by the ship spec, if that's what you're getting at. I'm reading into what you're getting at. Maybe I shouldn't be.

Q The standard 769 would tell the shipyard how to apply the insulation aboard the submarine; is that correct?

A It would tell the reader, depending on whoever that reader was, what set of specifications could be used for specific purposes.

Q Just so I understand it correctly, that would tell the person how to apply the insulation to a certain unit aboard a submarine --

A Yes. Well --

Q -- or ship?

A Yes. It would give instructions to that effect, yes.

Q Did standard 769 also instruct the shipyard insulator or worker on how to remove asbestos insulation aboard ship?

A I'd have to see it again to refresh my memory. I think it did, but there were also other -- that was not the sole source of instructions. There were other instructions, too; for example, that instruction that was the center of controversy a little while ago.

Q That was marked for identification?

A 51 point -- 5100 point two --

MR. LEVY: -- six.

Q This is dated February 9, 1971. Do you know if

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it had a predecessor?

A No, I don't.

Q Is this the document that you were involved in preparing?

A I reviewed that one, right.

Q Was this a document that you reviewed in the preparation for the standards that you were involved in, or is this the standard that you prepared?

A Wait a minute. It is not -- that's not a standard. That's an instruction.

Q I'm sorry.

A Okay?

Q Is this an instruction that you prepared, or is this an instruction that you reviewed when you prepared some other ones?

A No, I reviewed this in the process of its preparation. I was one of several reviewers, in the same way that I was one of several reviewers of 769, MIL standard 769 and a number of other directives.

Q Can you tell me what other documents you reviewed, besides that document, if you can recall?

A Well, I can't tell you specifically unless I see

them. The numbers I've forgotten, but they centered around specifications, at least one standard, this instruction, the Naval Ships Technical Manual. We may have had some -- I don't think we had any training booklets out on insulation. We did in water treatment. But they centered around the kind of material to use and how to use it.

Q Can you remember the names of any of the individuals who shared the position of reviewing these --

A The other people that were involved in this?

Q Yes, sir.

A Al Munkrees --

Q Will you spell this, please.

A His last name was M-u-n-k-r-e-e-s.

(Continuing) -- Joseph Amore, A-m-o-r-e. I'm trying to think who else was involved. Our bosses; my immediate bosses would sometimes look at them.

Q That was Morganstearn and Lovell?

A Well, Lovell was when I was in water treatment. Birnbaum was Morganstearn's boss. They might look at them from time to time.

Q When was it --

A Sherocrier would look at them --

Q When was it --

A -- from time to time.

Q -- that you made this review? Can you tell me that?

MR. COYNE: Are you talking about the review of the MIL standard, 769?

MR. MOHER: We are talking about the review of standard 769 and also the instructions.

A Well, when there is something significant to change. When there was something significant to change, we'd review them at that time.

Q What position did Mr. Munkrees hold?

A He was in the piping section and was concerned about piping on board ship; and, of course, many of the pipes -- almost all the pipes had to be insulated in one way or another.

Q Did this piping section have a department number?

A Yes, it was code 6153, and I've forgotten the alpha character that -- I think it was F.

Q Just generally, could you tell me what their function was, their purpose?

A Sure, so -- as the name implies, they were in.

charge of the piping problems on board a ship.

Q Do you know how long that department has been in existence?

A No.

Q Was it there when you were in the coating unit?

A Yes.

Q Was it there prior to that time?

A To my knowledge, it was. I don't know when they started up. I imagine quite a -- I really don't know when it started.

Q Do you know if they did any tests on insulation products for pipes on board ships?

A No, I don't know if they did.

Q Do you know if they participated in any studies at all?

A No.

Q Mr. Munkrees -- is he still in the United States Navy?

A No, he's not.

Q Is he retired?

A I believe he did.

Q Do you know where he is located today?

A No, I don't.

Q Mr. Joseph Amore -- do you know where he is today?

A The last -- today, no.

Q Well --

A The last I know of, he was still with the Navy, several months ago.

Q Do you know what position he held several months ago?

A I think he was still in the same area, in code 6153 -- I've forgotten his -- C I think it is, 51 -- 6153 C, I believe.

Q What was that department?

A That was refrigeration and -- refrigeration.

Q Do you know what specific position he held in that position?

A He was the -- it was either a section or unit, and he was the chief of it.

Q Do you know what kind of a background he had? Did he have a chemical background or chemistry background?

A No, I don't know.

Q Do you know how that group was formed to review the instructions?

A Generally, anyone who had any kind of involvement in the instruction, in the use of that instruction, would see it.

Q Did anyone from EUMED have any input in those standards or instructions?

A The standards or instructions -- in the instruction?

Q The instructions.

A In the instruction, I believe they did.

Q Do you know who it would have been from EUMED?

A We worked with Commander Sam Barboo.

Q Could you pronounce that name again for me, please? Barboo?

A Barboo, B-a-r-b-o-o.

Q What is Mr. Barboo's background, educational background?

A I don't know.

Q Is he a doctor?

A I don't know.

Q Of medicine, I mean.

A I really don't know.

Q Do you know what position he held with EUMED?

A Well, he was, as I say, a commander there. He was in the -- what was the name of that section? We dealt with them on -- I can't remember the exact -- the name of his section.

Q Did you ever discuss with Mr. Barboo asbestos and any alleged health hazards relating to asbestos?

A Well, we talked to him about the asbestos situation.

Q When did you speak to Mr. Barboo?

A Over a period of time. I'm not sure when we -- when I first spoke to him was probably in late '69 or early '70.

Q Did these conversations relate to the health aspects of installing or removing asbestos insulation aboard ships?

A Well, they related to the use of asbestos on board ship.

Q Did you have formal meetings with Mr. Barboo?

A Yes.

Q Were they on a regular basis?

A No, as the --

Q Were any minutes or notes kept of the meetings?

A I didn't keep any notes, no.

Q Did anyone else from BUMED get involved in the review of these standards?

A Yes, Commander Barboo's boss. I can't remember his name.

Q Do you know what his title was?

A No. I know he was a captain. I don't remember what the exact title of his job was.

MR. NOWINSKI: Jim, do you have a lot more questions? I would like to take a break --

MR. MOHER: Okay.

MR. NOWINSKI: -- if this is a convenient time.

(A recess was taken from 2:32 p.m. until 2:45 p.m.)

BY MR. MOHER:

Q Mr. Murad, you indicated that a group would get together whenever there were any significant changes in the military specifications--and I am specifically dealing here with the military specifications dealing with asbestos insulation materials. Can you tell me what departments would get together?

A Well, it wasn't a matter of getting together to work on them. What would happen is a change would be initiated by one person who was interested, and before the change could in fact be issued it would have to be reviewed and coordinated on by people in other areas, and the piece of paper would simply flow from one desk to another. Perhaps two or more would get together and talk about it; nothing to prevent it. But it wasn't a matter of getting four or five people together in one room, sitting down and working on the piece of paper.

Q One individual in one of the departments would determine that a change was necessary, and he would prepare a draft change in the specification?

A That's normally the way it worked, right.

Q That draft change would then be submitted to other departments that were in some way related to or would be affected by the change?

A Right.

Q With respect to asbestos insulation materials that were going on board Navy ships, what departments would be involved?

A Well, ours was 61010. 6105 is the safety office.

6147 was the boiler people, 6153 the piping people.

Q If the people from these four departments agreed that a change should be made, to whom did they go for approval for this change?

A They'd have to send it through 6120, specifications.

Q Do you know what procedure would be followed in 6120 with respect to approving or disapproving any such change?

A They'd have to send it out to whomever else was involved in the government, and, depending on the kind of document, particularly -- this was almost always true for specification -- they'd send it out to industry, have the specification reviewed by industry to make sure that industry could, in fact, supply the kind of material that was described in the spec.

To go one step further, the industry people would pretty much -- oftentimes would initiate -- in a sense would initiate a change, in that they would suggest changes; and, of course, these suggestions were considered.

Q You indicated that after the review by 6120 someone else in the government would be contacted. Who is

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that individual or department?

A It depends on the nature of the document. If that specification -- for example, one of the ones you showed me here is a federal spec; it is not a military spec. Other people in the government would -- who are interested in building -- they might use that specification not for shipbuilding but for land construction purposes.

Q Do you know what department in the government --

A We worked with GSA.

Q Other than GSA --

A Sometimes we'd work with the Army or the Air Force or another department of the Navy, like Navy Facilities Engineering Command.

Q With respect to the specifications dealing with asbestos insulation aboard Naval ships, would any other governmental department be involved, other than the ones you have already enumerated?

A Not for writing specifications, that I can recall.

Q Who would have the ultimate approval for the adoption of a change in military specifications?

A The Specification Review Board.

Q Where is the Specification Review Board located?

A Well, it is --

Q There's no office, per se. It is made up of people from Naval Ship Engineering Center. Now it is called Naval Sea Systems Command. At that time it was Naval Ship Systems Command.

Q Where, geographically, are they located, in Washington, D. C., or are they --

A Now they are both in Arlington, Crystal City, Arlington. At one time Naval Ship Engineering Center was at Hyattsville.

Q How many members are there on this board of review?

A Well, there's -- each of the major directorates in Naval Sea Systems Command, as it is called now, has a representative. You'd have 04, 06; 07 I believe would be represented; have about four or five people from NAVSEA and you'd have two or three people from NAVSEC.

Q Have you, yourself, ever made a presentation to this review board in the hopes of getting a specification change adopted?

A Yes.

Q Could you tell me what specifications you have

given presentations on?

A No, I don't remember.

Q Did they have to do with asbestos insulation products?

A I don't know. They may have. I don't know.

Q Could you tell me, in the normal presentation, whether that would be an oral presentation, or would that be a written presentation or a combination of both?

A A combination of both.

Q With respect to these written presentations, do you know if copies of your presentations are kept and maintained?

A No, I don't know if they are kept and maintained. Well, copies are made. I don't know if they are kept and maintained. You know, I would presume so, but I never worked in that -- in 6120. I presume they do. I know they keep pretty good records, in general, but whether they kept and maintained those I don't know.

Q While you were employed by the United States Navy and when you did make these presentations, did you maintain or did your department maintain a copy of the written presentation that you made or presentations that you

made?

A Yes. The written presentation consisted of the change that I wanted made and any comments that were made by people on -- who reviewed it.

Q When you went into this board of review, was this a formal proceeding?

A Yes.

Q Was testimony taken or recorded?

A There was a secretary. She took notes.

Q Were those notes ever put in any final form?

A We received a copy of the minutes to that meeting, which considered several different -- normally considered several different specifications, of which I may have had one out of six or seven.

Q Do you know if there is a location or place where these minutes are now kept --

A No.

Q -- as a depository, or depository of these documents?

A I don't know that as a fact.

Q Was there any appeal from this review board?

A Can you restate that question?

Q All right.

If you had a change that you were interested in seeing accepted and if the review board rejected it, was there any other department or individual or group of individuals that could review the decision made by the review board?

A No.

Q Was that the last --

A That's it. ;

Q Do you know of any other documents, other than the military specification or the federal specifications, that deal with asbestos insulation materials?

A Could you repeat that again, please?

Q All right.

We know that there are military specifications that deal with asbestos insulation materials, and we know that there are some government specifications dealing with asbestos insulation materials. Are there any other specifications, standards or documents that would relate to asbestos insulation materials, other than those two types, that would determine the type of product, whether it be including performance standards or not?

A No, I don't know of any others, besides military or federal specs.

Mr. MOHR: Thank you very much, sir. I have no further questions.

BY MS. COLLINS:

Q Mr. Murad, in the course of your testimony concerning your time at the Marine Engineering Lab in Annapolis, you told us a little bit about submarine atmosphere work. My recollection is that you testified you were not concerned with asbestos or dust in the atmosphere; is that correct?

A Yes, that's correct.

Q Was there some other department or individual that did have such a concern; that is, with the dust or the asbestos in the atmosphere?

A I don't know.

Q Mr. Jelley asked you about the manner in which you learned about insulation when you joined the coatings division. You made reference to the fact that you talked to people both in and out of the Navy, and I believe you listed the people or the sections in the Navy that you spoke with.

What people outside of the Navy did you speak

with to find out about insulation?

A A number of manufacturers and/or suppliers.

Q Any other department of the government?

A Occasionally spoke with people at SSA.

Q At that time, when you joined coating, the coating division, did you speak with individuals at shipyards concerning insulation?

A Yes.

Q Could you tell us the shipyards where these people were located that you spoke with concerning insulation?

A Well, most of the Naval shipyards, probably all of them over the period of time that I was in -- all the Naval shipyards, which are at that time Boston, Portsmouth, Philadelphia, Norfolk, Charleston, Long Beach, Hunters Point, Maryland, Puget Sound and Pearl Harbor.

Q Was there any particular individual -- and I am referring to that individual's capacity -- at the shipyards, that you would speak with to find out about insulation?

A Well, we always spoke, almost always, with people in shop 56, which was the insulation department.

Q Did you have occasion to speak with people in the insulation departments at private shipyards?

A Occasionally. Not often, but occasionally.

Q Do you recall the names of any of those private shipyards?

A Spoke with Newport News. I'm trying to think of any of the others. That's the only one I can think of offhand.

Q Did you ever speak with anyone at the Electric Boat facility in Groton?

A Not that I recall.

Q Mr. Murad, you have testified or made reference to an asbestos elimination program. Is there any written document that outlines this program?

A Not that I know of.

Q That would include any memoranda that might outline the program. You do not know of any such memoranda?

A There wasn't any formal program written down when I was involved.

Q Do you know if each Naval shipyard was responsible for carrying out an asbestos elimination program?

A Would you repeat that question again, please?

Q Sure.

I am wondering if, as opposed to the general unit,

your unit working on an asbestos elimination program -- did the individual yards have their own asbestos elimination programs?

A I don't know.

Q When you were questioned concerning priorities during your time with the coating division, you indicated that the priorities would change as you would have pressure from different higher-ups. Was there a particular higher-up, to use your phrase, which would exert pressure to move along on the asbestos elimination program?

A Well, of course, my immediate boss, then his immediate boss and his immediate boss, were the three that came in contact with most often.

Q So that would be Mr. Birnbaum, Mr. Morganstearn --

A Right, and Morganstearn's -- or, rather, Birnbaum's boss was John Alfors. Of course, the military head was -- first was Captain Ryan and then Commander Smoot.

Q Would this pressure be applied in the form of a written memorandum?

A No, everything was oral.

Q This would include any pressure from Commander Smoot or Ryan?

A Yes.

Q It would all be oral?

A You're right, it would all be oral.

Q In the course of your testimony concerning this program, the asbestos elimination program, I believe you stated that you were told allegations had been made that there was a hazard associated with asbestos?

A Yes.

Q Who relayed those allegations to you, or who relayed that to you?

A Ed Cherobrier.

Q In the course of your testimony, you also made reference to what I think you called a task in California, to determine if nonasbestos products could do the job of asbestos-containing products?

A Yes.

Q Was this task, as you called it, carried out in a shipyard in California?

A I'm trying to think who did that. I believe it was carried out by -- was it Hunters Point?

Q Do you recall the --

A That's the best of my recollection.

Q Do you recall the names of any individuals who were involved in carrying that out?

A No, I don't. I'm trying to -- I was trying to remember that while we were talking, but I can't remember.

Q Do you recall if there were particular asbestos products that were involved in the task?

A Well, we were using a material that contained no asbestos, to determine whether or not it could do the job of asbestos-containing insulation in high-temperature -- for high-temperature insulation purposes. It was used on piping and on the propulsion plant.

Q So this is pipe insulation, molded pipe insulation?

A Molded pipe insulation, and it was mainly -- mainly for pipes.

Q You testified concerning a Jerry Crawford from NAVSHIPS. Was Mr. Crawford located in Washington?

A Yes.

Q Is he still located in Washington?

A Not that I know of.

Q Do you know if he is still with the Navy?

A He's not with NAVSHIPS.

Q Do you know --

A I don't know where he's working.

Q How about Mr. Farina? Was he located in Washington?

A He was with NAVSEC, in the Washington area, yes.

Q Is he still with --

A Yes, I believe he's still at 6105, NAVSEC.

Q Do you know what his title is, his present title?

A No, I don't.

Q Mr. Murad, you told us about a few shipyards that you visited subsequent to the issuance of the NAVSHIPS instruction concerning use of asbestos. Do you know if anyone other than yourself involved in the preparation of that instruction visited the Electric Boat facility in Groton?

A I don't know of anyone, no.

Q Mr. Murad, have you ever been present during a ripout?

A I observed one, I believe, for a short time.

Q Where was that?

A I'm not sure which shipyard it was now, but I believe I did see one. I don't remember which yard.

Q Do you recall what year that was?

A It was probably in '70 or '71.

Q It was while you were --

A I'm not sure exactly.

Q It was while you were with the coating division?

A Yes.

Q Have you met with anyone other than government attorneys in connection with preparation for this deposition?

A No.

Q Have you heard of the Shipbuilders Council of America?

A No.

MS. COLLINS: I have no further questions.

Thank you.

MR. STANGER: No questions.

MR. COONEY: No questions.

BY MR. COYNE:

Q Good afternoon, Mr. Murad. My name is James Coyne, and I represent Raybestos-Manhattan.

Can you tell me when the chemistry and toxicology unit of the Naval Ship Engineering Center was first set up?

A No, I can't.

Q Do you know when it first started dealing with

asbestos in any fashion?

A I can't give you -- I can't say exactly with certainty. I can only tell you when I first became aware of it --

Q When was that?

A -- which is what I said before.

In the fall of '68.

Q I believe you said that after you started working in the coatings unit one of your first meetings dealt with asbestos?

A Yes.

Q Who was that meeting with?

A Let me think if I can remember. I believe, if -- this is my recollection, the best I can give you -- I believe there were people from Johns-Manville and from H. K. Porter, and, of course, there was Ed Cherobrier I believe was there; Leon Birnbaum was there.

I think that was it.

Q What was the purpose of that meeting?

A As I recall, it had to do with determining the -- I think it had two purposes: one, to talk about the procedures to be used when ripping out asbestos; and, two, to

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talk about trying to reduce the asbestos content in high-temperature insulation materials.

Q Between 1969 and '72, when you were with the coatings unit, and to the extent that you dealt with asbestos insulation products, did you say that you only worked with performance specifications?

A I said most of the specifications we dealt with were performance type, or, as I got thinking about it later, we did have some that were a mixture of performance and characteristic type.

Q Like SS-C-466?

A Right.

Q During that period of time, did you ever specifically deal with SS-C-466?

A Yes.

Q What was your involvement?

A Well, we reviewed it, trying to look for ways of coming up with going from the high percent of asbestos to -- that insulation that had a high percent of asbestos -- to insulation that had a lower percentage of insulation -- of asbestos.

Q You never considered eliminating asbestos from it

at all?

A Oh, yes, we considered it, sure, but at the time we didn't know of any material that would do a satisfactory job.

Q Do you happen to know what the title, assuming there is a title, of the survey or study that was done in Philadelphia was?

A There may have been a title. I don't know what it was.

Q Do you know the author of that survey or study?

A Well, this fellow that I mentioned, Morty, was heavily involved. I can't think of his last name. Of course, Ed Cherobrier was heavily involved.

Q What division or department or section of the Navy, or who did the study or survey?

A It was Naval Ship Engineering Center, Philadelphia division. It was -- I believe it was under Sam Greenberg's area. He, himself, wasn't directly involved, but a couple of his people were.

Q Was there an actual report, to your knowledge?

A I don't know. You know, I could presume, and so on, but I learned of through Ed Cherobrier.

Q The existence of the survey or study?

A Yes. I knew that the study was going on, the survey, whatever you want to call that effort, was going on, and I had some idea of what the results were.

Q Earlier you referred to a ship spec. What is that?

A That's the -- the ship spec is description of the characteristics of a specific ship that's being acquired by the Navy.

MR. COYNE: I have no further questions.

Thank you.

BY MR. HOWD:

Q Mr. Murad, my name is Hadleigh Howd. I am one of the attorneys representing the Electric Boat division of General Dynamics.

You indicated to Mr. Coyne -- he is the gentleman with whom you just spoke -- that at a time you worked with the federal specification SS-C-466, and I understand you attempted to find a substitute product with a lower asbestos content?

A Well, yes, that was one of the goals. We also wanted to make use of the lower -- I believe there's two

types of asbestos in that -- described in that spec. One is a high, one is a low, asbestos content material.

Q The high is the triple A?

A Something like that. I have to look at it again. One is around 80, 90 percent; the other is around 10, 15 percent. The grade UG is 80 percent asbestos. Grade double A is 90 percent asbestos. Grade triple A is 10 percent asbestos. Grade triple A-M is 95 percent asbestos. And we were seeking to use the lowest percent asbestos material wherever possible.

That was one approach. That was the first approach.

Q When did you begin work on this specification in regard to the substitution of a lower asbestos-containing product? When did you first become involved in that task?

A Well, early in my tenure, so I'd say in the fall of '69.

Q Did you work with anyone else in your office --

A Yes.

Q -- in that endeavor?

A Ed Cherobrier.

Q Anyone besides you and Mr. Cherobrier?

A Well, of course, our bosses.

Q Who would that be, sir?

A That's Ed Morganstearn and Leon Birnbaum; and, of course, John Alferts was his boss.

Q You have explained that you were trying to find a substitute product. Just how did you go about doing this?

A We relied to a large extent on industry. People, representatives -- manufacturers' and suppliers' representatives would visit our office from time to time and would keep us apprised of the latest materials that were available, giving us the pros and cons. We would get some information from ASTM and from NIMA.

Q What is NIMA?

A NIMA is National Insulation Manufacturers Association.

Q What is that?

A That's a group of manufacturers who -- of insulation -- that band together to provide products for the common good.

Q Of whom?

A Of the industry.

Q By "industry" --

A Of the insulation industry.

Q By that term, do you mean the manufacturers of asbestos-containing insulation products?

A Yes, but it wasn't limited to manufacturers of asbestos-containing materials. Any kind of insulation. Could be fiberglass; could be one of the organic materials.

Q Did you, yourself, ever attend any NIMA meetings or conferences?

A No, not that I recall.

Q Did you ever receive any literature, publications, from NIMA?

A Received some letters from time to time, advising us as what NIMA's position was on certain specifications that were sent to them for review.

Q Did you receive any NIMA communications such as you have described in regard to your task concerning the substitution and SS-C-466?

A I don't know. I'd have to -- I don't remember.

Q Apart from relying on the manufacturers and NIMA and the -- did you say ASTM? -- can you think of anyone else or any other organization upon whom you relied or from whom you received input in your attempts to find a lower asbestos

containing product for SS-C-466?

A I can't think of any.

Q Did you do any in-house testing?

That term, "in-house" -- does that give you a problem?

A No, I think I know what you mean by "in-house."

Q Did you do any in-house testing? This is in connection with the substitution task you have described in connection with 466.

A Well, we had some -- in a sense, yes, we had used glass cloth as a substitution for asbestos cloth in some limited use for certain projects, one in particular that I recall.

Q Which one is that, sir?

A That was one in which we needed to have a -- remove what we call antisweat insulation, which is essentially a neoprene rubber, foam rubber, from cold water lines. We had to remove that insulation for testing the thickness and integrity of the pipes and then replace it, and we needed to do it in a hurry, so we devised a technique of building a sleeve for the specific portion of the piping system that was tested from time to time, and in conjunction with it we

covered the neoprene rubber insulation with glass cloth, as opposed to asbestos cloth, which had previously been used. This was no -- not only to get the job done but to tie in the use of glass cloth as a substitute for asbestos cloth.

Q Was this on a cold water pipe?

A It was on cold water pipe, right.

Q What was the result of this test, or your understanding of the result of this test?

A It worked, to my knowledge. It was towards the end of my tenure. We started it in the -- about May or so of '72, and work was done to determine what the specific problem was, to identify the problem first, and, secondly, to come up with a substitute -- with a plausible solution; third, to actually implement this solution, and then --

Q Do you -- excuse me.

A -- and then to actually put it into practice.

When I left, it seemed to be working well.

Q This was in connection with the cold water pipe, though?

A It was in connection with the cold water pipe, but we used asbestos cloth not so much as an insulation material, per se, but, in a way, yes, and in a way -- it was

mainly as a fire retardant.

Q Are you aware of any tests of a low asbestos containing cloth or nonasbestos containing cloth on a hot water pipe or high-temperature application? This is in connection with the 466 program.

A Well, not that I recall. We used it in that instance, but, if we could use it there, the -- a natural follow-on would be to use it in any pipe -- on any piping system as the cloth -- as a covering cloth for the insulation.

Q I think you testified, Mr. Murad, that one of the reasons you did not substitute cloth under the 466 specification was because you could not find a material that would do the job. Did you --

A That's right.

Q -- testify as to that?

A Yes, sir.

Q What did you mean, wouldn't do the job? What was the problem?

A Well, wouldn't hold up to the requirements. We wanted something that would, of course, be a good insulating system, and we wanted something that would hold up to the stress of any kind of abrasion on board ship.

When we first started out, we were told that the -- only asbestos could withstand the kind of wrapping and treatment -- and, rather, stresses, on board a ship.

Q When you say you were told, by whom were you told? Who told you this?

A The manufacturers, various manufacturers and suppliers of insulation materials.

Q Apart from the test on the cold water pipe, as I understand it, you or the government or your department performed no other tests?

A We were initiating some tests when I --

Q When you left?

A Toward the end of my tenure, about the summer of '72.

Q But between 1969 and '72 you, your department or the government performed no tests of an asbestos-free or a low-asbestos insulation cloth?

A That's right. We relied on industry.

Q Did they provide you with any engineering reports or test reports?

A As I recall, the reports that we got were mainly oral. There may have been some very snappy written

paragraphs, but nothing that I would consider a report, per se, no.

Q When you say the reports you got mainly were oral --

A Oral, right.

Q -- do you recall from whom you received any of these oral reports?

A Oh, again, various manufacturers' and suppliers' representatives.

Q Can you think of any particular manufacturer or supplier?

A Well, H. K. Porter was one that comes to mind.

Q Do you recall the name of the gentleman with whom you spoke?

A Oh, yes. Yes. It was on the tip of my tongue a few minutes ago. I can't think of his name at the moment. I can envision him.

Q Can you tell us the substance of the oral report or communication you received from the H. K. Porter gentleman?

A Basically, that the only way to go was -- well, I shouldn't say the only way to go, but --

Q Was that your understanding of what he was saying?

A What he was saying --

MR. MOHER: I will object to the form of the question.

A (Continuing) What he was saying was, essentially, that we needed to continue to have a certain amount of asbestos in order to provide the kind of material that would withstand the rigors of shipboard use.

Q Did he and you at any time have any conversations regarding asbestos and health?

A I don't remember that.

Q Do you recall conversations with a representative of any other manufacturer or distributor of asbestos-containing insulation products? This is in connection --

A Yes.

Q -- with the 466 project.

A 466. I guess it included 466 as well as other asbestos-containing materials.

We talked with people from Pittsburgh-Corning.

Q Do you recall the names of any of the people from Pittsburgh-Corning?

A This guy -- no, I don't remember his name. There were two, really. One was a local representative who

has since -- I know he's passed away. But the other man was from Pittsburgh, from the home office, and he was running some -- he said he was -- that Pittsburgh-Corning was sponsoring tests at the University of California to determine the health hazards or the alleged health hazards of asbestos.

Q Did you ever learn of the results of those tests?

A I was told that they basically, more or less, coincided with Selikoff's work.

Q When you say a representative of Pittsburgh-Corning was local, what do you mean by that?

A Well, he was -- his office was in Baltimore, or in the Baltimore area, and he would visit our office approximately once every couple of months, stop in, say hello, ask how things were going, and talk over whatever problems may have surfaced.

Q What kind of problems would you discuss with him?

A Anything that had to do with supply, distribution, anything that dealt with the specifications.

Q Would this be the supply, distribution and specifications of asbestos-containing insulation products?

A Well, any of their products, including asbestos-containing products.

Q By "any of their products," it would be products of Pittsburgh-Corning?

A Right. Right.

Q Did you ever have any discussions with him as to health and asbestos?

A I don't recall any specific ones.

Q Did you indicate that this gentleman is now deceased?

A Yes. ;

Q Was this Mr. Sinclair?

A I think that was his name.

Q Do you know if he had been in the Navy prior to working with Pittsburgh-Corning?

A Yes. This fellow, I believe, used to work out at Annapolis, at the same place where I used to work, but years before, and at that time it was known as the engineering test station.

Q Do you know what his job was at the engineering test station in Annapolis?

A No. That was years before I started work there.

Q Do you know his Navy title, retired?

A No.

Q Do you recall the name of the gentleman from Pittsburgh-Corning's home office with whom you chatted?

A Yes. I think it was in Pittsburgh. He was the sales manager there.

Q You went to Pittsburgh?

A No, no, he came to the Washington area.

Q Do you recall his name, sir?

A No, I don't.

Q What did you discuss with him?

A Well, I was involved in a meeting in which he was there. He was one of the principals of the meeting, and he was asking for time to complete the work that was being done at the University of California under Pittsburgh-Corning's auspices, before any changes were made to any of the specifications.

Q By "changes" do you mean changes from asbestos-containing to non asbestos-containing products?

A Yes. Well, either that or reduction of asbestos.

Q When did he anticipate that this California study would be completed --

A A few months.

Q --to your recollection?

A A few months.

Q Was it completed then, if you recall?

A It took a little longer, as I recall, than he estimated, but it was completed.

Q Upon the completion of that study, did he make any recommendations to you as to substitution of a low asbestos-containing product or an asbestos-free product?

A I don't recall that he did, no.

Q You mentioned a conference with several people. Was anybody else in this conference you had?

A Yes, I believe -- let me think. Was -- Ed Cherobrier I believe was there; Captain Ryan was there, I believe; people at BUMED.

Q Do you recall the names of anyone from BUMED?

A Well, Sam Barboo and his boss, whose name I can't recall. His boss was a captain; Sam was a commander at that time.

Q Sam Barboo?

A Barboo, B-a-r-b-o-o, either Barboo or Barbo. I always called him Sam Barboo.

Q Any other manufacturers' representatives there?

A Not at that meeting.

Q Do you recall any other meetings with manufacturers or distributors of asbestos-containing products?

A Oh, they came into the office from time to time, yes. I can't tell you. There was no specific schedule.

Q Okay.

A They just came in when they were -- when they were in the area.

Q Do you recall the first time you had a conversation with any representative of a manufacturer or distributor of asbestos-containing insulation products?

A I think it was that time I mentioned, that was early in -- well, early in my tenure. It might have even been slightly before my tenure -- my exact time of officially switching from one job to another, by a couple -- it may have preceded it by two or three days.

Q How did that come about?

A It was in September of '68.

Q How did that come about?

A I don't know what initiated the meeting. I know I was asked to attend, since I would soon be involved, by Leon Birnbaum.

Q Did Mr. Birnbaum give you any explanation as to

why you were attending or the purpose of the meeting?

A Well, I was attending because I would soon be involved in insulation, and he wanted me to -- since that was coming, that meeting pertained to something I would be involved in, he wanted me to be privy to the information.

And it dealt, as I recall, with those two objectives I mentioned.

Q I am sorry, I do not recall the two objectives. What were they, sir?

A Well, as I recall, one objective was to reduce the insulation, to find out whether you could reduce the amount of insulation.

Q The amount of asbestos in insulation?

A The amount of asbestos, right.

Q And the other objective?

A The other one -- I just said it a few minutes ago. I must be getting tired again.

THE WITNESS: Would you read me what I said before? It was in answer to this gentleman's question.

MR. NOWINSKI: Off the record.

MR. JELLEY: You said that you were going

to talk -- it was about procedures for ripout.

THE WITNESS: Procedures for ripout, right.

BY MR. HOWD:

Q Do you recall what manufacturers' representatives were there at that first meeting?

A Well, as I say, as I recall, it was H. K. Porter, and Johns-Manville had people there.

Q Do you remember the names of any of these gentlemen?

A Not offhand. I don't, no.

Q Do you recall the substance of that conversation or meeting?

A Well, it was a long time ago, but, essentially, the same theme came through, that we had to continue to use asbestos-containing material in high-temperature insulation.

Q That you had to continue using it?

A Yes.

Q Why?

A Those reasons I mentioned, that no other -- that there was no known material that was asbestos-free that would withstand the rigors of shipboard use.

Q Who told you this?

A The manufacturers' representatives.

Q Would you take a moment, Mr. Murad, and please look at this list. It is on page 1 of the MIL standard 769B.

MR. LEVY: Which 769? B?

MR. HOWD: Yes. We will mark it, but let him take a look at it first.

MR. STANGER: Hadleigh, what page was that?

MR. HOWD: I think page 1.

MR. NOWINSKI: Arabic one.

MR. HOWD: He can look at the whole thing.

BY MR. HOWD:

Q Mr. Murad, if you would take a minute, you can look at the entire document, but I would like to ask you some questions concerning the list of specifications on page 1. You take your time and go through it, please.

MR. NOWINSKI: Off the record.

(Discussion off the record)

Q Are you looking at page 1 of that military standard?

A Yes, I am.

MR. SCHWARTZ: Excuse me, Hadleigh. Off the record.

(Discussion off the record)

BY MR. HOWD:

Q Have you worked on -- by "worked on" meaning drafted, revised or provided any input into the drafting or revision of -- any of the military or federal specifications listed on page 1?

A Yes. Yes, I've provided some information.

Q Would you take a moment and tell us which ones you have worked on and just what your involvement was with the particular specification? This is to the best of your recollection, Mr. Murad.

A Yes. Let's see. As far as anything to do with them?

Q Yes.

A In some cases it wasn't much; in other cases it may have been more than that. This one here, SS-C-466 --

Q All right, let's take it one at a time.
SS-C-466?

A Yes.

Q You have already described your conversations with industry --

A Right.

Q -- concerning your attempts to find an asbestos-free or low asbestos-containing substitute?

A Right.

Q Can you think of anything else, any other involvement you had with that specification, SS-C-466?

A Only trying to use the lower -- the lowest possible asbestos content material in application to our ships.

Q How did you seek to accomplish that, using a lower asbestos content? What did you do?

A Well, mainly, we tried to -- we again relied on industry to determine whether that could be done, wherever it could be done, and talked to the people in the piping area.

Q Excuse me. When you say --

A Al Munkrees.

Q Excuse me. When you say "piping area," are you referring to cide 6153?

A Yes.

Q So that would be the NAVSHIPS --

A NAVSEC.

Q NAVSEC piping area?

A Naval Ship Engineering Center, right.

Q You conferred with the piping area?

A Yes.

Q Just what input, if any, did you receive from the piping area?

A Really, not too much. Most of our input was -- most of the information we got, what little we did receive, was from industry.

Q By that do you mean the manufacturers of asbestos-containing products?

A Yes.

Q Do you recall the names of any of the people in the piping section with whom you discussed this?

A I dealt mostly with Al Munkrees.

Q Can you describe for us just what your dealings were? What did you and Mr. Munkrees do or attempt to do?

A We tried to bring this up-to-date. As a matter of fact, this was --

Q By "this" you are referring to the military standard?

A This is MIL standard 769B, which was later superseded by 769C and I think 769D, so we had a couple of revisions, each time trying to eliminate, among other things -- trying to reduce one amount -- well, trying to use high-

temperature insulation materials that had a lower amount of asbestos, wherever possible, by citing those types within the various specifications that had a lower asbestos content.

Q Would you take a look at page 9, Arabic nine, of that standard, please.

A Okay.

Q Can you tell me: Does the military standard that you have there make any provision for the use of a high asbestos-containing insulation product for high-temperature application?

A Somebody's got something underlined here on the bottom, says for temperatures of 500 degrees Fahrenheit and below, asbestos lagging --

MR. LEVY: Asbestos cloth lagging.

A -- cloth lagging conforming to SS-C-466 grade double A shall be used; grade triple A cloth shall be used above 500 degrees Fahrenheit.

Of course, you have to refer back to this to see what those cloths included. Double A is 90 percent asbestos, and triple A is 9 percent asbestos.

MR. NOWINSKI: When you say "refer back," you refer back to this?

THE WITNESS: To SS-C-466.

A (Continuing) I'd have to read through the whole page if you want me to answer that question completely.

Q Did your work with Mr. Munkrees result in any change or amendment to that standard?

A It might have. I'd have to look at C and E revisions before I could answer that.

Q Did you discuss that standard -- in particular, the provision you have just read -- with any of the manufacturers of asbestos-containing products?

A Probably. Probably. Again, the best I recall, we did talk about this type of thing.

Q Did you seek any input from the manufacturers of asbestos-containing products, input in the formulation of a standard for the use and application of an asbestos-containing insulation product?

A What was that again?

THE WITNESS: Could you repeat that?

MR. HOWD: Would you read that back, Roy.

(The pending question was read.)

A (Continuing) Well, we received -- I don't know if we sought it, but we did receive information in the form

of oral pitches, so to speak.

Q Can you elaborate on that, tell us just what you did receive?

A Well, basically, the main thrust of the conversation, as I understood it, from the variety of insulation manufacturers, was that asbestos was still needed and that the glass cloth would not -- was too friable, that it would break too often.

Q This was in connection with a military standard, as opposed to a military specification?

A Well, the two were tied together, in that the standard cites where you would use the spec, so, when applied to this purpose, the purpose is identified by the various portions of the standard. The gist of the conversation was that the asbestos cloth still was needed.

Q Is it your understanding of that standard, that you have, that it applies to the use of asbestos or applied to the use of an asbestos-containing product on board a ship? Is that correct?

A What was that again, please?

MR. HOWD: Would you read that, Roy,
please.

(The pending question was read.)

A (Continuing) Well, the standard applies to thermal insulating materials, and asbestos-containing materials is one thermal insulating material, one class, you might say.

Q Would a Navy shipyard use that standard?

A Sure.

Q Would a government contract yard, building a ship for the government or the Navy, use that standard?

A If it were invoked in the ship's specification in the contract, yes. It would have to be invoked.

Q Do you have any specific recollection of discussing that standard or revision of that standard with any manufacturer of an asbestos-containing insulation product?

MR. JELLEY: May I have that question reread. I cannot hear Mr. Howd.

(The pending question was read.)

A Specific, no.

Q Apart from 466, do you recognize any of the other federal or military specifications?

A Yes.

Q What is the next one, sir?

A MIL C-783, cloth, brattice, cotton, fire-resistant. It is a brattice cloth.

Q Do you know if that specification concerns an asbestos insulation product?

MR. JELLEY: May I have the question re-read, please. I cannot hear the end of any of these questions.

MR. NOWINSKI: Mr. Jelley, there is an empty seat --

MR. JELLEY: I am perfectly happy right here. If Mr. Howd would speak up instead of mumbling, I would be able to hear him.

MR. NOWINSKI: Mr. Jelley, I think we would proceed faster if you moved up to one of these empty seats, closer to the witness.

MR. JELLEY: I am going to stay here.

MR. HOWD: Mr. Jelley has spoken.

(The pending question was read.)

BY MR. HOWD:

Q We were talking about MIL C-783.

A I think it just is a cotton cloth.

Q What is the next specification you recognize on

that list?

A I know I worked on MIL I-2781; at least reviewed it. I can't remember what I did with it. We're going back, you know, six to nine years.

Q What does that concern?

A It says here it is an insulation, pipe, thermal. As I recall, that was a -- I'd have to check the insulation -- the specification, but I think that was a fiberglass. I think it was. Okay.

Q Do you know if that was fiberglass?

A No, I'm not sure, but I think it is, primarily fiberglass material.

Q Do you recall any conversations with industry concerning that specification?

A Well, we talked with industry on all these specifications, sure. We relied on industry for our information, through ASTM, through NIMA, and by visits from representatives at their discretion. They came in whenever they saw fit, and sometimes they'd call for an appointment and sometimes they'd just pop in.

Q Do you have any record of the manufacturers' representatives or distributors' representatives who just

popped in or visited you?

A No, I didn't keep a record.

Q Did you keep any of their business cards?

A I had -- they had given me business cards, but I don't have any now.

Q Do you think they might be in your files?

A I don't know. I don't know. They might be.

Q What files would those be? How would you identify them?

A I can't even take a stab at it. I have been out of there for six and a half years, so those are the -- the files I turned over could well have been redone.

Q Apart from 2781, do you recognize any other specifications?

A Yes. The -- well, actually, many of these I got involved in.

Q Would you read them off for us, please.

A Sure:

Insulation blanket, thermal, fibrous, mineral --

Q What is the number of that, sir?

A That's MIL I-2818.

Do you want me to go on, just read this whole

page?

Q The ones that you recall having some involvement with.

A I think I got involved in almost all of them to a more or less -- greater or lesser degree. Some of them very little; others quite a lot.

Q Is it your testimony that --

A I'd say almost all of them. There might be two or three here that I didn't get involved in.

Q Can you pick out the ones that you do not feel you got involved in?

A I don't recall MIL P-15328, prima, pre-treatment (formula No. 117 for metals).

Q Do you see any others there that you did not get involved with?

A This one on the bedding compound, MIL B-19564. It is bedding, b-e-d-d-i-n-g, compound, thermal insulation pipe covering. I may or may not have got involved in it, but it wasn't to any great extent, if I did.

Going up to the federal specs, T-T-931, title "Twine, Cotton, Mattress."

Very little in 22-C-775, steel sheets, zinc -

coated.

And QQ-W-343, wire - electrical and non-electrical, copper (uninsulated).

And QQ-W-390, wire, nickel, chromium - iron alloy.

Let's see. SS-C-192, cement, Portland.

TT-P-26, paint, interior, white and tints, fire-retardant.

TT-P-320, pigment, aluminum; powder and paste, for paint.

And UU-T-106, tape, pressure-sensitive adhesive, masking, paper.

The others I think I got involved in.

Q Mr. Murad, then, would it be fair to say the remainder of the specifications listed on that sheet are ones with which you did become involved? Is that correct?

A Yes, I worked with them.

Q During the course of your work with those other specifications, would it be usual procedure to consult with industry concerning the drafting and revision of those specifications?

A Oftentimes we did, particularly when we were

involved in a change. We intended to change the specification after it went through the chop cycle within the Navy, within the coordination cycle, review cycle. It would be sent out to NIMA for review by industry.

Q I think you have described it: What would be the next step? You would send it to NIMA for review?

A After we received comments from NIMA, either -- they would either agree that, yes, this is -- they agree with the change as stated; or they disagreed, for the following reasons, and they'd list the reasons; and we'd resolve whatever the comments were.

Q How would you go about resolving --

A Depending on the comment, we'd either drop it or we'd incorporate it with, because we had good reason. It would really depend on the change involved.

Q Do you recall a circumstance where NIMA suggested a revision, ever suggested a revision to a military specification or federal specification?

A I think they did, but I can't give you a specific example.

Q Do you know if any records were kept of the correspondence between your department and NIMA?

A When I was there, I kept the records -- I kept the -- a copy of the letters that came in from NIMA.

Q How would you identify the file of this NIMA correspondence?

A Usually, it would be under the specification. If it dealt with a specific specification, the letter would be filed in that folder, on that spec.

Q For a particular specification?

A Yes.

Q After you had received input from NIMA, then what was the next step in the drafting or revision process?

A We'd send it to code 6120. As a matter of fact, they would usually be involved in the interface with NIMA. We'd get a copy of the letter they sent to 6120, we'd send it back to 6120, specifically 6120, for the specification specs, and one of the people there would put together the change for presentation to the Specification Review Board.

Q Have you ever heard of the Asbestos Textile Institute?

A The name sounds a little familiar, but I'm not that -- you know, I can't say that I know of it.

Q After it would go to, I think you indicated, the

review board, then what would happen?

A Well, we would -- we'd get on the agenda for the review board and discuss the change, and, as long as the change did not cause a problem with any of the people or with any of the groups that were represented on the board, it would be adopted and finally printed, and the new specification or the amendment to the specification would be issued. After enough amendments came out, then the specification was reprinted.

Q Can you recall an instance where a specification, a military specification, was drafted or revised for a product that was not in existence at the time of the draft or revision?

A I can't recall of one, no.

Q Can you recall an instance where a drafted specification or revised specification required that a new product be made to meet it?

A No, I can't recall it.

Q So would it be fair to say that all specifications, newly drafted or revised, concerned existing products?

MR. STEWART: I object to the form of the

question.

A I would say yes.

Q In your conversations with industry or the manufacturers, do you recall any conversations concerning health and asbestos?

A I can't recall any specific ones. There was -- well, the one that I mentioned with Pittsburgh-Corning, in which the --

Q This is the University of California?

A Right. Right.

(Continuing) -- in which they were run -- they were sponsoring a study to verify, to check out, what Selikoff had published.

But, otherwise, the people we talked to were basically marketing people. They were not well-versed in health hazards, to my knowledge, nor was I. We would both be just talking informally, to put it at best.

Q Was health discussed, apart from the Pittsburgh-Corning example you have mentioned?

A Not that I recall.

Q Was health ever a consideration in the drafting or revision of a military specification during your tenure?

A Well, we wanted to reduce asbestos, inasmuch -- the best way we could at the time, based on the materials that were available to us that we knew would do the job.

Q This was in connection with Mr. Cherobrier's work?

A Yes.

Q Apart from that --

A We were both --

Q -- was health ever a consideration, to your knowledge, in the drafting or revision of a military specification?

A That has to do with asbestos, you mean?

Q Yes, sir.

Q I don't think so. I don't -- I don't think I can answer the question to any useful degree.

Q Did you ever receive any written communication from any manufacturer of asbestos products concerning health and asbestos?

A I don't recall of receiving any, myself, no.

Q Do you recall ever seeing any such written communication during your tenure --

A Well, there was a --

Q -- in the coatings unit?

A I think I recall a letter which set forth some procedures for working with asbestos, asbestos ripout, and some of which I believe were incorporated in that instruction 5100 dash -- or point two, whatever it is, the one we referred to earlier in the deposition.

Q The NAVSHIP instruction?

A Yes, NAVSHIP instruction 5100.26.

Q Do you recall from whom you received that --

A I don't know if I received it, personally, now, but, as I recall, it was a letter that came into the Navy, and I'm not sure if it came into our office or someone else's, and I believe it came from H. K. Porter.

Q Do you recall when you first saw that?

A Oh, gee --

MR. HOWD: Excuse me. Off the record.

(Discussion off the record)

A (Continuing) I don't recall when I saw it, no, to answer your question.

MR. HOWD: Referring to the military standard with the list of military specifications, I would like to have that marked for identification.

MR. NOWINSKI: Is that the same military standard that we have been talking about for an hour?

MR. HOWD: Yes.

MR. NOWINSKI: How will we know that?

MR. HOWD: Would you mark this, Roy.

(Copy of MIL standard 769B (Ships), headed "Thermal Insulation Requirements for Machinery & Piping," dated January 3, 1966, consisting of seventeen pages, was marked General Dynamics (Murad) Exhibit 5 for identification, as of this date.)

BY MR. HOWD:

Q Mr. Murad, referring to General Dynamics (Murad) Exhibit 5 for identification, would you, for the record, identify that exhibit.

A Military standard, thermal insulation requirements for machinery and piping, MIL standard 769B (Ships), 3 January 1966.

Q Mr. Murad, is that the standard or the document to which you made reference earlier on in your testimony today?

A Yes, it is.

Q Is that the standard or document containing a list of military and federal specifications to which you made reference earlier on in your testimony?

A Yes, it is.

Q You mentioned conversations with industry. I think you indicated you had conversations with representatives of Johns-Manville and Pittsburgh-Corning; is that correct, sir?

A Yes.

Q Do you recall the names of any other manufacturers?

A H. K. Porter. We talked with people from Eagle Picher, from Claremont. Raybestos-Manhattan came in once, I believe; yes, at least once. Very shortly, though, not too much. Who are some of the others? Did I say Johns-Manville? Owens-Corning.

Q I do not recall.

A Okay, Johns-Manville, Owens-Corning.

Q Owens-Corning?

A Yes.

Q Did you have any conversations with anyone from

Cummings Insulation?

A Cummings?

Q Cummings.

A Not that I recall.

Q Claremont Insulation?

A Claremont. I mentioned them.

Q Any conversations with anyone from Amatex?

A Amatex? May have. The name sounds familiar, certainly, and I may have talked to one of their representatives, but I'm not -- I can't recall the specific conversation. But certainly I remember the name.

Q Did you have any conversations with anyone from Eastern Refractories?

A Not that I recall.

Q Have you ever had any conversations with anyone from Defense Apparel?

A No, not that I recall.

Q Any conversations with anyone from SEPCO?

A SEPCO? No, I don't think so.

Q Shook & Fletcher?

A No.

Q Have you had any conversations with anyone from

Reef Industries?

A Reef?

Q Reef.

A I don't think so, no.

Q Have you ever heard the name UNARCO?

A Yes.

Q In what context did you hear the name UNARCO?

A Wasn't there someone here from UNARCO?

Q Have you ever had any conversations -- this is during your tenure in the coating unit -- with a representative of UNARCO, or Union Asbestos & Rubber Company?

A I'm trying to remember if there was a representative. I recall the name. They were a supplier, as I recall, but I can't remember any specific conversations.

Q Have you had any conversations with a representative of Westinghouse?

A Not during that tenure, that I recall, no.

Q At any other time during your employ with the government, have you had conversations with representatives of Westinghouse?

A No, I don't think so, not concerning insulation. I may have when I was in water treatment.

MR. NOWINSKI: Off the record.

(Discussion off the record)

BY MR. HOWD:

Q Mr. Murad, you have explained to us your early conversation with Mr. Cherobrier concerning the asbestos substitution program or attempts. Did you receive any written material from him concerning asbestos and health at any time?

A Not that I recall. I may have. As I said earlier, I may have read that newspaper article that seemed to kick this whole thing off, but I don't remember when I read it or even if I did read it. I certainly remember talking about it, hearing about it.

Q You remember it being brought to your attention?

A It was brought to my attention, yes.

Q There was the Times, The New York Times article?

A It was either the Times or the Post.

Q Or The Washington Post?

A One or the other.

Q It concerned the Selikoff work?

A Yes.

Q Have you ever seen this document, sir?

MR. NOWINSKI: Hadleigh, are the markings on this document yours, or is this the way you --

MR. HOWD: Which marking?

Yes, the marking on that document is mine.

A No, I don't recall seeing this.

Q Would you identify that document, for the record.

A It is NAVEXOS P-52.

Q And the date of it, sir?

A Okay, the date is August 1946. It is volume III,

No. 3.

Q Would you look at this document, please, Mr.

Murad.

MR. LEVY: Are you going to mark these?

MR. HOWD: Off the record.

(Discussion off the record)

MR. HOWD: Would you mark this.

MR. LEVY: Off the record.

(Discussion off the record)

(Copy of NAVEXOS P-52, volume III, No. 3, dated August 1946, consisting of three pages, was marked General Dynamics (Murad) Exhibit 6 for identification, as of this date.)

MR. HOWD: For the record, we have marked the publication just perused by Mr. Murad as General Dynamics Exhibit 6 for identification, and this is the publication received as part of the Government's response to interrogatory 67 of the defendants' first supplemental response to plaintiffs' interrogatories.

MR. NOWINSKI: Have you marked the document Mr. Murad reviewed?

MR. HOWD: No.

MR. NOWINSKI: A different document; is that correct?

MR. HOWD: Yes, that is correct.

BY MR. HOWD:

Q Mr. Murad, for the record, would you please look at General Dynamics Exhibit 6 for identification --

MR. NOWINSKI: He has just spent five minutes reviewing another document.

MR. HOWD: He is going to have to look at another one, Peter, since you --

MR. LEVY: That is a clean one.

A Is this the same as this, or what?

Q Wait a minute. Mr. Murad, would you please look at Exhibit 6.

A Exhibit 6? This is Exhibit 6. Okay.

Q Is that --

A This is the one I just looked at earlier.

Q Is that identical to the exhibit you just looked at earlier?

A Well, the cover sheet is.

Q Would you look at the rest of it, please.

A It looks like -- yes.

Q Is it your testimony that you have not seen that document before today?

A Yes.

Q Would you look at this document, please, Mr. Murad.

MR. NOWINSKI: Why don't you mark it. Do you want to do it the same way? Okay.

MR. KENNY: This is objected to as harassment of the witness.

A Okay.

Q Would you identify that, please.

A This one is safety review, NAVEXPOS 1-51, volume

IV, No. 1, January 1947.

Q Have you seen that document before today, sir?

A No.

MR. HOWD: Would you mark that, please, Roy.

MR. LEVY: Was this also taken from the Government's responses to the interrogatories, Mr. Howd?

MR. HOWD: Yes.

MR. LEVY: Thank you.

(Copy of NAVEXPOS P-52, volume IV, No. 1, dated January 1947, consisting of four pages, was marked General Dynamics (Murad) Exhibit 7 for identification, as of this date.)

BY MR. HOWD:

Q Mr. Murad, would you please look at this document.

MR. NOWINSKI: This is another marked-up copy.

(Discussion off the record)

Q Would you identify that document, please.

A Safety manual, part two, shops 56, 25 and 27,

Norfolk Naval Shipyard, first edition, 1954.

Q Have you ever seen that document before today, sir?

A No.

MR. HOWD: Would you mark this.

(Copy of Safety Manual, Part 2, shops 56, 25 and 27, Norfolk Naval Shipyard, 1st edition, dated 1954, was marked General Dynamics (Murad) Exhibit 8 for identification, as of this date.)

MR. HOWD: For the record, this document which has been marked as Exhibit 8 for identification was produced by the Government in response to interrogatory 67 of the plaintiffs' interrogatories.

MR. SCHWARTZ: Off the record.

(Discussion off the record)

MR. HOWD: For the record, it is agreed that we will use a marked copy for purposes of identification, and then at some later time substitute an unmarked copy. Is that agreeable to everyone?

MR. LEVY: Yes.

MR. MOHR: Yes.

MR. STANGER: Yes.

MR. KENNY: Off the record.

(Discussion off the record)

BY MR. HOWD:

Q Would you look at this, please.

A Okay.

Q Would you identify that, please, sir.

A This is safety handbook for pipe fitters, NAVORD instruction 5100.21. ;

Q Have you ever seen that before?

A The date is 7 January 1953.

Q Have you seen that document before today, sir?

A No.

MR. HOWD: Mark that, please, Roy.

(Copy of Safety Handbook for pipe fitters, NAVORDINST 5100.21, dated January 7, 1953, consisting of four pages, was marked General Dynamics (Murad) Exhibit 9 for identification, as of this date.)

MR. HOWD: For the record, Exhibit 9 has been produced by the Government in response to interrogatory 67 of the plaintiffs' interrogatories.

BY MR. HOWD:

Q Would you look at this, Mr. Murad, please.

Mr. Murad, have you seen that document before today?

A No, sir.

Q Would you identify that for the record.

A Safety precautions for shore activities, NAVSO P-2455, April 1965. Then there's a lower right-hand corner, change 1 June 1967.

MR. HOWD: Would you mark that, Roy, please.

(Copy of NAVSO P-2455, "Safety Precautions For Shore Activities," dated April 1965, changed June 1, 1967, consisting of two pages, was marked General Dynamics (Murad) Exhibit 10 for identification, as of this date.)

Q Mr. Murad, in connection with the task of the test in California, I think you have indicated it was at Hunters Point and it concerned molded pipe insulation?

A Yes.

Q Do you recall if any manufacturer or industry participated in that test or task?

A Well, only to the extent that they -- certainly, we had to procure material from industry, but they didn't have a hand in the actual testing.

Q Do you know from whom the material was procured?

A I think it was H. K. Porter -- excuse me, it was Eagle Picher.

Q This was molded pipe insulation?

A As I recall. It may have also been around the propulsion plant. They used a gas turbine, though. It was for the PF.

Q What was the result of that test, if you know?

A Well, the test wasn't completed until after I left. I left before the test was complete.

Q Do you know if there exists a report of the test result?

A I don't know if there's a report. I don't know.

Q Do you know who had responsibility for that test?

A The person out there?

Q Yes.

A I don't remember the name.

Q Did you observe any of the test procedure?

A No.

Q Do you know if anyone from your department observed any of the test procedures?

A No, I don't know if anybody did.

Q It is my recollection of your testimony that, when you were in the coatings unit, you had communications with the boiler people, the piping people and the refrigeration people, or these sections. This is when you were in the coatings unit.

What conversations, if any, did you have with the people in the piping section? What was the nature or the gist of those conversations?

A Al Munkrees -- talked with him about the use of -- I worked with him on 769, revision C and D, talked to him on the use of insulation materials for their piping systems.

Q Do you know if that section, the piping section, was involved in the use and application of asbestos-containing insulation products?

A Sure. Yes.

Q Where, or how?

A On high-temperature pipes.

Q Would this be on board ship?

A On board ship, yes.

Q Did they direct particular operation, or were they, themselves, actively involved in the installation of --

A Well, it was a headquarters operation. We didn't do any actual, physical work.

Q What --

A Just writing instructions and serve as an information-gathering and -dispensing service.

Q To whom would you disperse or to whom did they disperse this information; concerning the application and use of asbestos insulation products?

A Various shipyards. If a ship had a problem, they'd come in to the type desk. It was called the type desk at that time; now they call it ships logistics managers. And the ship logistics managers, or SLIMS, type desk, would -- or should come to the appropriate Naval Ship Engineering Center engineer involved.

Q Do you know if this section had responsibility for private yards involved with government contract?

A No, I don't know that.

Q Contracts.

A I don't know that as a fact, no.

Q Do you know if they had any involvement with the

contract yard, the private yard building a government or Navy ship?

A No, I don't.

Q Do you know if they had any involvement with the Navy shipyards?

A I don't know it as a fact, no.

Q Do you know who is in charge of that department now?

A No, I don't. ; I've heard the name, but I don't know.

Q Do you know if there exists any document setting forth or defining the responsibility of that section or department?

A The only one I know of is, if it is -- I'm not sure if it talks to that section. When I worked at NAVSEC, there was a -- in the phone book there was a brief description of what a department or office did, but the department or office could consist of several divisions, branches, sections, units.

Q When you were in the coatings unit, did you have a formal job description or position description?

A Yes.

Q Do you know where that is?

A No.

Q What is your recollection or understanding of your position or job description when you were in the coatings unit?

A To work with insulation materials, try to keep them -- to try to provide the best insulating materials for -- both thermal and acoustical insulation materials, for use on board ships.

Q Do you recall if that job position included any of the procedures you have already described today for the drafting or revision of a military or federal specification?

A I don't think they went into that detail, no.

Q Did you have any contacts with the Naval nuclear engineering organization?

A Yes.

Q Would you describe those for us, please.

A When I was in water treatment, we used to provide them with the information that we developed and maintained on water treatment, and they provided us with their water treatment manual.

Q Did you have any contact with them concerning

insulation products or the use and application of insulation products?

A Yes, a little.

Q Would you describe that for us, please.

A Well, there was a letter that came to us asking -- referring to the status of insulation materials, and we responded to it.

Q When was that, Mr. Murad?

A I don't know the exact date. I think it was roughly -- roughly a year or so after I was -- I started, which would make it late '70's.

Q When you say --

A Late in the year 1970.

Q When you say concerning the status, what do you mean by that?

A Well, the -- essentially, we were asking what the status of insulation materials were that we were in the process of improving, primarily from an asbestos-containing material, high-temperature insulation.

Q Did this concern health at all, health and asbestos?

A I don't recall that they cited health, per se.

Q This concerned the performance aspects of the product?

A I believe so.

Q Did you prepare a response?

A Yes.

Q Do you recall how you went about or what you did in order to prepare that response?

A Well, I gave them the status of what we were doing.

Q This would be in regard to military specifications?

A Yes, it includes specifications, right.

Q What did you tell them, specifically, when you say you told them "what we were doing"? Just actually what did you tell them?

A Oh, boy. I don't know if I can recall all the details. I essentially, as I recall, said that we were about at the point that we thought we would be at that time, based on -- I think there was a -- gee, I think there was a piece of paper, a letter or perhaps that instruction that we referred to earlier, which they in their letter referred to. They questioned whether we were making progress at the rate

that we had expected to, and I pointed out that we were.

Q This was progress towards some goal?

A Towards reducing the asbestos content in high-temperature insulation materials.

Q Did they at any time provide you with input as to how to achieve this goal?

A No, not that I recall.

MR. NOWINSKI: Off the record.

(Discussion off the record)

(Time noted: 4:53 o'clock p.m.)

HENRY GEORGE MURAD

Sworn to and subscribed before me

this _____ day of _____ 1979.

I N D E XWITNESS

<u>NAME</u>	<u>EXAMINATION BY</u>	<u>PAGE</u>
Henry George Murad	Mr. Jelley	7
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1	Copy of NAVSHIPSINST 5100.26, dated February 9, 1971, consisting of 9 pages	68
2	Copy of MIL I-150913, headed "Insulation Felt, Thermal, Asbestos Fiber," dated July 3, 1962, consisting of 16 pages	101

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| 3 | Copy of SS-C-00466D, headed "Cloth, Thread & Tape - Asbestos (Navy Ships)," dated June 19, 1962, consisting of 11 pages | 103 |
| 4 | Copy of SS-C-466E, headed "Interim Amendment - 1 (Navy Ships)," dated June 17, 1965, consisting of 10 pages | 103 |

GENERAL DYNAMICS (MURAD)
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|---|---|-----|
| 5 | Copy of MIL standard 769B (Ships), headed "Thermal Insulation Requirements for Machinery & Piping," dated January 3, 1966, consisting of 17 pages | 169 |
| 6 | Copy of NAVEXOS P-52, volume III, No. 3, dated August 1946, consisting of 3 pages | 174 |
| 7 | Copy of NAVEXPOS P-52, volume IV, No. 1, dated January 1947, consisting of 4 pages | 177 |
| 8 | Copy of Safety Manual. Part 2, chaps 56, 58 and 57, Norfolk Naval Shipyard, 1st edition, dated 1954 | 178 |

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9	Copy of Safety Handbook for pipe fitters, NAVORDINST 5100.21, dated January 7, 1956, consisting of 4 pages	179
10	Copy of NAVSO P-2455, "Safety Precautions For Shore Activi- ties," dated April 1965, changed June 1, 1967, con- sisting of 2 pages	180

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IN THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF CONNECTICUT

-----X

IN RE: GENERAL DYNAMICS ASBESTOS CASES : CML No. 1

-----X

SAMMIE L. GRAY, et al., :

Plaintiffs, :

-versus- :

Civil Action

No. H-75-327

GENERAL DYNAMICS CORPORATION, et al., :

Defendants. :

-----X

HENRIETTA C. BROWN, et al., :

Plaintiffs, :

-versus- :

Civil Action

No. H-76-434

UNITED STATES OF AMERICA, et al., :

Defendants. :

-----X

Continued deposition of ~~HENRY GEORGE~~

, taken pursuant to adjournment and the
Federal Rules of Civil Procedure, at the offices
of the United States Department of Justice, 550

11th Street N. W., Todd Building, Washington,
D. C., before Roy F. Brown, a Registered
Professional Reporter and Notary Public within
and for the State of Connecticut, on Tuesday,
May 22, 1979, commencing at nine-fifteen o'clock
in the forenoon.

ooo

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Also Present:

DALE ZIMMER

United States Department of Justice
Washington, D. C.

ooc

H E N R Y G E O R G E M U R A D , having been
previously duly sworn, was examined and testified
further as follows:

CROSS-EXAMINATION (CONT'D)

BY MR. HOWD:

Q Mr. Murad, I think you explained to us yesterday
that the piping code or piping department had within its
area of responsibility sections which actually applied
asbestos insulation. Is that correct, sir?

A Well, the -- yes, that's basically right.
They wrote up MIL standard 769, primarily responsible for
that, and they cited the various specifications of materials
to be used for lagging pipe.

Q Do you know where this pipe lagging was done?

A Well, it was done at the shipyards.

Q Were they Navy shipyards?

A Navy shipyards for overhaul and repair.

Q Did you at any time have occasion to observe any
of these sections or units installing the insulation
products?

A I believe I did see at least one --

Q When was this, sir?

A -- as I recall.

I can't recall the exact time, but I visited shipyards from time to time for a variety of reasons and went on board some ships that were in the process of being overhauled or repaired, and I saw various installation procedures of all kinds of insulation.

Q Was this on board a ship?

A Yes.

Q Was this a surface ship or a submarine?

A I was on -- I've seen work done on both surface and submarine ships.

Q How many occasions have you seen installation work done?

A I can't give you a specific number.

Q A number of times or --

A A number of times, yes.

Q Can you give us any idea as to when it was? Was it in 1969, when you first went with the coating department, or sometime later?

A Sometime later.

Q Can you tell us what you actually observed?

A I just saw --

Q For example --

A -- men -- everybody called themselves mechanics -- installing insulation on bulkheads, hulls, piping, on boilers.

Q Did you see any of the preformed pipe insulation being installed?

A I think I did.

Q What did you observe in that regard, the installation of the preformed pipe insulation?

A To me it seemed like a simple procedure.

Q How did they do it? What did you see?

A As I recall, to the best of my recollection, they simply take the preformed pipe insulation out of a box, set it on a -- on the pipe to be insulated, and secure it with either wires or tape, and sometimes they would put lagging cloth on it.

Q How would they affix the lagging cloth to the preformed pipe insulation?

A With a glue.

Q With a glue?

A Right.

Q Would this glue be part of the cloth, or did they mix it separately?

A There are two procedures. You can have a pre -- what they call a prewet cloth, or pretreated -- what it is, it is already treated with an adhesive, and you wet it.

Q When you were observing this operation, did you see anyone wearing a respirator?

A I really don't know.

Q Were you wearing a respirator?

A When I saw it?

Q Yes.

A No.

Q Do you recall if the area where this operation was being performed was isolated in any way, partitioned in any way?

A On some occasions they were. It depended, really, on the work that they were doing, I think, but in some cases they were.

Q Do you know whether or not other trades, meaning a person doing something other than the lagging operation, were present when this pipe, preformed pipe insulation and lagging material, was applied?

A I don't know. It may have been. I really don't know.

MR. KENNY: Excuse me. What time period is this? Just generally between 1969 and '72?

MR. HOWD: Sometime after 1969.

THE WITNESS: Yes.

BY MR. HOWD:

Q You cannot narrow the time period down any further?

A It wasn't in '69. It was after '70, and --

Q Could you tell us if it was before or after the OSHA standards?

A When were the OSHA standards? When did the OSHA standards go into effect?

MR. KENNY: December.

MR. LEVY: The emergency standard went into effect on December 7, 1971.

Q It is my understanding that --

A December 7th? That's --

Q For the record, it is my understanding the emergency standard went into effect in December of 19 --

MR. LEVY: '71.

Q -- 71.

MR. NOWINSKI: So your question is whether

these observations are after that date?

MR. HOWD: Yes.

A '71. Many of them were before. I visited -- I know I visited Charleston in February of '72, but I didn't get to see much, because I became sick, so I ended up in the hospital there. It had nothing to do with asbestos. But I don't -- I can't tell you whether any were after December '71 that I actually observed that or not. Certainly, I was on board ships after that.

Q Confining your answer at this time to the installation procedures of the men working with the preformed pipe insulation which we have just discussed, do you have any recollection as to the ventilation facilities on ship-board at that time?

MR. NOWINSKI: Excuse me, Hadleigh. May it also be understood that your examination is limited to visits which did not relate to the audit or inspection of Naval shipyards, about which we talked briefly yesterday and I instructed the witness not to answer?

MR. HOWD: Yes. It was my understanding, Peter, yesterday, you had indicated that you were

instructing him not to answer questions concerning his visits to the shipyards to see if that instruction that has been marked as Exhibit 1 was being enforced, and I think Mr. Murad is talking about the time period before the OSHA standard, which certainly would be before the instruction was published.

MR. NOWINSKI: Fair enough. I just did not want any confusion.

BY MR. HOWD:

Q Is that understood, Mr. Murad?

A Well, I believe the -- didn't you just say the OSHA standard came out in December of '71?

Q Yes.

MR. KENNY: That was February of '71.

A The instruction is dated February of '71, as I recall, in looking at it yesterday.

Q Did you observe any ventilation equipment on board the ships where this preformed pipe insulation was being installed?

A I really don't remember.

Q You mentioned you had occasion to observe the

installation of the boiler type of insulation. Could you tell us what time period you observed this type of insulation being installed?

A I can't definitize it any better than I have before.

Q Sometime after 1969?

A Sometime after -- after '69, yes.

Q Tell us what you observed, please.

A Well, with regard to boiler insulation, I simply saw that the lagging was there. They showed me -- not -- I am not sure if I actually saw the lagging being installed on boilers. I did see the lagging on the boilers, and the person that was guiding me through showed me how it had been done.

Q This person that was guiding you through -- do you know what organization he was with?

A I believe he was a representative of shop 56. Usually I dealt with shop 56 in the shipyards, and they would --

Q What type of insulation product did you see used to insulate a boiler?

A They were using -- the stuff I saw was high-

temperature insulation, and it did contain asbestos.

Q Was it block-type insulation?

A No. I saw the lagging, the --

Q The cloth on the outside?

A The batting. Yes, the cloth and the batting. It is essentially a felt. They call it an asbestos felt.

Q Did you see it being installed or did you see it after it was installed?

A No, I saw it after it was already installed, and I was shown how the wires were twisted to secure it; just the final product, after the fact.

Q Apart from the preformed pipe insulation and the boiler-type insulation you have just explained, did you see any other equipment being insulated or did you see any other types of asbestos insulation being applied?

A No, not asbestos -- not that I recall of any asbestos insulation, no.

Q What was your purpose in going on board ship to observe the boiler insulation and the pipe insulation which you have discussed?

A Usually, it was in conjunction with another reason for visiting the shipyard, and normally that had

something to do, obviously, with either insulation or something that was related to that, and I took a little time out to visit the ship primarily for my own education, to see how the materials I was talking about, writing about, working at at the desk, were actually used in practice.

Q Other than the MIL standard which has been marked for identification, are you aware of any other documents containing instructions or procedures for the installation of asbestos insulation products?

A The Naval Ship Technical Manual.

Q What would be the formal title of that?

A That's it, Naval Ship Technical Manual.

Q Do you know to whom this is issued?

A It is issued to all the ships and shipyards.

Q Would this be Navy shipyards?

A Navy shipyards, yes.

Q Do you know if it is issued to a government contract type yard; in other words, a yard building --

A It is accessible to them, yes.

Q How would it be accessible to them, if you know?

A I'm not sure how it is right now. At one time anyone could go down and -- I was told that anyone could go

down and buy them from the Government Printing Office. Then sometime -- oh, I'm not sure exactly when -- six or seven years, eight, maybe nine years ago, the distribution was tightened a little to allow it to be made available to those people who had a legitimate need. So, certainly, anyone who was working on Naval ships had that need.

Q Do you know if there existed -- and I am talking about the time period when you were in coatings -- any procedure whereby this document would be distributed to a contract shipyard? This is if you know.

A I don't know the exact procedure.

Q You don't?

A I don't know the exact procedure.

Q But you do know, if someone wanted it, they could go and buy it?

A That was my understanding, yes.

Q During your tenure in the coatings unit, did you ever see any publication of BUMED concerning asbestos and health, the Navy Bureau of Medicine?

A I don't recall seeing any publications from them, no.

Q You have explained to us the procedure whereby a

military specification is drafted and revised. Do you know the origin of a military specification? I am talking about the ones dealing with asbestos insulation products. Can you tell us how they came about, where they came from?

A Not with -- no, I can't.

Q What is your understanding, your best understanding, as to the origin?

A Well, I have worked on other specifications, developed them from the start. One specifically I recall; I worked with a Naval laboratory to develop a specification.

Q What specification was that?

A That was one on the fire-fighting foam test kit. We simply described the test kit definitively enough so that it could be made a part of a procurement and bought from industry.

Q So, then, what is your understanding of the purpose or reason for a military specification?

A To describe a material which the government may want to procure.

Q Why would you describe it? What would --

A Well, so that the government would be able to buy that material which is deemed the correct material to use for

a particular purpose.

Q Is this a classification type of procedure?

A It involves classification, yes. You have to describe the material that you want, certainly.

Q Have you ever heard the term of SSP?

A SSP? No, not that I -- it doesn't ring a bell right now.

Q You have told us what a MIL standard is. What is your understanding of the origin of a MIL standard, military standard?

A Military standard, to my understanding, is a document that describes where certain specification materials may be used in an operational situation; namely, to use it for the purpose intended, of those specifications.

Q Does the MIL standard include instructions as to how the product is to be used or applied?

A Some of them do, yes.

Q Do you know the origin or how the military standards came about?

A No.

Q Mr. Murad, it is my recollection of your testimony yesterday that you indicated that, in regard to

this asbestos elimination program -- those are my words -- Mr. Cherobrier's efforts to remove or decrease the asbestos content of insulation products -- I think you said that you solved part of the problem by reducing asbestos content in batting and boiler insulation. Did you indicate that yesterday?

A Yes, that was -- I believe we did reduce the -- we specified wherever possible that type of asbestos-containing insulation which had the lower or lowest asbestos content that we could actually use, depending on the specification, of course. Some had only two types; some had more than two types.

Q How soon after the asbestos elimination program, for lack of better terms, was this accomplished, what you have described in regard to the batting and the boiler insulation? Is this something you were able to do right away, or did this take time?

A No, it took some time.

Q Was a specification change necessary?

A To do that?

Q Yes.

A No, because there were already types, various

types of materials, identified in the specification.

Q So what did you do to accomplish this change?

A Well, we worked with the other people involved to try to reduce -- to select those types of asbestos-containing materials that were low in asbestos, relatively low in asbestos, to be those that were selected in standard -- MIL standard 769.

Q So I take it, then, that you revised or changed the MIL standard so as to provide for the use of the products containing less asbestos?

A That's correct.

Q Do you know when you did that?

A Well, we could check it by looking at the MIL standard. I noticed yesterday that they had the -- someone had written in when the C and D revisions --

Q So it would be one of those revisions?

A Right.

Q You have indicated that certain codes or departments are involved in the change or revision of a specification, and I think you explained that department or code 6105, safety, is involved in specification revision; is that correct?

A Well, I don't think I cited them as necessarily being involved. They may be involved, depending on the nature of the specification. We would work with any Navy code that we felt had a legitimate interest in that specification, and also we'd work with people outside the Navy if they, too, had an interest in the specification.

Q So, then, code 6105 would become involved if you determined that they had an interest?

A It wasn't really our determination.

Q Who would make that determination?

A The initiator of the change or revision to the spec, depending on the nature of it, would certainly try to make that -- would make the initial chop --

Q Determination?

A -- determination, you might say. Really, it would be up to 6124, the specification people.

Q They would determine whether or not 6105, safety, would become involved in the particular specification revision?

A Yes. Oftentimes they would ask the person initiating the change his views on it, but they would really be the ones who would determine that.

Q Do you recall any instance where 6105, the safety code, became involved in the drafting or revision of the specifications contained on page 1 of the military standard we went over yesterday? Would you take a minute and look at that page 1 again, please.

A As I recall, we did check with personnel in 6105 on a number of these. Whether they actually -- whether it was oral or in writing I'm not sure. I know definitely it was oral, certainly. Whether we also had written comments from them I'm not sure.

Many of them -- or several of them, at least, were from the fire hazards standpoint. Ed Cherobrier dealt with Larry Farina on asbestos.

Q Larry Farina was in 6105?

A He was in 6105.

I didn't talk with Larry much about it. Ed handled that most of the time.

Q Do you recall the names of any other people in 6105, safety, with whom you dealt or with whom your department dealt in the specification revision?

A Certainly Ben Leota was the top person.

Q Would you spell his last name, please.

A L-e-o-t-a, I guess.

Q Do you know where Mr. Leota is stationed today?

A To my knowledge, he's still in 6105.

Q And Mr. Farina?

A I believe he's still in 6105, also.

Q Do you recall the names of any other people in that code with whom you dealt or your department dealt?

A Yes, we used to deal with Jim Hughes on fire hazards, and there were two or three other people that we dealt with on various material problems that had safety requirements or had a safety aspect to them.

Q Mr. Murad, you explained to us that code 07 was concerned with shipyard resources and played a role in drafting the instruction which we have marked as Exhibit 1 for this deposition. Is that correct, sir?

A Yes.

Q By "resources" do you mean the manpower or the people working in a shipyard?

A Manpower and equipment.

Q This would be men installing insulation on a shipyard?

A Yes.

Q Would this be a Navy shipyard?

A Navy shipyards only at that time.

Q "At that time" meaning February 1971, when the --

A Well, during my tenure, 07 had responsibility for Navy shipyards.

Q And the men working in the shipyards?

A They did not have responsibility for the Supervisors of Shipbuilding in the period that -- well, from '69 to '72, when I was involved.

Q Was there any connection, if you know, between code 07 and SUPSHIPS?

A At that time, I don't know of any.

Q Do you know if there is one today?

A Oh, yes.

Q And --

A 07 --

Q Would you describe that connection.

A Well, 07 has responsibility for Supervisor of Shipbuilding today.

Q Do you know when 07 acquired that responsibility?

A It was approximately '74. I believe it was when NAV -- about the time when NAVSHIPS reorganized and

integrated with NAVORD to become NAVSEA, in that time period. That happened in July of '74, I believe.

Q Mr. Murad, referring to page 3 of the instruction which has been marked as Exhibit 1 for identification, and page 7, would you look at the distribution, please, and tell me if SUPSHIPS would be under any of the departments listed there, to your knowledge.

MR. LEVY: Which exhibit?

MR. HOWD: 1, the instruction.

A Well, it is here, but it's been crossed off. The standard Navy distribution list symbol is FXL2, SUPSHIP. It's been crossed off. I don't know; that doesn't mean anything to me. Anybody can take the original, cross it off and take a copy, or take a copy, cross it off and make another copy. It doesn't mean anything.

Q But on the original SUPSHIPS was included in the distribution list?

A It appears that way to me, yes.

MR. SCHWARTZ: Off the record.

(Discussion off the record)

BY MR. HOWD:

Q Mr. Murad, this survey that was discussed

yesterday, that was, as I understand it, within the control --

MR. NOWINSKI: Excuse me, Hadleigh. For the record, on pages 7 and 8 of Defendants' (Murad) Exhibit 1 -- on page 7, under "Distribution," SUPSHIP is shown, and has one or two lines drawn through it; on page 8, under "Copy to," SUPSHIPS is written in in handwriting.

MR. SCHWARTZ: Let me state on the record that exhibit came from my file yesterday, at someone's request, and I have no idea as to, sitting here today, without checking my inventory index, from where that document came or by whom the markings to which Mr. Nowinski has just referred were placed.

MR. HOWD: Off the record.

(Discussion off the record)

BY MR. HOWD:

Q Mr. Murad, do you know if any of the manufacturers or distributors of asbestos insulation products participated in the survey that you have described that was conducted by Ed Cherobrier's people?

MR. NOWINSKI: Excuse me, Hadleigh. What

survey are you talking about?

MR. HOWD: The survey Mr. Cherobrier's men conducted. I think Mr. Murad has testified it began in 1968, started in Philadelphia.

BY MR. HOWD:

Q Do you recall that?

A I think I know the one you're referring to.

Q Yes.

A I don't -- to my knowledge, they didn't participate -- I'm not sure what you mean by the word "participate." Did they actually go out and gather information?

Q Or did they provide any input to the people making the survey or working with the survey, if you know?

A I don't know.

Q Do you recall ever dealing with a Mr. Barnhart?

A Barnhart? The name seems familiar, but I can't place him at the moment. Maybe if you give me some more information I might.

Q A Jack Barnhart, from NIMA.

A Jack Barnhart? I think I spoke to him by phone. I don't think -- I recall if I met him or not. But I did

deal with NIMA, and, as I recall, Barnhart was more or less the focal point for NIMA.

Q He was the spokesman?

A The executive secretary -- I'm not sure what his title was, but he dealt with -- I think he signed off on letters that came to us.

Q What did the letters concern?

A Well, they concerned NIMA's position on specifications or other insulation matters.

Q What other insulation matters were --

A Well, anything that involved the products that the members of NIMA were concerned with and that they obviously felt that we had some concern, interest or possibly some control over.

Q Can you think of anything besides the drafting or revision of a military specification that NIMA had interest in or contacted you?

A I can't recall a specific one that didn't have to do with a specification, but --

Q Can you think of any other issue, other than the military specification, which was the subject of a communication or correspondence with NIMA?

A I can't think of one offhand. Of course, all the manufacturers were interested in the asbestos situation, and they would, as I mentioned before, visit or call and give their company's position on the situation. Primarily those people who had asbestos-containing insulation products took the view that there was no better choice at the time. Representatives of companies that were selling their non-asbestos, high-temperature insulation materials took the view that their materials could do every bit as good and didn't present any other kinds of problems.

Q Do you recall any instance --

MR. MOHER: Excuse me, Hadleigh.

Could I have that last answer read back, please.

(The answer was read.)

BY MR. HOWD:

Q Do you recall the view of any particular company, company manufacturing asbestos products? You have told us generally what the view of the manufacturers was.

A The ones that I recall -- you could list them, those that sold asbestos-containing products in the one camp, and those that -- where you either sold or were trying

to break into the market of selling non asbestos-containing materials that were supposed to be -- at least purported to be, -- high -- suitable for high-temperature insulation took the other view.

Q Do you recall any instance when a manufacturer of asbestos products came to you with a nonasbestos substitute?

A I can't recall, no.

Q Did you ever deal with a Mr. Heard, Sanford Heard?

A Yes.

Q Do you know what company he was with?

A Let's see now. Owens-Corning, I believe.

Q Do you recall any conversations with Mr. Heard or Mr. Heard's office concerning the substitution of asbestos-free products for asbestos-containing products?

A Well, we certainly talked on the subject of that as well as other insulation materials. They noted fiberglass might do the same job. I'm not sure if Sanford Heard or someone else mentioned that calcium silicate and fiberglass could do the same job as asbestos. He may have. I don't remember. So that's -- since they sold asbestos-containing

products, I'd have to change -- if that were the case, it is a contradiction, but I don't know if he said it or not. It is possible.

Q I take it, then, you have no specific recollection of Mr. Heard or anyone in his office suggesting the change from an asbestos-containing product to an asbestos-free product?

A I can't recall specifically, no.

Q Do you recall discussing this with anyone from Johns-Manville?

A Well, Burt Tower from Johns-Manville would come by from time to time. He was the company rep that came by quite often.

Q Do you know where his office was?

A Somewhere in Virginia. I believe it was somewhere in Arlington, but I don't know exactly where it was. I've never visited his office. He always came to our office.

Q Do you recall having any conversations with Mr. Tower regarding the substitution of asbestos-free products for asbestos-containing products?

A We may have spoken in general terms. I would say we probably did speak in general terms, but I don't

recall a specific substitute that was made available.

Q Did you have any conversations with anyone from Raybestos-Manhattan regarding this issue?

A People from Raybestos-Manhattan came in from time to time. I shouldn't say from time to time; they didn't come in very often. I know they came in once or twice.

Q Do you recall the names of anyone from Raybestos-Manhattan?

A No, I don't.

Q Do you recall any conversations with them regarding a substitution?

A None come to mind at the moment, no.

Q Do you recall any conversations with anyone from H. K. Porter or Southern Asbestos --

MR. MOHER: I am going to object, Hadleigh. Concerning what? And isn't this repetitious of what happened yesterday?

MR. HOWD: You won't let me finish the question. If you let me finish the question, I do not think it is repetitious.

MR. MOHER: Finish the question.

BY MR. HOWD:

Q Did you have any conversations with anyone from H. K. Porter or Southern Asbestos concerning the substitution of an asbestos-free insulation product for an asbestos-containing insulation product?

A We certainly talked with H. K. Porter. I don't recall, again, whether they gave us any kind of a substitute. They brought in other materials, many of which were -- at least they said had a lower -- either a lower asbestos content or resulted in a lower concentration of asbestos fibers in the immediate environment, the atmosphere. But I can't recall a substitute being talked about.

Q How did you know that the product resulted in a lower concentration of fibers in the atmosphere?

A It was based on what they said.

Q Did they show you any tests or studies?

A The tests, to my mind, were not very valid.

Q Do you know by whom these tests were performed?

A They were performed by H. K. Porter, either their people or maybe people who they hired to -- you know, on a contract basis.

Q Why do you say the tests were not valid, to your

mind?

A To my mind, they weren't very rigorous tests. They were superficial. That was my determination.

Q Do you recall any conversations with anyone from Eagle Picher regarding the substitution of an asbestos-free product for an asbestos-containing product?

A Yes.

Q Do you recall when the discussion or discussions took place?

A Oh, well, Eagle Picher people came in from time to time fairly often, not so much in the beginning of my tenure but, oh, I'd say toward the middle or so; and, once they made the initial contact, they would come back or call. They had a material that was a high-temperature insulation material that I believe was cited in one of the federal specs and they claimed could do the job. I had some reservations about it.

Q What were those?

A Well, material to me seemed like it was friable and would chip easily and break off and result in particles, some of which could get into the atmosphere. That's the way it looked to me. But when we finally were able to have a

test of it -- you know, I took the opportunity on that one surface ship test that I mentioned earlier, and we used their product on that ship.

Q Do you know if Eagle Picher had performed any tests or studies to determine whether the product they were recommending released asbestos fibers into the atmosphere?

A Asbestos fibers?

Q Yes.

A I don't think their material had any asbestos in it --

Q Was this an asbestos-free or a lower content?

MR. KENNY: Let him finish the answer, please. Let him finish the answer.

THE WITNESS: Okay.

A To my knowledge, their material had no asbestos. It was asbestos-free.

Q Did you change a standard or specification so as to permit the use of this substitute product?

A I made no changes. It was an existing federal spec, as I recall, that already described that material.

Q Do you recall what that specification was?

A Not exactly. It started with an M and it went

on from there. 440 was it? I'm not sure.

Q Do you see that specification on the list --

A No. Wait a minute.

Q -- included in Defendants' Exhibit 1 -- isn't that 1? What is it?

A No, I don't see it on there. I don't think it is 466.

Q Excuse me; that was Defendants' Exhibit 5.

You do not see that specification on the list?

A No.

Q Do you know if the MIL standard 769 was revised so as to include that specification?

A I don't know.

Q I take it, then, you had no role in a revision of the standard so as to include that HH specification?

A That's right, I don't believe I did.

Q Do you know if the MIL standard was revised to include that HH specification?

A No, I don't know. I would have to see the revision.

Q Did you have any conversations with anyone from Claremont --

A Yes.

Q -- concerning the substitution of asbestos-free or low-asbestos products for asbestos-containing products?

A Yes, I did.

Q With whom, if you recall?

A Oh, I know the man, but I can't think of his name offhand. If you give me -- I can't think of his name offhand.

Q Do you know a Mr. Williams?

A There's a Williams -- there's a Frank Williams, I believe, from H. K. Porter, but Williams -- I don't think -- I don't recall a Williams from Claremont.

Q What do you recall of your conversation with the gentleman from Claremont regarding substitution?

A Well, he said the glass cloth could certainly withstand the rigors of shipboard use. He said that the rewettable -- so-called rewettable or that glass cloth that had already been pretreated with an adhesive was now such that it could be used in just the same way as asbestos rewettable cloth. And he was happy to supply products to Portsmouth Naval Shipyard -- he sold them to them, but he was happy to be there and available for that one task we had

which I believe I described to you yesterday.

Q The one in California?

A No, the one that involved the removal and rapidly replaceable insulation for cold water piping.

Q Oh, yes.

A He supplied -- we used his glass cloth for that job.

Q Do you know if the glass cloth that he was talking about was in use in shipyards at the time of your conversation with him?

A I think some shipyards used it. I don't know it as a fact, you know. I would have -- I don't recall it. But I, personally, had enough confidence in it to try it in that test. When that became -- the reason I used it was to determine whether it could, in fact, be used the way that the Claremont people said it could be used.

Q Did you do anything to the specifications or standards, suggest anything so as to encourage this substitution? By "this substitution" I am talking about substitution of this cloth for an asbestos-containing cloth.

A Well, I don't know if I actually did anything there or not. It was toward the end of my time there, and

I passed along the information, certainly, to Ed Cherobrier and Al Winer. That test was still in the process -- in a sense, in the process. People at Portsmouth Naval Shipyard were writing up a procedure for using it.

Q Do you recall any conversations with anyone from UNARCO concerning substitution?

MR. KENNY: When? When is this, Mr. Howd?

MR. HOWD: At any time.

A I don't recall a specific one. We may well have talked with them.

Q Do you recall any conversations with anyone from Westinghouse concerning substitution at any time?

A No.

Q Do you recall any conversations with anyone from Amatex concerning the substitution of asbestos-free or low-asbestos products for asbestos-containing products?

A I can't recall a specific one, no.

Q Did you ever meet a gentleman named Robert Roy?

A Rob Roy. He was with Claremont. He's the gentleman from Claremont.

Q You have just described a fiberglass cloth, and

you discussed the cloth with someone from Claremont. Is that Mr. Roy?

A Yes, it was.

Q Had you seen Mr. Roy before that time?

A Prior to -- I'm not sure what you mean by --

Q Is that the first time you met Mr. Roy?

A Well, he called first, and we had a couple of telephone conversations. Then he came down to our office two or three times prior to the test that I described, the use of his material. So I don't -- I don't know what you mean by is that the first time that I met him.

Q You met him, as I understand it, in connection with this fiberglass cloth discussion?

A Yes.

Q Had you met --

A But the discussion -- there was more than one discussion. I mean, it happened over a period of time.

Q Do you recall meeting with him or talking to him on any other topics or at any other times, other than what you have just described?

A Just about the Claremont products, primarily glass cloth.

Q Did you ever visit any of the facilities of the manufacturers of asbestos products?

A No.

Q We discussed briefly yesterday the Naval nuclear engineering organization. I think you indicated it was code 03 at NAVSEA?

A Yes, code 03 is the nuclear reactor directorate.

Q Do you know who is in charge of that code or that department?

A Yes, Admiral Rickover is the head man there.

Q Have you at any time had any communication or dealings with that department?

A Yes.

Q Do you have any files or records of your dealings with that department?

A No.

Q Do you know if that department plays any role in the drafting or revision of military specifications or standards?

A Yes, they do.

Q Do you know of anyone in that department who would be knowledgeable concerning the drafting or revision of

military specifications?

A I don't know anyone in the department right now.
We dealt --

Q Who did you deal with?

A I don't even remember the names of the people I dealt with. I dealt with some of the people when I was in water treatment. We traded information with their water treatment people, and when I was in the insulation job we had a few dealings with them. There was one letter that was signed by Rickover, that we talked about yesterday, which came over and questioned our progress on the asbestos situation --

Q When you say "asbestos situation" -- and I do not mean to interrupt you -- what do you mean by "asbestos situation"?

A Well, the use of asbestos as a high-temperature insulation material and an attempt to try to reduce the amount of asbestos in high-temperature insulation materials the best we could. This is what I term by the asbestos situation.

Q Okay.

A Getting back to his letter, we responded to it

and pointed out that we were essentially on schedule and we were doing the things that we had previously noted we would do. There was some -- it was -- we had noted them either -- on some piece of paper; it may have been an instruction or in a letter or something. But we were essentially on target at that time.

Q Did you receive any instructions from code 08, directing you to embark upon an asbestos-substitution program?

A I don't recall seeing that, no.

Q Have you ever heard the term "qualified products list"?

A Yes.

Q What is that?

A That's a list of manufacturers that have a product that is qualified by pretesting as described in a portion of the specification, to serve a useful purpose to the government.

Q How does one get on the qualified products list?

A To my knowledge --

MR. HOWD: Withdrawn.

Q How does a manufacturer of a product get on a qualified products list?

A To my knowledge, he must submit samples, valid samples of his -- of the products that are described by the specification to a testing facility indicated in the spec or agreeable to the government, and those products must, in fact, pass the tests that are written into the specification for qualified product testing purposes.

Q Did you or your department have anything to do with or play any role in the compilation of a qualified products list?

A Let's see. Compilation of the list?

Q Making up the list.

A We worked with 6124, and I don't know if they made up the list or if we made up the list. I believe 6124 made up the list, but we worked closely with them.

Q These tests that you mentioned -- and I think you indicated they were tests indicated in the military specification?

A Right.

Q -- were these tests ever performed by the manufacturers, themselves?

A I think so. I think that was allowed, but they had to submit test results and they had to -- as I say, they

had to conform to whatever the requirements in the spec were for qualified product testing.

Q Did the government ever perform these tests?

A Yes, I think that was allowed, also.

Q Concerning the asbestos insulation products, can you tell us what percentage of the time the government would test applicants for the qualified products list and what percentage of time the manufacturers of those products would do the testing?

MR. KENNY: If he knows.

A No, I can't tell you that.

Q If you know.

A I don't know.

Q Mr. Murad, what was the purpose of the qualified products list?

A The purpose was to have available to the government a list of manufacturers that could supply materials that the government or the Navy needed on rather short notice, if necessary. It was essentially to expedite the procurement process.

Q Do you know if the asbestos insulation products listed on the qualified product list had a market or were

used in an application other than a military application?

MR. DeANGELO: Object to the form.

A Certainly some did, because some were described in federal specs, and, when they were described in federal specs rather than a military spec, that meant that other people within the federal government used them.

Q Do you know if any of these products had a use in industry, outside of the government or the military?

MR. DeANGELO: Object to the form.

MR. CHRISTIE: Object to the form.

A I was told that they did.

Q By whom were you told that?

A Well, the various representatives --

Q Manufacturers?

A -- of the manufacturers, suppliers; right.

Q Did you receive any catalogs or sales brochures from these manufacturers?

A Yes.

MR. DeANGELO: Objection.

Q Did you ever receive a list from any of the manufacturers indicating which of their products met a particular military specification?

A We'd receive that information. I don't know if it would be on a list or if it would be mentioned as part of their sales description.

Q If you recall, was this in the catalog or a separate document?

A Usually, we received separate documents. I, personally, don't recall seeing -- well, there may have been a catalog here or there. Usually, though, it was -- the information I received was just that part that was of concern to me, so it was pulled out of a bigger -- it appeared to be pulled out of a bigger set. It looked like one or two sheets out of a looseleaf notebook, that the entire notebook would be the catalog. That's my understanding.

Q Do you recall any list correlating a manufacturer's products with military specifications or the specifications that the manufacturers claimed were met by these products?

A I don't recall a list of that type. We had information to that effect. I don't know how complete it was.

Q From whom did you receive this information?

A Well, the -- a variety of manufacturers and suppliers would send or give this to us.

Q How would you identify this information? What would you call it?

A I'd call it just general insulation information. If I were to -- you know, if I were to file it, I'd just put it in the -- in one or more of the folders, based on the kind of material, based on the --

Q When is the last time that you have seen these folders?

A When I left the job six and a half years ago.

Q Do you know where the folders are now?

A No. I think we ought to point out that these were -- I didn't take pains to put everything here in a specially good filing system, but what I did file I put, to the best of my knowledge, in that folder that was most appropriate.

Q I think we understand what you are saying.

A All right.

Q Do you recall what West Coast shipyards you visited?

A During that tenure?

Q At any time, Mr. Murad.

A At any time. Yes. I have been at Puget Sound, Maryland, Long Beach.

Q Did you ever go to Bremerton?

A Yes. That's Puget Sound Naval Shipyard.

Q When did you go there, sir?

A I have been there many times -- several times.

Q When is the first -- excuse me --

A The first time?

Q Yes.

A I believe the first time I went there was on the jet blast deflector coating problem, and that was in 1972. It may have been earlier. It may have been fall -- no, it wasn't -- gee. It may have been in the fall of '71 was the first time.

Q Can you tell us how many times after that you visited Puget Sound or Bremerton?

A I went several times on that job. As a matter of fact, the more I think of it, the more I think it was --

Q That job was the jet blast --

A -- maybe earlier. I may have gone in the spring of '71 to Puget, maybe around April or so.

It had to do with the -- we had tasked Puget Sound Naval Shipyard to try to select a coating material to protect jet blast deflectors from --

Q Yes, you explained that.

A -- F14 exhaust.

Q In your visits to Puget Sound, did you at any time have occasion to observe department 56, the insulation department?

A Yes, I stopped in there when I had time, as time permitted, as long as I was already there, to see their operation and --

Q Do you recall when that was, sir?

A It was at least one time, maybe more, on those visits primarily for the jet blast deflector problem.

Q Do you recall who was in charge of the department 56?

A No, I don't recall the man's name in charge of 56 at Puget.

Q What did you observe when you did go to the lagging department?

A I don't know if I can remember too well on that one.

Q Did you go on board ship?

A I may have. I may have.

Q Do you have any recollection as to what you observed on board ship?

A No. I can't remember what that part of the Puget -- as I say, it was primarily for the JED, and I seem to recall that they were -- they had a pretty good shop, but it is the best I can remember right now.

Q In your opinion, was that shop any different than any other insulation shop you had seen?

MR. SCHWARTZ: I object to the form of the question.

Q You can go ahead and answer.

A Oh, gee, I can't give you a very good answer. I really can't. It seemed to be pretty good. Something in the back of my mind tells me that it was fairly well run. I had that impression when I left, and I can't recall specifics.

Q Do you know why it was a pretty good shop?

A No. I'm trying to remember it.

MR. KENNY: I object to the answer.

A (Continuing) If I knew, I'd answer.

Q Did you have occasion to visit the shop, as

opposed to the shipboard operation?

A I believe I did go in to visit the shop.

Q Can you tell us what your recollection is as to your observations in the shop at Bremerton?

A Well, that's what I said, as I recall, and I know it is not a very good answer, it is not very definitive, but it is the best answer I can think of right now, because it is based on my memory. It left me with the impression that it was a well-run shop, but I can't tell you why, if things were neater or what. I just can't remember it that well.

Q All right.

A That's the best impression I have right now.

Q Do you recall any of the facilities in the shop at Bremerton, the equipment?

A No, I don't.

Q When did you go to Maryland?

A Well, Mary didn't -- I went to about two years ago. It had nothing to do with insulation whatsoever.

Q Did you have occasion to observe any insulation activities or shops at Maryland?

A No.

Q How about Long Beach?

A No. I went to Long Beach first in December of '72. It was after I had finished with the insulation work.

Q The coatings?

A Right. And I did not look at any of their insulation work at all.

MR. NOWINSKI: Hadleigh, we have been going an hour and a half.

MR. HOWD: I am finished. Thank you very much, Mr. Murad.

MR. NOWINSKI: Let's take a break.

(A recess was taken from 10:33 until 10:43 a.m.)

BY MR. SCHWARTZ:

Q Mr. Murad, I understand that you visited shipyards in connection with seeing how the instruction 5100.26 was being followed.

MR. SCHWARTZ: On the record, I would just note that I understand that Mr. Nowinski is not going to allow questions in that regard, and I would like to reserve the right, if the Court were to so order, to later inquiry.

Q So, putting aside visits in connection with

5100.26, am I correct in understanding that during the entire period of time you were associated with the Department of Navy, in terms of visits to West Coast shipyards, you visited Maryland, Long Beach, and Bremerton at Puget Sound, and those visits took place in the 1970's, as you just described them to Mr. Howd, who just questioned? Is that correct?

A That's correct.

Q Putting aside those shipyards and putting aside the shipyards specifically which you visited for purposes of the instruction or in connection with the instruction, did you at any time during the course of your association with the United States Navy visit any other shipyards?

A I visited other Naval facilities, but there's only -- there were only ten Naval shipyards at that time, and now there's only eight.

Q Directing your attention just to Naval shipyards, did you visit any Naval shipyards?

A Any Naval shipyards other than the ones that I already mentioned?

Q Other than the ones you mentioned and other than visits in connection with 5100.26.

A Philadelphia. Visited Philly many times.

Q What was the purpose of visiting the Philadelphia shipyard?

A Oh, well, Naval Ship Engineering Center, Philadelphia division, was there. I visited them many times for water treatment purposes. Naval Air Engineering Center was there, and I visited them two or three times for the jet blast deflector problem. We had a little work going with people at the Philadelphia Naval Shipyard for, oh, certain very quick tests. Visited for that purpose.

Q In addition to the --

A And, of course, since I left the insulation area, I visited Philadelphia many times for the design division at Philadelphia.

Q In addition to the yard at Philadelphia, have you visited any other yards?

A Well, that covers all the shipyards except Pearl Harbor, and I never visited Pearl.

Q At any timewhile you visited the Philadelphia yard, subject to the limitations which we have previously set forth, without regard to the purpose of your visit, did you have occasion to see men working upon asbestos or working with asbestos-bearing products?

A I don't know.

Q In addition, you visited Naval facilities, as distinguished from shipyards. Without regard to the purpose for your visit to the Naval facilities, did you at any time have occasion to see men working with or using asbestos-bearing products?

A Here again, I don't know. I may have.

Q But you have no specific recollection today?

A Right.

Q When you visited the Puget Sound or Bremerton shipyard, did you have occasion to meet Roger Beckett, B-e-c-k-e-t-t?

A I don't know. The name sounds a little familiar, but I can't say specifically.

Q With respect to the asbestos reduction program, was that program specially funded?

A Not to my knowledge.

Q Was it of a routine nature that your department would undertake such projects as the asbestos reduction program?

A Again you refer to the asbestos reduction program. I think I mentioned earlier that I never saw a

A Mine didn't say that, no.

Q As part of the pursuit of the task, did you receive written reports from any agencies of the United States Navy?

A I did not.

Q Do you know whether or not Mr. Cherobrier did?

A He may have.

Q Do you recall at any time, without regard to whom the reports may have been directed, seeing or reading such reports?

A I don't recall it right now. There may well have been some kind -- normally, there is a report when a field activity is tasked to do a job, and they do the job, they send some kind of a written statement of what the results were. Normally, that's done.

Q You do not recall receiving or reviewing any that your department --

A I didn't receive one, certainly. Whether there was one that I had seen, that's possible.

Q You have no specific recollection, again?

A Well, up to yesterday I didn't.

Q What occurred yesterday that --

A Well --

Q -- changed your thought?

A I didn't actually read the report, but I saw a letter from the Philadelphia Naval Shipyard, from the NAVSEC Philadelphia division, that I believe did address that. So I think there is one -- one or two.

Q Mr. Murad, who showed you the letter that you saw yesterday?

A One of the men here; I think this gentleman.

Q When you say "this gentleman," you are referring to Mr. Levy, who sits next to the court reporter?

A Right.

He didn't actually show it to me. He just -- speaking with Mr. Nowinski to see whether that should be reviewed today or -- I'm not sure what the subject was, but that was the -- that's when I -- that's what triggers my memory now on it.

MR. SCHWARTZ: Do you have a copy of the letter, Mr. Levy?

MR. LEVY: Yes.

BY MR. SCHWARTZ:

Q In addition to talking with Mr. Nowinski and Mr.

Levy, have you had conversations with anyone else?

A No.

MR. NOWINSKI: Excuse me, Peter --

MR. HOWD: Objection.

MR. NOWINSKI: For the record, at the conclusion of the proceedings yesterday, Mr. Levy showed me two documents, which I think he has now given to you, indicated his intent to examine the witness about them today and offered the opportunity to allow the witness to review the documents yesterday, which I declined; and that was the sum total of the conversation that I participated in. And Mr. Murad was a spectator to that conversation, not a participant.

BY MR. SCHWARTZ:

Q Mr. Murad, putting aside for a moment whatever documents you might have seen yesterday from Mr. Levy, did you, during the course of your association with the United States Navy, receive any reports in connection with the task which had been assigned to you --

A No, not that I recall.

Q -- or review any reports that others had --

A I may have reviewed some reports, these particular ones that came in to Ed Cherobrier.

Q Do you have any specific recollection, however?

A No.

Q On the other side, did you submit any reports in connection with the task?

A No, I don't -- based on what I think you mean by a report, no.

Q Any document in writing?

A We would write trip reports, depending on the trip. We didn't always write trip reports. Depending on the job, there might be a report written.

Q Did you submit or prepare any written reports concerning the status of the task which had been assigned?

A We wrote the letter in response to OS's letter addressing status.

Q Other than that?

A No.

Q Did you prepare any recommendations in writing which were forwarded to any other level or agency of the United States Navy?

A Only whatever changes we made to the specs, the

standard, the instruction and the Naval Ships Technical Manual.

Q Going back to the period of 1969 to 1972, could you describe for me the organizational structure of the United States Navy as it related to the Naval Ship Engineering Center?

A Well, CNO is chief of Naval operations, is the -- I consider it the headquarters of the Navy. They have a Navy Material Command that reports to CNO, and Naval Material Command had several systems commands reporting to them, one of which was -- probably the biggest one was the Naval Ship Systems Command. The others were Naval Air Systems Command, Naval Ordnance Systems Command, Naval Electronic Systems Command. There's a Naval Supply Systems Command which -- I'm not sure if that's under NAVMAT or not.

But, at any rate, we and Naval Ship Engineering Center would report to Naval Ship Systems Command, and, in turn, there were divisions of NAVSEC that reported to headquarters NAVSEC.

Q Would the Philadelphia division be one of those that reported to NAVSEC?

A Yes.

Q Would it be fair to assume that Exhibit 1, the OPNAV instruction to which we have been referring, would have been issued by the Chief of Naval Operations?

A No. This was a NAVSHIPS instruction.

Q I see.

A And that was issued by NAVSHIPS. It was signed out, I think, by 07. Well, it says on here it is an 07D instruction, signed out by Dolan, who was 07 at that time.

Q To the extent that the Exhibit 1 was issued by NAVSHIPS, would it be fair of me to assume, then, that whatever input you and your associates might have had would have gone up the chain, to be incorporated by a headquarters higher than you?

A Yes.

Q Do you know by which level of command the task was assigned?

A Which task are you referring to?

A The task on which you and Mr. Cherobrier worked in terms of asbestos reduction.

A No. I received oral direction from my immediate supervisor and his immediate -- second level and third level, just the --

Q In connection with the task -- and, just so I am not repeating myself, when I use that terminology I am referring to the work that you and Mr. Cherobrier performed --

A Okay.

Q -- did you have any contact with the Naval Air Systems Command?

A I did not, no.

Q Do you know whether Mr. Cherobrier did?

A No, I don't know if he did or not.

Q With the Naval Ordnance Command, did you or Mr. Cherobrier, if you know, have any --

A I didn't. I don't know if he did.

Q With the Naval Supply Systems Command?

A I don't recall having anything with them other -- well, we may have had something. Thinking about it now, yes, there may have been a little interface with Naval Supply Systems.

Q Do you know what the interface was in regard to?

A Well, to determine how much asbestos was available and try to get them to reduce the procurement of high-asbestos-content insulation.

Q Was the Naval Supply Command that agency of the

Navy charged with procuring material directly for use by Naval shipyards?

A That's, I believe, one of their missions.

Q Would the supply depot, for example, at Mechanicsburg, Pennsylvania, come under their supervision?

A I believe so.

Q In addition -- excuse me.

A I'm not a hundred percent sure of that.

Q This agency, in addition to procuring material for the United States Navy, was also responsible for inventorying and stockpiling material; isn't that correct?

A I believe so, yes.

Q Do you recall whether you had any contact with the Naval Electronics Command?

A No.

Q In connection with the task, did you have any contact with the Naval Environmental Health Center?

A No, I don't think so.

Q Do you know whether Mr. Cherobrier did?

A No, I don't know if he did or not.

Q Did you have any contact with the Naval Ship Research & Development Center in connection with the task?

A Yes.

Q What was the nature of that contact?

A I had asked or tasked the Annapolis laboratory to review asbestos-containing specifications, with the intent of taking whatever measures we could to reduce the -- or eliminate the high asbestos-containing materials in those specifications as types that were already in there.

Q Do you recall the name of the gentleman at the Annapolis laboratory with whom you worked?

A I can't think of his name offhand, no.

Q Was this task which you assigned to Annapolis reduced to writing by you?

A There was a brief description, yes; very brief.

Q Did Annapolis provide you written results of the tests which they had performed?

A No. There were no tests performed, per se. The job was to review the specifications.

Q Upon their review of the specifications, did the Annapolis facility provide written advices or responses?

A I didn't receive them.

Q Do you know whether or not any were so prepared?

A I don't know. I don't know. It was toward --

this also started toward the end of my tenure. They had something going in August, started in August of '72.

Q In other words, the specifications would not be changed until the Navy was assured that the change would still satisfy Navy needs; is that correct?

A That's correct.

Q With respect to the task, did the United States Navy, do you know, retain any independent laboratories or independent consultants to perform work in connection with the task?

A No.

Q With respect to the task, do you know whether or not the Navy worked with or contacted any other military service organizations of the other branches of service?

A I don't know.

Q I take it, however, that you did not have such contact --

A No.

Q -- with other military organizations?

A No, I didn't.

Q You are not aware of Mr. Cherobrier having such contact?

A I'm not aware of it; that's correct.

Q Did you have any contact with OSHA?

A I didn't have any direct contact with OSHA that I recall.

Q Do you know whether or not Mr. Cherobrier had any such direct contact?

A I don't know.

Q Did you have any contact with NIOSH or any agency of the Department of Health, Education & Welfare?

A I didn't.

Q Do you know whether or not Mr. Cherobrier did?

A I don't know if he did or not.

Q In connection with the task and during the time you were pursuing it, did you attend any symposiums or seminars conducted by any agency of the United States?

A I don't think so.

Q Did you attend any symposiums or seminars conducted by groups other than the United States?

A Well, I attended the ASTM meeting in October of '71, if you can consider that a symposium or seminar. It is more of a working group.

Q Where was that meeting conducted?

A At Hershey, Pennsylvania.

Q That was with regard to the setting of standards; is that correct?

A Setting of -- I guess you could -- if you are using the term broadly, yes.

Q I do not mean to put words in your mouth.

What was the purpose of the meeting at Hershey in October of 1971?

A The part that I was involved in--there were a lot of people there and they discussed a lot of different subjects; but the portion I was involved in had to do with insulation materials, and we discussed ways that we could improve testing of insulation materials; and, at least formally, that was it. And informally we -- when I say "we," various manufacturers' representatives and myself -- discussed, again, the same points that we had talked of many times, trying to reduce the amount of insulation -- of asbestos in insulation and perhaps eliminate it altogether.

Q Again, when you say "trying to reduce the asbestos insulation or eliminate it altogether," you are saying that in context of satisfying the needs of the United States Navy?

A Oh, yes, that's right.

Q In addition to the meeting of the ASTM in October of 1971, did you attend any other meetings conducted by non-U. S. agencies?

A No, I can't remember any.

Q Did you ever have occasion to meet a Mr. Holtgren?

A Yes.

Q Mr. Holtgren is or was associated with code 04F; is that correct?

A I believe he is now.

Q During the period of time you were working on the task, did you have occasion to meet with Mr. Holtgren?

A Yes. We spoke by phone. We may have met in person. I knew him from before.

Q During the time you were working on the task, with what department or command was Mr. Holtgren associated?

A Well, when I first started in '69, he was in code 6120 of NAVSEC. That's where I first met him.

Q During the --

A Later he took a job at NAVSHIPS and was directly working in the asbestos area.

Q Do you recall when Mr. Holtgren moved from NAVSEC

to NAVSHIPS?

A To the best of my knowledge, it was sometime in the spring or so of '72.

Q During the period of time Mr. Holtgren was at NAVSEC, code 6120, was he involved in the task or did you consult with him in regard to the task?

A No, I didn't consult with him. As far as I know, he wasn't involved in it.

Q Is it fair to assume, therefore, that the first time Mr. Holtgren, as far as you know, became associated with the asbestos program would be in the spring, 1972, when he moved to NAVSHIPS?

A When he moved to NAVSHIPS, whenever that was, right.

Q Did you have occasion during the period of time you were working on the task to meet or work with a Captain Rosenwinkle?

A I don't think I ever met him. The name, I believe, is -- he's the gentleman that was Commander Bartoo's boss, at least for part of the time; but I never actually met him. I think I spoke to him once or twice by phone.

Q Did you have occasion during the time you were

working on the task to meet or talk with a Captain G. M. Lawton, L-a-w-t-o-n?

A Lawton? That may have been Captain Barboo's boss. I mean Commander Barboo's boss, when Sam Barboo was a commander. It may well have been. I can't recall Sam Barboo's boss. I did meet him. I can't recall his name. It may well be Lawton.

Q But is it correct for me to assume that you have no recollections of Captain Rosenwinkle or Captain Lawton, other than that they may have been Commander Barboo's boss?

A Well, Rosenwinkle I know worked over at BUMED. I didn't actually meet him, but I spoke to him once or twice by phone. I remember hearing his name.

I did meet Sam Barboo's boss, the man who succeeded Rosenwinkle. I think his name was Lawton.

Q Did you have any conversations with Captain Rosenwinkle concerning the task?

A May have had some brief ones, but we primarily worked with Sam Barboo at BUMED on this task.

Q Do you have a specific recollection of your discussions with Captain Rosenwinkle today?

A No.

Q Do you have any specific recollection of your discussions with Commander Barboe, today?

A Not specific ones, no.

Q During the course of the time you worked on the task, did you have any occasion to meet or have discussions with an industrial hygienist, Paul J. Snyder, S-n-y-d-e-r?

A I don't know.

Q During the entire period of time you have been associated with the United States Navy, has there been a SUPSHIPS organization?

A Yes.

Q Is it the function of this organization, SUPSHIPS, to supervise the construction of ships to be acquired by the Navy at private shipyards?

A That's my understanding.

Q The communication with private shipyards would be through the SUPSHIPS organization; is that correct?

Mr. NOWINSKI: What communication?

MR. SCHWARTZ: Thank you. Let me withdraw the question.

BY MR. SCHWARTZ:

Q To the extent that Navy directives, instructions,

manuals, would apply to private shipyards, they would be issued through the SUPSHIPS organization; is that correct?

A That was my understanding, yes.

Q There would be SUPSHIPS personnel stationed at private shipyards in connection with the responsibilities given to it by the Department of Navy; isn't that correct?

A I don't know. I believe so, but --

Q Didn't you, during the course of your association with the United States Navy, have occasion to work or communicate with SUPSHIPS personnel?

A Yes.

Q And you communicated with SUPSHIPS personnel not only at the headquarters level but also those who were working directly with private shipyards; isn't that correct?

A At times, yes.

Q Did you not at times also have the opportunity to communicate with SUPSHIP personnel located at individual private shipyards?

A Yes.

Q When specifications were prepared, you stated that they were distributed to interested parties for comments before they were finally drafted and sent to the review

board; isn't that correct?

A Yes.

Q Did those interested parties include users such as the mechanical and various codes, boiler code, piping codes?

A Yes, oftentimes they did.

Q Were the specifications also distributed for comment to shipyards as interested parties?

A Not normally. There might be occasions when they would be, depending on the nature of the specification and the expertise at specific shipyards.

Q Would they also be distributed to SUPSHIPS?

A Not normally.

Q Do you know whether or not the specifications were on occasion sent to trade organizations representing shipyards that did business with the United States Navy, for comment?

A I don't know.

Q Do you know whether or not on any occasion you received or your associates received comments from shipyards or organizations representing shipyards concerning proposed military specifications or military standards?

A We may have. Anyone who uses a spec has the opportunity to comment on it, either using a form in back of the spec or just writing in a letter.

MR. SCHWARTZ: Can I see Exhibit 1, please?

Q Mr. Murad, directing your attention to page 7 of the document which has previously been marked as Exhibit 1, in addition to the designation FNL, which I think you have told us stands for SUPSHIP, could you tell us to whom else that Exhibit 1 was distributed, based upon the code or designation?

A Yes. All Naval shipyards.

Q That would be designated by the FNL?

A That's correct.

I don't know who this INA --

Q You are referring now, when you say you do not know, to --

A FNL. I'm not familiar with that acronym that follows that.

Q Would that be inactive ship facilities?

A Inactive ship facilities; that's what that is.

FB30 is Naval ship repair facilities, and FB34 is a fleet activity, accessible. On the back here -- that's the end of the actual distribution. Now, the copy to --

Q Let me stop at that point.

A Okay.

Q Is it normal Navy procedure that, as a document such as Exhibit 1 is sent out on an initial distribution list to other commands, they, in turn, would have their own distribution list and send the document, with endorsements, further down the chain of command, so to speak?

A They might do that. They might take it and reword it and issue their own field activity instruction.

Q The purpose, however, of that instruction, was for the information to be disseminated throughout the United States Navy?

A Yes.

Q On page 8 it says "Copy to" a number of organizations, and I wondered if you could tell us to which organizations reference is made.

A BUMED, Bureau of Medicine & Surgery. Looks like Coast Guard. NAVFAC is Naval Facilities Engineering Command. NAVSUP is Naval Supply Systems Command. NAVSAFECEN is Naval Safety Center. NAVMAT is Navy Material Command. OPNAV is Chief of Naval Operations.

Q You mentioned --

A There's a couple more on here. Do you want those?

Q I would appreciate it.

A NAVSEC, specific codes at NAVSEC, Naval Ship Engineering Center, code 6101, 6140, 6105E, 6131, 6153. Naval Ship Systems Command, C7D. Naval Ships Specialist Y2. I'm not familiar with that; you'd have to look at the standard Naval distribution list for that.

Q Mr. Murad, where it refers to NAVSEC 6101, that would be a code designation?

A Yes.

Q 6101 -- to what section --

A That's the section that I worked at.

Q -- would it refer?

A That's the materials development and applications office.

Q To what does 6040 NAVSEC refer?

A That's the machinery -- ship's machinery division.

Q To what does 6105E refer?

A That's the safety people.

Q To what does 6131 refer?

A 6131, habitability.

Q To what does 6153 refer?

A The piping people.

Q Next to the designation NAVSHIPS, it shows 07D.

To what does that refer?

A That's the code in 07 that Mr. Crawford worked in.

Q The code 07 -- what, generally, did that supervise?

A They had control of shipyard resources.

Q And the code 100, NAVSHIPS?

A That's not a code. That's a number. They sent a hundred copies to them.

Q The Exhibit 1 is signed by Mr. Nolan, who identified himself as deputy commander --

A Right.

Q -- for field activities. Would he be the one in charge of the department that had the ultimate responsibility for issuing that document?

A He signed it, so he issued that -- that was the office that issued it. He was an admiral, at least, and NAVSHIPS was organized such that there is one commander and several deputy commanders. He was the deputy commander in charge of shipyard modernization and management.

Q But he would not necessarily have been the author of the document?

A No. No, the author is designated in the identification block, the first page. JC is Jerry Crawford.

Q I note on the bottom of page 8 of document 1 there is a reference to a gentleman, or an individual, rather, by the name of L. Breidinger, B-r-e-i-d-i-n-g-e-r, and I also notice that on page 1, opposite the initials JC, there is also LB. Do you know what the reference to LB or Mr. Breidinger signifies?

A That's the secretary that typed it.

Q I see.

A The typist.

Q So the author, as far as you know, is Mr. Crawford?

A Right.

Q In connection with the task that was --

MR. NOWINSKI: Excuse me a moment, Peter.

(Discussion off the record)

BY MR. SCHWARTZ:

Q Mr. Murad, do you know whether or not any revisions were prepared for NAVSHEPS instruction 5100.00?

A No, I don't.

Q By which department is the list of qualified products maintained?

A NAVSEC 6124.

Q Which department was charged with the responsibility for incorporating military standards and military specifications into shipbuilding contracts which govern the acquisition of ships by the United States Navy from private shipyards?

MR. NOWINSKI: Can I have the question read back?

(The pending question was read.)

MR. NOWINSKI: Do you mean a department within the government?

MR. SCHWARTZ: Yes.

MR. NOWINSKI: I do not think you have established that that is the case.

BY MR. SCHWARTZ:

Q Can you answer the question, Mr. Murad?

A To my knowledge, there was -- the Navy Department; put it that way.

Q Within the Navy, was there one agency that was

charged with the responsibility of writing the contracts which were entered into with private shipyards concerning ships which were built to be acquired by the United States Navy?

A To my knowledge, there's a contracting office in NAVSEA now -- used to be NAVSHIPS -- would be the 62 people that actually in charge of writing contracts.

Q Earlier, when you said that there were certain military standards or military specs which were incorporated into shipbuilding contracts, this would have been the office that would have imposed the requirements for those specifications or standards in the contracts?

A They would write the contract. They would, of course, have to go back to many other offices in order to make sure that the government was getting what the Navy felt they wanted.

Q Which office or department of the --

A Just about --

Q Let me ask the question.

A Go ahead.

Q Which department or office would have requested of the contracting office that reference be made in

shipbuilding contracts to certain specifications or standards?

A A variety; many, many Navy offices get involved.

Q To the extent that MIL standard 709 would have been referred to in shipbuilding contracts, which office would have initiated the request for its inclusion?

A I don't know if I know the answer to that.

Q The purpose of incorporating the military standards and the military specifications into the shipbuilding contract was to ensure that the shipbuilder would meet the requirements of the United States Navy; is that correct?

A That's my understanding.

Q During the time you have been associated with the United States Navy, have you become acquainted with the phrase "government-furnished equipment"?

A Yes.

Q What is government-furnished equipment?

A Material that is provided by the government in connection -- to a contractor, in connection with a contract.

Q During the time you were associated with the task, did you become aware that the government was supplying pads which contained asbestos to private shipyards?

A I didn't know that, no.

Q Do you know that today?

A Well, no.

Q You have no knowledge; then, of the government supplying GFE pads containing asbestos to private contractors?

A That's correct, I didn't know and I still don't.

Q In connection with the task, did you or Mr. Cherobrier or anyone of whom you are aware visit any European shipyards?

A No, I never visited a European shipyard. I don't -- as far as I know, Cherobrier didn't. I did visit Holy Loch, but not in that regard. That's not European -- it is in Europe, but it is an American facility. I did speak with people at the British Ministry of Defense, but I didn't visit any of their shipyards.

Q In connection with the task, did you review any documents prepared by the British Ministry of Defense?

A I may have seen some.

Q Do you have any specific recollection today?

A No. No.

Q In addition to the task on which you and Mr. Cherobrier were working, are you aware of any other task

force or study groups concerning the use of asbestos by or for the United States Navy?

A Well, we interfaced, as we mentioned, with Philadelphia, and we spoke with BUMED. Those -- and, of course, the people at the various shipyards were concerned, and we had dialogues with them. I don't know of any others.

Q The answer is, other than what you have said, then--it would be you would not know of any others; is that correct?

A That's correct.

MR. SCHWARTZ: Thank you.

(Discussion off the record)

(A recess was taken from 11:43 a.m. until 11:58 a.m.)

MR. SCHWARTZ: Mark these.

(Copy of document on the letterhead of Department of Navy, Naval Ship Engineering Center, Philadelphia Division, to Owens-Corning Fiberglas Corporation, date-stamped 5 May 1969 and May 11, 1969, consisting of three pages, was marked Defendants' (Murad) Exhibit 11 for identification, as of this date.)

(Copy of document on the letterhead of Department of the Navy, Naval Ship Engineering Center, Philadelphia Division, to General Dynamics Corporation, Electric Boat Division, dated 30 April 1969, consisting of two pages, was marked Defendants' (Murad) Exhibit 12 for identification, as of this date.)

(A recess was taken for luncheon at 12:01 o'clock p.m.),

cOo

AFTERNOON SESSION1:12 P.M.

H E N R Y G . M U R A D resumed and testified

further as follows:

CROSS-EXAMINATION (CONT'D)

BY MR. SCHWARTZ:

Q Mr. Murad, I am showing you a document which we have already marked as Exhibit 11 for identification and also a second document which we have marked Exhibit 12 for identification. I would ask that you look at them and then tell me whether or not these are the two documents which you saw for the first time yesterday and to which you had earlier referred in your responses to my questions.

A They look like it. I only saw them for a moment yesterday.

Q Then let me ask you to look at them again. Without regard to if you saw them yesterday or not, have you ever seen these documents prior to coming to testify for purposes of this deposition?

(Discussion off the record)

THE WITNESS: Would you read the question.

Q The question, Mr. Murad, is whether or not, prior

to coming to testify for purposes of this deposition, you had seen either of those two articles.

MR. NOWINSKI: Articles?

MR. SCHWARTZ: Exhibits.

A I really don't remember.

Q You have no specific recollection of having --

A Of these specific letters, no.

Q -- seen those specific letters --

A No.

Q -- namely, Exhibits 11 and 12, for purposes of identification?

A That's correct.

MR. SCHWARTZ: Thank you. I have no further questions.

MR. STANGER: Can we identify which is 11 and which is 12?

MR. SCHWARTZ: Off the record.

(Discussion off the record)

MR. SCHWARTZ: Exhibit 11, for purposes of identification, is on the letterhead of the Department of Navy, Naval Ship Engineering Center, Philadelphia Division, Philadelphia, addressed to

Owens-Corning Fiberglas Corporation, subject being "Proposed Insulating Materials for Naval Vessels." It is a three-page document, signed by a J. W. Murdock, M-u-r-d-o-c-k. It contains two date stamps, the first being 5 May 1969 and the second being May 11, 1969.

The second document, Exhibit 12 for identification, is on the letterhead of the Department of the Navy, Naval Ship Engineering Center, Philadelphia division, Philadelphia. It is addressed to the General Dynamics Corporation, Electric Boat division, Groton, via the Supervisor of Shipbuilding, Conversion & Repair USN, Groton, from officer in charge, Naval Ship Engineering Center, Philadelphia division, subject "Shipyard Practices in Combating the Hazards Attending the Use of Insulating Materials; Request for Information Concerning; NAVSECPHILADIV Project FA-237," dated 30 April 1969. On the bottom there is a second date marking, 6 May '69. Two-page document, signed by J. W. Murdock.

BY MR. DeANGELO:

Q Mr. Murad, my name is Vincent DeAngelo. I represent Owens-Corning Fiberglas.

Mr. Murad, you indicated earlier that there was a task on a California ship to see if asbestos-free or non asbestos-containing high-temperature insulation could do the job that asbestos-containing insulation had done previously?

A Right.

Q Do you remember what the date of that task -- I am going to refer to that, by the way, for shorthand, as California task --

A Okay.

Q Do you remember what the date of that California task was?

A Sometime in either -- probably the summer -- it started, I believe, in the summer of '72.

Q Did this California task deal specifically with one individual ship?

A Yes.

Q Do you know the name of that ship?

A I can't remember the name of it, no.

Q Was the task successful?

A The task was not complete when I left. I understand that the insulation they used was not found to be satisfactory for shipboard purposes.

Q How did you acquire this understanding?

A I spoke to someone. Probably it was Al Winer, but someone in the -- still in that area.

Q Do you know in what regard the non asbestos-containing insulation was unacceptable?

A Well, from the way I understood it, it didn't -- it broke up too easily. It didn't withstand the rigors of shipboard stress, the movements of the ship, that kind of thing.

Q So it was more of a mechanical-type problem than an insulation quality type of problem; is that correct?

A Well, it is hard to separate the two. If the insulation breaks, then it is no good any more. If it is not there, obviously, it is not doing the job. The intrinsic R factor, you know, is fine.

Q Do you have any knowledge of what temperatures were reached in these high-temperature pipes?

A The water temperature inside -- inside the boiler, the water temperature was, for a 1200-pound boiler,

was 563 degrees, as I recall. That's the boiling point at that pressure. The outside temperature of the pipes, of course, is -- the fire side of the pipes -- of the boiler, rather, I should say -- reaches even higher temperature. They go up to about -- this is only a guess on my part -- around 900 to 1100 degrees.

Q Do you know if there were any representatives from your section or from the coatings division or section to ASTM prior to the time that you were a representative to ASTM?

A I don't know.

Q After you ceased to be a representative and with that section, do you know if anyone from the Navy took your place?

A No, I don't know that, either.

Q You indicated that when you first went to coatings you consulted some reference books regarding thermal insulation. Do you know where those books, if they still exist, would be located today?

A I borrowed them from the NAVSEC library.

Q That is in Arlington?

A Well, it was in Hyattsville, Maryland.

Q Do you know where it is today?

A Yes, it is in Arlington now.

Q You indicated that at various times trip reports were made out, and you didn't know whether they may have been kept or may not have been kept?

A Right.

Q Would you know how we would go about finding them, if they were kept?

A The only logical place that I can expect them to be would be in the insulation area now.

Q You may have gone over this; I'm sorry. On the 5100.26 instruction, you made trips to inspect at various shipyards, which I understand you are not going to be allowed to answer questions about. But did you make trip reports?

A There may have been some --

MR. NOWINSKI: Wait a minute.

MR. DeANGELO: I am prefacing -- I know you are not going to let him --

BY MR. DeANGELO:

Q Did you make trip reports on those trips?

MR. NOWINSKI: I told you we were not going to answer questions about these trips.

MR. DeANGELO: I was not sure that included

reports he made afterwards or only his inspection at that time.

BY MR. DeANGELO:

Q Have you ever visited the Electric Boat installation?

A No.

Q One point we went over: You listed various departments that dealt with asbestos insulation, and one of which was 6147, and I think you indicated they were boiler people?

A Yes.

Q Do you know any names of any personnel in that department during the period that you were with coatings?

A Well, Ted Lund was a section chief there. Allan Lee was the head of the 6147 division, I think they called it.

Q Did you have any discussions with these people regarding the asbestos reduction task that you were working on?

A Only a little, if we had any.

Q If you answered this earlier this morning, bear with me; I'm sorry. But did you review any documents prior to coming to testify today and yesterday?

A No.

Q Did you talk to anyone?

A Just government attorneys.

Q While you were in Annapolis and were dealing with, I think it was, submarine atmosphere, you indicated that you were not dealing with asbestos or dust content?

A That's correct.

Q What were you dealing with, just gaseous content of the atmosphere?

A That's correct.

Q You indicated that at coatings your department or your group at times -- your priorities were set by pressures that you would get from up above. Do you recall any pressure -- I use that word in the sense that you were using it, in the sense of pushing to get something done -- on the asbestos task?

A Yes. From time to time there was a need to address questions that arose on asbestos; for example, that 08 letter that was referred to earlier. And there are others, yes.

Q Can you describe for me the function of the chemistry and toxicology unit?

A Yes. That unit had three main purposes. One

was chemical cleaning -- chemical cleaning dealt with all the various methods of using chemical agents for cleaning purposes on board ship -- water treatment and fire-fighting chemicals. Water treatment I think I explained before. Fire-fighting chemicals, I think, are obvious from the term. The chemical, biological and toxicology interests were reviewed and kept up with, addressed. Cherobrier and Frank Lovell got involved in that.

Q At one point we were dealing with a document or a standard or specification -- I'm not sure which -- SS-C-466, and there were four grades, according to my note, a grade UG, a grade double A, a grade triple A, a grade triple A-M.

Could you tell me briefly -- you may have done it once; I'm sorry -- the temperature gradients that those grades were --

A I'd have to look in the spec again.

MR. LEVY: Do you want him to read it from the spec?

Q That's fine.

A Is that a good enough answer?

Q Pardon?

A Is that a good enough answer? I would have to

refer to the specification.

Q All right, would you refer to the specification.

A I'm looking through it now. I haven't found it in here.

Okay, here's something.

MR. NOWINSKI: Wait a minute. For the record, the witness has reviewed June 19, 1962 interim revision of SS-C-466C, marked Defendants' (Murad) Exhibit 3, and has identified responsive information on page 10. Mr. DeAngelo, I think the information you want is identified on that page.

The witness has also examined interim amendment of 17 June 1965 to spec SS-C-466E, marked as Defendants' (Murad) Exhibit 4, and has identified parallel information on page 8 of that document.

Q Mr. Murad, is it your understanding that the products listed as grades double A, triple A and triple A-M, or the products which would meet the specifications, are interchangeable products?

MR. LEVY: Interchangeable with what?

MR. DeANGELO: With each other.

A Could you repeat that, please?

Q Is it your understanding that products which would meet specifications double A, triple A, triple A-M, are interchangeable with each other?

A The various products that would meet that spec? I would say yes.

Q In the asbestos reduction program -- I am trying to understand your processes a little bit -- why was it not possible to just specify products which met grade triple A, which, as I understand your prior testimony, only had 10 percent asbestos, and specify out products meeting grades double A and triple A-M?

A Well, this is what we did do in the revision to 769, as I recall.

Q You indicated earlier that when you wanted to change a specification for insulation products, at least, after the Navy review cycle, you would send it to NIMA for their review and comments.

Do you know who initiated or who set up that procedure of sending proposed changes to NIMA?

A No, I don't.

Q This may have been asked, but, just to make sure:
Do you recall if you made any visit to any shipyard
regarding asbestos other than those visits which you made
for the purposes of inspecting or checking for instruction
5100.26?

THE WITNESS: Could you repeat that
question again, please?

MR. DeANGELO: Would you read it back,
please.

(The pending question was read.)

MR. NOWINSKI: Mr. DeAngelo, I think that
question has been asked and gone into quite
thoroughly earlier today, from every conceivable
context or perspective.

MR. DeANGELO: I appreciate your comments,
Mr. Nowinski.

MR. NOWINSKI: The point being that
considerable amount of time was consumed along
that line of inquiry, if I am not mistaken, and
I would like to avoid repeating it. Am I
mistaken that it was inquired into?

MR. DeANGELO: My notes do not reflect it

being inquired into in that way. I think it has been asked in various forms, and I would just like the answer to the question, Mr. Nowinski.

MR. NOWINSKI: It is yes or no.

Would you read back the question.

(The pending question was again read.)

A Yes.

Q At one point you were asked whether you knew if the Philadelphia shipyard were given any written instructions regarding asbestos reduction, and I believe your answer was that you did not know that as a fact?

A That's correct.

Q Was it your impression or is it your impression that they received written instructions regarding asbestos reduction?

A Yes.

Q How did you form that impression?

A Well, that's the normal way of doing business with field activity.

Q You testified that you had no direct contact with OSHA. Have you had any indirect contact with OSHA, limiting your answer regarding asbestos?

A Well, I had -- yes, I'd say indirect.

Q Would you describe the nature of those indirect contacts?

A I knew that OSHA was considering putting some conditions on the use and working with asbestos.

Q Very early on yesterday, I believe you testified that the first knowledge you had of an asbestos problem or an asbestos situation, whatever, not to use a pejorative term, was that there had been allegations of health hazards regarding the use of asbestos.

Can you tell me what your understanding was of the nature of those health hazards?

MR. NOWINSKI: Mr. DeAngelo, that was inquired into and fully answered yesterday with regard to an article published in The New York Times and/or The Washington Post, and I do not intend to keep this witness here having the same questions put to him that were put to him yesterday.

MR. DeANGELO: Mr. Nowinski, my notes indicate he was asked what his belief was of the nature of those health hazards, and you instructed the witness not to answer that question, and I

believe that question was posed by Mr. Montstream and it was not pursued any further. My question to him is what was his -- I do not remember what word I used, but I specifically did not frame it in terms of his beliefs, because you would not permit him to answer that question yesterday.

MR. NOWINSKI: Do you want to ask him what he was told or what he read about those articles?

MR. DeANGELO: I would like to ask him the question I asked him and have that answered. I wouldn't mind asking him what he read or what he was told afterwards, but I just want to know basically what his understanding of the nature of the health problem was. That is all I am looking for.

Could you read the question back, please?

(The pending question was read.)

MR. NOWINSKI: I will not let him answer that, Mr. DeAngelo. You can ask him what his understanding of the allegations that he testified to were.

MR. DeANGELO: May I ask the grounds for

your refusal to let him answer that question,
Mr. Nowinski?

MR. NOWINSKI: Yes. Oppression, burden,
undue consumption of time and lack of relevance,
in light of yesterday's examination on the same
subject.

Let's go off the record a second.

(Discussion off the record)

MR. DeANGELO: Let's go back on the record.

BY MR. DeANGELO:

Q Mr. Murad, what was your understanding of the
nature of the alleged health hazards of asbestos?

A My understanding of the nature of the alleged
health hazards of asbestos were that it caused lung disorders
and lung cancer.

Q That was your understanding in 1969; is that
correct?

A That's what the -- that's what was alleged, yes.

Q Did your understanding of the nature of the
alleged hazards of asbestos change between 1969 and 1972, when
you left the coatings unit?

A No.

MR. DeANGELO: I have no further questions.

Thank you.

BY MR. TEDFORD:

Q Mr. Murad, my name is Fred Tedford, and I am here for Pittsburgh-Corning. I only have a couple of questions for you.

MR. TEDFORD: First of all, for the record, I would like to reserve my rights to question into the area of inspections concerning the instruction.

Q Earlier, yesterday, you testified that at one time or another you spoke with representatives from Pittsburgh-Corning and at some time became aware of certain testing that they were doing in California. Is that correct?

A Yes, they were sponsoring the testing at the University of California.

Q Who advised you of that?

A I don't know who first advised me of it; Cherobrier, perhaps, someone at BUMED. But there was a representative of Pittsburgh-Corning that we spoke with.

Q Do you know the name of that particular individual?

A I can't remember his name.

Q You mentioned yesterday a Mr. Sinclair. Could it have been him?

A No, it wasn't; at least he didn't go into it in the detail that this other gentleman did.

Q What were you told concerning the testing?

A That tests were being run to determine -- to verify the work that Selikoff had performed.

Q What time frame are we talking about that you were first advised of this testing?

A I believe it was in early '70.

Q Were you advised of the results of this test?

A I -- yes, I learned of the results.

Q Who advised you of the results?

A I believe it was someone from BUMED.

Q What was your understanding of the results?

A My understanding was that the work more or less substantiated what Selikoff had reported.

Q Did you speak with anyone from Pittsburgh-Corning concerning those results?

A I don't think so, no.

Q What other communications did you have with representatives from Pittsburgh-Corning during the period of

time that you were in the coating unit?

A As I mentioned, Mr. Sinclair came by from time to time and --

Q What did he discuss with you?

A Oh, any type of problem that involved any of Pittsburgh-Corning's products.

Q To the best of your knowledge, was Pittsburgh-Corning involved in changes to different MIL specs?

A Well, they were represent -- I'm sure they were represented at NIMA and at ASTM, and in that way they could participate in specification changes.

Q Other than any involvement that you feel they may have had with those two organizations, do you have any other knowledge that Pittsburgh-Corning was involved in any changes to MIL specs?

A Changes? Well, there's always the indirect way of making suggestions during a conversation.

Q Were any such suggestions made to you by representatives of Pittsburgh-Corning?

A There may have been.

Q Who may have made those?

A Well, any one of the people that visited.

Q When you say "may have," does that mean that you do not recall?

A I don't recall specifically; that's correct.

MR. TEDFORD: I have no further questions.

BY MR. LEVY:

Q Mr. Murad, you mentioned Mr. Sinclair. Did you ever meet a Mr. Nesser from Pittsburgh-Corning?

A Nesser. The name sounds familiar.

Q James Nesser?

A Sounds familiar.

Q In addition to the people that you have already mentioned who you recall by name, would it be correct to say that there may have been other representatives of these various manufacturers who visited you and discussed the products but whose names you cannot recall at the present time?

A Yes.

Q Would it also be fair to say that the practice of manufacturers' representatives coming in to see you was one that went on virtually throughout the time that you were working in the coating section?

A Yes.

Q And that what was done during these meetings was to bring you up-to-date with changes and developments in the products that they were manufacturing, as well as other things?

A Yes.

Q Were they, in a sense, serving as a method by which the manufacturers brought information about technical developments that they were making to the attention of the government?

MR. MOHER: Object to the form.

MR. NOWINSKI: You can answer.

A I'd say yes.

Q This would be done both orally and by leaving the written material that you described, these product specification sheets and these sheets, out of the looseleaf book that you have mentioned?

A Yes.

Q I assume that you did pay attention to what they were telling you and you did read their material?

A Most of the time, yes.

Q In addition to -- I think you mentioned Mr. Tower from Johns-Manville?

A Right.

Q Did you ever deal with Mr. Charles Ernst?

A Ernst? That name sounds familiar, too, but I can't say with a hundred percent certainty. But the name does sound familiar.

Q How about a Mr. Windbladt, B. C. Windbladt?

A Windbladt. That could be, but it is vague.

Q Mr. Skelley?

A Skelley. That sounds -- yes, Skelley. I remember that name.

Q From Johns-Manville?

A I think he was from Johns-Manville, yes.

Q How about a Mr. Manahan?

A What was that last name?

A Manahan, from Johns-Manville.

A Could be.

Q Did you have any dealings with or meet a Mr. Fowler from Johns-Manville?

A Fowler?

Q Yes, Gus Fowler.

A That name sounds familiar, too.

Some of these people I met just once or twice

for -- occasionally only briefly or just by phone, so -- it does sound familiar, though.

Q How about a Bob Simmons?

A Simmons. That name sounds familiar, too.

Q Also from Johns-Manville. So, in the course of your activities, either coming in to see you or as a result of meetings at ASTM meetings, you had contact with a fair number of Johns-Manville people?

A Yes.

Q Did they also, in the course of their dealings with you, try to bring you up-to-date as to what technical developments were going on with Johns-Manville in the asbestos field?

A Yes, that certainly was part of the conversation.

Q You mentioned a couple of trade organizations. You mentioned NIMA at one point, and I think you were asked a question about the Asbestos Textile Institute. Do you remember that?

A I remember the question.

Q I think you indicated you did not remember whether you had any dealings with them?

A That's correct.

Q Did you ever have any dealings with a Mr. Sunberry?

A Sunberry? That name sounds familiar, yes.

Q He was associated with ATI.

A Okay.

Q Does that help you remember talking to him?

A I remember either talking to him or receiving some letter from him.

Q Do you recall whether that letter dealt with the specifications dealing with asbestos cloth?

A If he was from Asbestos Textile Institute, that would be a natural conclusion, but I can't remember the -- I can't remember it specifically right now.

Q Do you recall having any contacts with the Magnesia Silica Manufacturers Association?

A Could be. Could be. It wasn't much -- it is possible.

Q Do you remember a Marshal Allen?

A Marshal Allen? The name, itself -- you know, here again, it is vague, but it is certainly possible.

Q You discussed a little bit your dealings in ASTM. Was ASTM essentially a private group, as distinguished from a

government group?

A Yes, it was composed primarily of industrial-type people, but certainly there was participation by government.

Q I think you indicated that representatives of various manufacturers attended the ASTM specification meetings?

A Well, I only attended one meeting, and that meeting, yes, they were represented there.

Q Did that include representatives from Johns-Manville?

A Yes.

Q Could you tell me as best you can recall at this point what other companies that dealt in the asbestos product area were also at the meeting?

A There were quite --

MR. MOHER: Are you referring now to that one meeting that you just --

MR. LEVY: That is right.

A (Continuing) There were quite a number there. I know people from Eagle Picher were there. Most of the people we did business with were there, people whose names -- you know, the companies that have already been mentioned.

Q When you say the companies that have already been mentioned, you mean companies like Owens-Corning, Pittsburgh-Corning, Eagle Picher and H. K. Porter?

A That's right.

Q That group of companies?

A They were represented.

Q Was one of the primary purposes of ASTM to set standards for different products?

A Yes, to set standards and testing procedures.

Q Isn't it correct that, as you drafted or worked on the standards for the MIL specs, the ASTM standards were frequently incorporated into the MIL specs?

A Yes, they were.

Q If there was a change made in the ASTM standard that was specified in the MIL spec, would that have the effect of changing the MIL spec?

A It would have that effect, yes.

Q So it would be fair to say that, if ASTM, for whatever reason, decided to change its particular specification, that, in turn, would lead to a change in the MIL spec?

A It could happen that way, yes.

MR. MOHER: Object to the form.

Q I assume from what you said that you did not vote at the ASTM meeting that you attended?

A No, I didn't.

Q Just if we could take any one of the MIL specs -- if we take Exhibit 3, which is the cloth, thread and tape, asbestos, MIL spec, and if you refer to paragraph 2.2, would that be the paragraph that essentially incorporates the ASTM spec?

A 3.2 did you say, sir?

Q 2.2.

A 2.2. Yes.

Q All right, let me give you another one, the one on insulation felt, Exhibit 2. Would you also look at paragraph 2.2 there.

A Yes, that's it.

Q Is that kind of, in the sense of the format, then, a consistent position for the incorporation by reference of the ASTM standards?

A It is common practice to do that, yes.

MR. NOWINSKI: For the record, the document you just referred to is Exhibit 2?

MR. LEVY: Yes.

BY MR. LEVY:

Q One other thing that came up that I would like to clarify:

You were asked a question about various MIL specs that you had some input into, when the question of MIL I-2781 came up. That is the specification dealing with insulation, pipe, thermal. Do you remember that?

A Yes.

Q I think you raised a question as to whether that applied to asbestos?

A Right. As I recall, that was a fiberglass material.

Q Let me --

A Is that correct? Do you have that spec?

Q Yes, I do. I would like you to take a look at it. I have the one dated --

MR. LEVY: Oh, do you have it?

MR. NOWINSKI: No.

THE WITNESS: This is just a listing here.

MR. NOWINSKI: But I wanted him to look at the listing.

BY MR. LEVY:

Q I would just like you to look at it and be sure, so you could tell me whether it does or it doesn't.

MR. NOWINSKI: Off the record.

(Discussion off the record)

MR. NOWINSKI: Stan, the MIL spec set forth on page 1 of Exhibit 5 is MIL I-2781, and the specification you have just handed him is MIL I-2781D.

MR. LEVY: I am sorry. Are we talking about just the difference in the follow-on, a change, or are you saying that it is a different MIL spec?

MR. NOWINSKI: The document you have asked him to review is designated MIL I-2781D, dated 13 June 1963, superseding MIL I-2781C, dated February 15, 1960.

MR. LEVY: I am not sure if you are telling me something or just telling me that it is not --

MR. NOWINSKI: I am trying to point out that, from the face of the two documents, those

that you have just handed the witness, and Exhibit 5, which refers to MIL I-2781, without any suffix, they are different documents.

MR. LEVY: All right.

BY MR. LEVY:

Q If you take the MIL I-2781 series of military specifications, and using D, which is the one I have given you, which still precedes the period of the asbestos elimination program, could you tell from that whether the MIL spec applies to asbestos for pipe covering or whether it excludes asbestos?

A I don't see -- this is not the spec I was thinking of when I said fiberglass, now that I'm reading it. Just based on the fact that it is preformed, it doesn't specify in the specification the composition of the material. This is -- this is a performance spec. It identifies the kind of characteristics that we want to see in the material, without identifying the composition.

Q So would it, then, be correct to say, Mr. Murad, to the extent yesterday you indicated that 2781 was fiberglass and eliminated or excluded asbestos, that that answer should be changed?

A Yes, I was wrong. This is not a fiberglass spec, based on the fact that it is preformed pipe insulation. That doesn't mean to say that you couldn't use some fiberglass in it as part of the composition, but it is not just fiberglass.

Q Are you saying, then, to comply with MIL I-2781, the manufacturer had the option to put in a filler which could be asbestos or could be fiberglass or could be something else --

A That's correct.

MR. SCHWARTZ: Objection.

Q -- as long as it met the specifications?

MR. SCHWARTZ: Objection.

A I would say --

THE WITNESS: Can I answer?

MR. SCHWARTZ: Yes.

A -- it could be anything that met those performance characteristics.

Q Asbestos or nonasbestos?

A That's correct.

Q You were asked a whole series of questions yesterday by Mr. Howd about your observation of the method by

which pipe covering was installed. Do you remember that?

A Yes.

Q I think you were asked to try to fix the date, and I think the best you could do was to say it was probably sometime after 1970 but before the OSHA standards went into effect?

A That OSHA standard went into effect, I understand, around December of '71; is that right?

Q Right.

A That's probably about the right time period.

Q Having, I am sure, thought about this carefully all night, can you come up with any closer date than that?

A I didn't think about it that carefully all night. I didn't think about it at all, as a matter of fact.

Q I am surprised.

A I don't think I can pinpoint the time any better.

Q Was this -- and it may be that I just misunderstood what you said -- observation at Charleston, or were you saying that you were sick at Charleston and did not observe --

A No, I was sick at Charleston. I didn't observe anything at Charleston.

Q Could you tell me where you did observe the pipe covering going on?

A It was at one of the yards that I had visited, and it was on board ship. I can't remember which one it was. I went to several yards, went to those yards I had mentioned.

Q At least we could say with assurance that it was not at the Electric Boat shipyard; couldn't we?

A No, it was not at Electric Boat; that's correct.

Q Would it be correct to say that you have not been to the Electric Boat shipyard?

A Yes, it is correct to say that.

Q Is it also correct to say that you have not, yourself, had any personal contact with the Electric Boat personnel?

A I'd say that, certainly, as far as insulation is concerned; that's correct.

Q I am only interested in asbestos insulation.

A Yes, that's correct.

Q Have you ever had any written contact with the Electric Boat yard, dealing with asbestos insulation?

A Not that I recall.

Q I think you had indicated that you did not have

any with the Groton SUPSHIP office, dealing with asbestos insulation?

A I don't recall any with Groton.

Q You were also asked a couple of questions this morning about NIMA and the meetings that you had with some of the manufacturers' representatives in which they gave you their position. I think you said they told you at that time there was no better choice available, dealing with replacing the asbestos. Do you remember that?

MR. SCHWARTZ: Object to the form of the question.

A Right.

MR. MOHER: I will join that.

MR. DeANGELO: Objection.

BY MR. LEVY:

Q Did any of the manufacturers' representatives, during this period from '69 to '72, tell you that they were working on products which they claimed could contain asbestos but the asbestos would be locked in so it would not become airborne?

MR. MONTSTREAM: Objection.

A I think that point was brought up.

Q Do you recall who told you that they had developed a safe asbestos product?

A I'm trying to think who that was.

MR. DeANGELO: Object to the form.

MR. COONEY: Objection.

MR. MOHER: Objection.

MR. SCHWARTZ: Objection.

MR. STANGER: Objection.

MR. KENNY: Objection.

MR. NOWINSKI: If there is an objection to the form, I would like to know what the specific objection is, to give counsel an opportunity to correct the defect and create a viable record. Is anyone able to articulate the objection to form, or defect?

MR. DeANGELO: Yes. My objection to the form, at least, Peter, was that I do not believe that that is a fair summary of what Mr. Murad had just testified to.

MR. NOWINSKI: May we have the question read back.

MR. COONEY: Both questions.

(The record was read.)

A (Continuing) I don't know who it was.

Q Do you recall anybody ever providing you with any written material to try to establish that the asbestos would be locked in and would not become airborne when used aboard Navy ships?

A As I recall, there was a product that was a hard asbestos, but it was mainly for use in bulkheads as a fire door, forming a fire barrier.

Q What do you mean by a hard asbestos?

A It would be a milled product that would not be -- it would be similar to a slate material, which would not flake off very readily, if at all.

Q Is that something like a Millboard?

A Like a Millboard, that's correct, and that these things could be made into -- the same material could be made into a preformed pipe insulation.

Q By "pipe insulation" you mean a molded covering?

A Molded coverings. I believe -- to the best of my recollection, that was -- Johns-Manville had something along those lines --

Q How about in the --

A -- and --

Q I'm sorry. Go ahead.

A Okay. It was quite expensive, very expensive, and it was heavy.

Go ahead.

Q I was just going to ask you if anybody made the suggestion to you or told you that they had a product in the textile area.

A Not that I recall that was completely encased or encapsulated, such that it could not come -- so it would not come out. The only -- other than perhaps the cloth. The cloth could be covered with an adhesive or with paint.

Q Do you recall any manufacturers ever telling you that they had developed such a product in the cloth or textile area?

A There was information that was given to me to the extent -- to the effect that there was less airborne asbestos resulting from some of the products that were being developed, but not that there would be no asbestos at all.

Q So it was just a matter of reducing the asbestos that would become airborne?

A Yes.

Q There was a lot of discussion about the asbestos elimination program, and I do not intend to go into it with you. But is it correct to say that the goal of the Navy was to totally eliminate asbestos from the ships?

A That's the ultimate -- that was the ultimate goal, yes.

Q That still remains the goal, does it not, to totally eliminate asbestos?

A I don't know the answer to that. I imagine that is true.

Q As of the time you left, it was still --

A At the time I left, it was still the goal, yes.

Q The work you were doing was progressing toward that ultimate goal; was it not?

A Yes.

Q The reason that you accepted products with lesser asbestos content rather than total elimination was because you could not meet the mission?

A That's correct.

Q But the goal never changed; did it?

A The ultimate goal was still the same.

Q The reason for the goal was because of the health

implications and the health dangers associated with using the asbestos insulation?

A That's based on the information that was given to me.

Q Which you really have no reason to question; right?

A That's correct.

Q As far as the discussions that you mentioned -- I think you had one with Commander Barboo at BUMED -- did you ever have any meetings where BUMED people or people from Public Health Service made any type of presentation to you and to the others who were working on the asbestos elimination program, explaining to you why they felt that asbestos should be eliminated?

A No, I don't recall that, that kind of meeting.

Q So you just accepted it, and you went ahead from that point in attempting to eliminate the asbestos?

A Yes, that's correct.

Q You were asked a couple of questions this morning about the qualified products list. Do you remember that?

A Yes.

Q Is it correct to say that the government does not

compel any manufacturer to apply to be put onto the qualified products list?

A No, there's no -- there's nothing mandatory about it.

Q A manufacturer does it because he wants to do it?

MR. MOHER: Object to the form.

Q He wants to sell his products to the government; right?

MR. MOHER: Object to the form.

MR. DeANGELO: Object to the form.

MR. COYNE: Objection.

THE WITNESS: Shall I answer?

MR. NOWINSKI: Yes.

A I would assume so. That would be the natural -- that would be my -- that's my impression, yes.

Q Regardless of what the product we may be talking about, whether it is asbestos or whatever, the manufacturer always has the option, does it not, to either try to become a government supplier and to have a qualified product or not. The government does not impose any compulsion on them; does it?

A You're right. They are free to do it or not do

it, as they see fit.

Q When you worked on the asbestos elimination program, did you ever at any time test any of the respirators that were available to determine their effectiveness?

A No, I did not.

Q Do you know whether anyone in the government tested the respirators to determine their effectiveness?

A I don't know.

Q Were you familiar with the fact that Johns-Manville in 1969, 1970 and '71 was running tests to determine the effectiveness of and to develop an effective respirator?

A Not that I recall.

Q That was never called to your attention; was it?

A No, I don't recall it.

Q In all the meetings that you had with Johns-Manville personnel, no one ever told you that J-M was doing that?

A No.

Q Mr. Schwartz marked this morning these two letters from the Philadelphia division, Exhibits 11 and 12. One of the letters has an April of 1969 date and the second a May

of 1969 date. Right, sir?

A Yes.

Q Essentially, one letter is a letter to a manufacturer, asking them if they can come up with a product that either reduces or eliminates asbestos; would that be a fair statement?

A Yes.

Q And the second is to a shipyard, asking them about their work practices with regard to asbestos?

A Yes, that's correct.

Q Would these letters have been letters that were sent out as part of the effort by the Navy, as part of this asbestos elimination program?

MR. SCHWARTZ: I object. He testified earlier that he could not recall seeing them. How do you expect him now to testify as to --

MR. LEVY: Maybe with a little help.

MR. SCHWARTZ: I object to the line of questioning.

MR. LEVY: Okay.

MR. HOWD: He is talking about the type of letters, not those particular letters.

A It seems to me that these letters would be in line with the work that Philadelphia was tasked to do.

Q I just really want to ask you one question about the dates. You had said yesterday that you believe the survey, to try to find out about the asbestos that was in use and things like that, occurred in late 1968, I think?

A Right.

Q With the letters in front of you and having had at least a chance to read them and see the dates, does that lead you to change your view as to when the survey was conducted?

A I don't think it does. I'm still not a hundred percent sure when it was, but it is still my impression it was in the fall of '68. It would take time to complete the survey and then generate letters of this type.

Q So your feeling --

A I think it is about in line with what my thoughts were yesterday.

Q Your feeling would be that there had been some type of preliminary internal survey that preceded these letters which went out of the Navy to private concerns?

A That's right.

Q You were asked a couple of times about the tests or the test that Pittsburgh-Corning told you that they were doing, and you said at one point that you were told eventually that the results coincided with Dr. Selikoff's work; do you remember that?

A Yes, they substantiated Selikoff's work, to my knowledge.

MR. KENNY: It didn't coincide; he didn't say that.

MR. LEVY: I'm sorry, substantiated.

BY MR. LEVY:

Q Were you told this by Mr. Sinclair or someone else from Pittsburgh-Corning?

A No, I believe it was someone at BUMED. I believe that's who it was.

Q When you were told that they substantiated Dr. Selikoff's work, do you know what work of Dr. Selikoff the Pittsburgh-Corning test substantiated?

A Essentially, that the conclusions that Selikoff reached, that asbestos fibers eventually cause lung cancer.

Q In the course of the work that you were doing on the asbestos elimination program, did you ever make any

comparisons between the same products of different manufacturers, as to determine whether UNARCO's Unibestos or J-M's Thermobestos gave off more dust or less dust when it was worked?

A No, I didn't perform any test like that.

Q Do you know if anybody in the Navy did any tests comparing the asbestos release characteristics of different manufacturers' products?

A I don't know of any tests, no.

MR. NOWINSKI: Off the record.

(Discussion off the record)

BY MR. LEVY:

Q Mr. Murad, from the point of view of the work that you were doing on the asbestos elimination program, you had indicated that the goal really was to bring about total elimination of asbestos; right, sir?

A Yes.

Q When it became clear to you that you were not able to bring about total elimination of asbestos, was it at that point that the work began on the personal protection aspect; that is, to develop -- by trying to get the improved working conditions, to offset or to pick up, because you

couldn't bring about an elimination of the product, itself?

A Well, that all started prior to my tenure.

Q You just have no knowledge, then?

A Right.

Q You had been asked a number of questions about the military specification process, and I will try not to repeat any of the questions that have been asked. But would it be correct to say that, in developing the specifications, your office worked closely with industry?

A Yes.

Q And that there was a flow of information back and forth between your office and industry representatives in working on the specifications that were being developed?

A That's correct.

MR. MONTSTREAM: Object to the question.

MR. MOHER: Objection.

MR. DeANGELO: Objection.

BY MR. LEVY:

Q You have told us about the meetings that you had with various manufacturers. Would it be fair to say that during the time that you were working in this area the manufacturers were working on the development of new asbestos

products or improving existing products?

A I would --

MR. DeANGELO: Object to the form.

MR. SCHWARTZ: Yes, I object to the form.

MR. MOHER: Objection.

MR. COONEY: Objection.

MR. SCHWARTZ: I do not think you mean that.

MR. LEVY: Let me rephrase it if I do not mean it.

BY MR. LEVY:

Q Would it be correct to say that, during the period that you were working in coating, manufacturers brought to your attention the fact that changes had been made in their existing asbestos products?

MR. SCHWARTZ: Off the record for a second.

(Discussion off the record)

(The pending question was read.)

A Yes.

Q Did they also bring to your attention when new products were developed?

A Yes, they did.

Q In bringing these changes and new products to

your attention, was one of the purposes to alert you to the fact that the existing military specifications might not cover their products, either the new products or the changed products?

A That could be involved, yes.

Q When that occurred -- that is, the specification no longer met the existing products -- did you then have to begin work on trying to amend the specification to encompass these changes and these new products?

A Yes, that was the normal scheme of things, to -- that's one way that the specification was updated.

Q In drafting the specifications, either a new specification or a changed specification, would it be correct to say that you did consider the suggestions that were made to you by industry, both companies as well as the trade organizations, about the changes that should be made in the specifications?

A Yes.

MR. MONTSTREAM: Objection.

A (Continuing) We took their requests into consideration.

MR. MOHRER: Objection.

Q On occasion, did they even provide you with suggested changes in the language of the specifications?

MR. MONTSTREAM: Objection.

A Yes.

Q Did they also provide you with test results to show you why certain things that they were suggesting should be made?

MR. MONTSTREAM: Objection.

MR. DeANGELO: Objection.

A I think they did on occasion, yes.

Q And --

MR. NOWINSKI: Excuse me a moment. For the record, I want to state the Government's position with regard to these objections, since these questions and answers bear on the third-party complaints of the plaintiffs against the Government.

If you have an objection and if it is to the form of the question, you should advise the examining party what the claimed defect is, so that he has an opportunity to rephrase the question and cure the defect, if there is one;

and if you don't do that you are waiving your objection.

MR. DeANGELO: On behalf of --

Mr. MONTSTREAM: Oh, just a minute, Peter.

MR. JELLEY: That is not the rule. That may be your position, but it is wrong.

MR. MONTSTREAM: That is your position, but we --

MR. NOWINSKI: That is what I --

MR. MOHER: I concur with Mr. Jelley. That may be your position, but it is wrong, and I do not intend to be bound by it.

MR. MONTSTREAM: I do not agree to your position.

MR. DeANGELO: Owens-Corning does not look upon that as a waiver, Peter.

MR. LEVY: Could you read back the question.

(The question referred to was read.)

MR. DeANGELO: Excuse me, Peter. Owens-Corning would like the Government to state the basis of its interpretation, so that, if its

interpretation is incorrect, or the basis of its position, we would have an opportunity to make sure that every time we object to the form we go into details as to what it is; but, since it's made a position, Peter, I wonder if you could cite me some portion of the Federal Rules making that requirement.

MR. NOWINSKI: Mr. DeAngelo, I do not think I am under any legal obligation to continue your legal education or do your legal research for you.

MR. KENNY: We would like you to share your treasure trove, regardless.

MR. LEVY: Can I go on?

MR. NOWINSKI: By all means.

BY MR. LEVY:

Q Mr. Murad, you testified that, when drafts of the specifications were prepared, either you or, I think you said, code 6120 submitted those drafts to industry for review?

A To NIMA, yes.

Q Do you know whether they were also submitted to individual manufacturers as well as NIMA?

A There was -- they could be. It really depended on the specification. They could be reviewed by specific manufacturers to get their input.

Q If you take a specification like the one dealing with asbestos pipe covering, for example, would that have been sent to the companies that you knew made asbestos pipe covering, such as Johns-Manville and Pittsburgh-Corning and other companies?

MR. SCHWARTZ: Can I have the question read back, please.

(The pending question was read.)

MR. SCHWARTZ: My question is whether or not you are inquiring of personal knowledge or inquiring on some other basis.

MR. LEVY: I always assume that, unless I am told otherwise, a witness answers based on knowledge.

MR. KENNY: The witness' knowledge.

MR. LEVY: Unless he tells me that he is assuming or speculating, I think the witness is presumed to be speaking from his knowledge.

MR. SCHWARTZ: All right.

A I don't know if that one was sent out to industry or not, for review, but it wouldn't be out of the question for it to be. That's one technique that is used.

Q You have also indicated that comments would come back to you for review, and I think you had indicated that that frequently occurred with NIMA, that you would get comments from NIMA.

A Yes, it happened. I don't know how frequent, but it did happen, yes.

Q When that occurred, you understood that NIMA was a trade association, representing a number of companies in the asbestos industry; did you not?

A That's correct.

Q When you did get the comments back from NIMA, I assume that you read them and considered all of the comments?

MR. SCHWARTZ: Object to the form of the question.

Q Would it be correct to say that you did read the comments from NIMA?

A Yes, I did.

Q And you did consider what they had to say?

A Yes, I did.

Q Was that because you recognized that NIMA had a great deal of information, technical information, about the products that you were drafting the specifications concerning?

A Yes, we needed the manufacturers and suppliers -- we depended on them to supply our material.

Q To supply you with information that you did not have because of their technical capability and background?

A Sure; that's right.

MR. DeANGELO: Object to the form of the question.

MR. SCHWARTZ: Objection.

A (Continuing) The specification is used as a part of the procurement vehicle, and, unless the specification was one that was in fact describing an attainable material, it was no longer useful.

MR. MOHER: Objection.

Q Is that consistent with what you indicated yesterday, that the practice was to prepare the specification to cover existing products, that were already in existence? Right?

A Yes.

Q You mentioned the specs being used as a

procurement device. By that did you mean that one of the purposes of the specification was so that it would identify a particular product by weight or number of picks or something like that, so, if somebody saw that item, they would know that a particular Johns-Manville product or particular Pittsburgh-Corning product met the specification?

MR. KENNY: Objected to as being testimony; not as to form, but being testimony.

MR. JELLEY: I object to the form of the question. I do not think it is clear.

MR. LEVY: I will rephrase it if it is not clear.

BY MR. LEVY:

Q When you talk about it being used as a procurement device, was the specification used as a means of identifying existing products?

A It could be. It could be.

Q In a sense, in one sense, would it be correct to say that the specifications were very much akin to a manufacturer's own product list?

A That sometimes happened.

MR. SCHWARTZ: I object to the form of the

question.

MR. COYNE: Objection.

Mr. MOHER: Objection.

MR. LEVY: Did you finish your answer,
Mr. Murad?

A (Continuing) That sometimes happened.

Q When you got the comments back from NIMA or from
any of the other trade groups, did you also occasionally meet
with the executive secretaries or the members of the various
committees to discuss their comments?

MR. MONTSTREAM: Objection.

MR. DeANGELO: Objection.

A No, I didn't meet with them. I might make a
phone call.

Q To discuss their comments?

A We might discuss it by phone, right.

Q Was that part of this relationship that we have
been talking about between your office and industry, in order
to bring about a development of the specifications for the
existing products?

MR. MOHER: Objection.

MR. SCHWARTZ: I object to the form of the

question.

MR. MONTSTREAM: Objection.

MR. DeANGELO: Objection.

MR. COYNE: Objection.

A Yes.

MR. LEVY: I have no other questions.

REDIRECT EXAMINATION

BY MR. JELLEY:

Q In view of some of your answers to Mr. Levy, Mr. Murad --

MR. LEVY: Can I just stop you for a moment? I have one more question.

FURTHER CROSS-EXAMINATION

BY MR. LEVY:

Q I meant to ask this, but I forgot:

Mr. Murad, is there any specification that you have ever been involved in drafting, dealing with the asbestos area, asbestos insulation area, which contained a provision saying that warnings were not required or should not be included on any of the packages or any of the products?

MR. MONTSTREAM: Objection.

MR. MOHER: Objection.

MR. JELLEY: May I have the question read, please.

(The pending question was read.)

MR. DeANGELO: Object to the form.

MR. SCHWARTZ: Objection.

MR. MONTSTREAM: Objection.

A No, not that I recall. There was no -- that wasn't addressed in the specification.

Q The government, never prohibited the manufacturer from putting a health warning on any of their products; is that right?

MR. KENNY: Objected to.

MR. MONTSTREAM: Objection.

MR. SCHWARTZ: Objection.

MR. JELLEY: Objection.

MR. DeANGELO: Objection.

MR. STANGER: Objection.

MR. MOHER: Objection.

MR. CHRISTIE: Objection.

MR. COYNE: Objection.

MS. COLLINS: Objection.

A We didn't -- the specifications did not prohibit

anyone, any supplier, from putting any kind of warning on it.

MR. LEVY: Thank you. I have no other questions.

MR. NOWINSKI: Off the record.

(Discussion off the record)

(A recess was taken from 2:50 p.m. until 3:05 p.m.)

MR. NOWINSKI: I have no questions at this time.

REDIRECT EXAMINATION

BY MR. JELLEY:

Q Mr. Murad, in view of some of your answers to Mr. Levy, perhaps we'd better go over again what it was that your responsibilities were when you were in the coatings unit from 1969 to 1972 with respect to specifications. What were your duties?

A To keep them maintained in such a way as to provide the best materials that the government could use in the shipbuilding process.

Q When you say "the best materials that the government could use," what do you mean by that?

A I mean the most -- the optimum materials that

were attainable that were available from industry at the time.

Q When you are talking about the best or the optimum materials, were there criteria that you were using that permitted you to determine what the best or optimum materials might be?

A The criteria came mostly from industry, from what the manufacturers said was available.

Q Do I understand that you did not have any objectives in mind as to what you were looking for in a particular material?

MR. LEVY: Objection.

A No, of course not. The -- as far as insulation is concerned, it had the job of reducing the heat flow from one item to another -- from one point to another, and certain materials could be used for high temperatures and others could not. Certainly you could not use a flammable material for a high-temperature application. You had to take the temperatures into account; you had to take the outside environment into account; you had to take into account the stresses and strains of shipboard use, the availability, the quality and cost.

Q Cost was a factor; wasn't it?

A Well, in an overall way. You couldn't expect to practically make use of exotic, let's say, insulation materials on a large scale, the type of thing that NASA might use, for example, for a short -- for very limited applications that were not practical for use on board ship.

Q Who did the balancing that was required in order to balance or trade off things like cost or durability or things of that sort against other factors that you might be looking for?

MR. LEVY: Objection.

MR. HOWD: Objection.

MR. NOWINSKI: You may answer, if you know.

A I don't know if I know the answer to that.

Q Let me try it another way.

You said in answer to my last question that price was obviously a factor, that you could not afford to take the most exotic and expensive material for certain purposes; is that correct?

A Yes.

Q If price was a factor that had to be considered, who was the person or who were the people that did the consideration of price in drawing up a specification?

MR. LEVY: Objection.

MR. NOWINSKI: You can answer, if you know.

A Well, I don't know. I really don't know the answer to that.

The specifications were already there. They were -- had been issued and were widely dispersed when I started my tenure in that job. It was obvious that, certainly, these specifications were called out in the standard 769. If we were to come up with a new specification and that specification had described an item that was extremely expensive, it would not be cited in the -- either the standard or the follow-on specification -- ship's specifications, because of the price.

Q In other words, what you are saying --

A So, in that regard, price was taken into account. But we didn't stop to price out every insulation material when writing a specification or when making changes to a specification. It was only -- price and cost of the insulation was only a factor if it became obvious that it was an exorbitant price, way -- magnitudes of order greater than the going price range of the commonly-found insulation materials.

Q One of the other examples of factors that you gave in earlier testimony had to do with the durability of an insulating product, and I think you talked --

A Right.

Q -- of the possibility of the breaking off. Was there a word that you used for that? Was it friability that you --

A Yes, that's right.

Q Was it you who made decisions as to how much possibility of friability you were willing to accept in a specification in order to reduce the amount of asbestos, or was it someone else that made that decision?

A We carried out the -- maintained the characteristics that were already described in the specifications unless we had some information from industry citing improved characteristics.

Q When you got around to proposing a change in a specification and had written up that change or proposed change, you said that you circulated it to various people in the Navy. Is that correct?

A Yes.

Q You got comments back from them; is that correct?

A We might. We might simply get an agreement from them. By that I mean they would say they concurred.

Q But you did at some times get disagreement; is that right?

A Yes.

Q What kinds of disagreement did you get?

A They varied. I can't really be specific unless you -- unless you first spoke of a specific specification and then let me look at the file on it. But, if a change or a proposed change appeared to create a problem for one of the other Naval offices, then we would have to sit down and discuss the change and determine whether there was, in fact, a problem created or not, and, if there were a problem created, then we'd have to either drop that proposed change or amend it such that it alleviated the problem.

Q But you cannot recall at the moment any specific example of disagreement by one or another of the offices within the Navy Department?

A That's correct.

Q I think that you said that the ultimate step in the process of either preparing a new specification or changing an old one was to bring the either new specification

or proposed change before a board of review. Is that correct?

A Specification Review Board, yes.

Q Did the Specification Review Board at the time that you were in the coatings unit include both military types as well as civilians?

A It could. Most of the people on the review board were civilians. I don't recall a specific military man being on the board.

Q During the three years that you had experience with the -- what is the name of the board again?

A Specification Review Board.

Q -- that you had experience with the Specification Review Board, did you ever get turned down on a change or a spec that you proposed?

A Yes, I think I did.

Q And a change or a new specification would not be promulgated until it had been approved by the Specification Review Board; is that correct?

A That's correct.

Q You mentioned in answer to one of my earlier questions just now, when we were talking about price as a

factor in drawing up specifications, that, if there was something about a specification that caused it to call for material that was too expensive, it would not either get listed in a standard or get into the specifications for a particular ship. Is that correct?

A Right.

MR. LEVY: Objection.

A (Continuing) But let me say that that's my opinion.

Q I wanted to come back to each of those things. Do I correctly understand that when somebody, either the Navy or someone engaged by the Navy, designs a ship, the plans and specifications for the ship specify material meeting particular military specifications for particular places? Is that correct?

MR. LEVY: Objection.

A Yes.

Q So that it isn't until somebody calls for the use of material meeting a particular specification on a set of plans and specs that that material gets used; is it?

MR. LEVY: Objection.

A That's right.

Q The decision as to what military or federal specs will be referenced on the plans and specifications for a particular ship is made by someone in the Navy; is that correct?

A Could you repeat that, please?

Q Yes.

MR. JELLEY: I think it did not come out quite right.

(The pending question was read.)

MR. JELLEY: It did come out right.

A Well, it is made by the design agent.

Q It is made by the design --

A The design agent.

Q That is either someone in the Navy Department or someone engaged by the Navy; is that correct?

A Yes.

MR. JELLEY: I have no further questions.

RE-CROSS-EXAMINATION

BY MR. MONTSTREAM:

Q Mr. Murad, what, in your view, is the definition of loose bound asbestos?

A Loose bound asbestos? To me, that's a felt

material that is bound with wires and -- or strings -- and the asbestos fibers are only loosely held.

Q In viewing the government specifications, your background is as a chemist; is that correct?

A That's my training, yes.

Q In government purchases of something like sulfuric acid, would the government specification require that to be labeled as corrosive?

A I haven't seen the spec on sulfuric acid.

Q Have you seen the specification on any corrosive substance?

A I can't recall of any that I've actually seen the spec on, studied the spec for.

Q Are you aware of whether such a government specification would require the labeling of a container or package as corrosive?

A Well, I'd have to look at it. I haven't seen the spec, so I'd be just speculating, really.

Q Would your answer be the same as to a military specification for a corrosive?

A Here again, unless I worked on the spec, I would just be speculating. It would be just a guess on my part.

Q Where a product is flammable, would the government specification require a label that it is flammable on the container?

A Again, unless I saw the material you're talking about -- I haven't worked with that kind of spec. I'm trying to think if there has been one in which -- you are getting at, I believe, the packaging portion of the spec, and I am trying to search my memory if I recall if I worked on a spec that required a -- any special labeling. I can't think of one right now.

Q Where a product was explosive, would the federal specification or military specification require a label that that is, in fact, an explosive?

A Here again, it would be a speculation on my part to answer.

Q Have you seen any government specification or military specification which addressed the issue of labeling concerning contents of a cautionary nature?

A I don't know. I really don't know. I can't think of one, a specific one, right now.

Q What department of the government, for example, might be involved with the purchase of sulfuric acid in

concentrated form pursuant to a military specification?

A I don't know. I'm not sure, first of all, if there's even a military specification for concentrated sulfuric acid; and, if there were one, I would imagine -- it would only be a guess -- that would be in the Army Chemical Corps, would be -- that would be my guess.

Q Supposing it were merely a government specification for concentrated sulfuric acid. What department would be involved?

A Here again, I don't know the answer to it. The best answer I can give, probably the Chemical Corps.

Q If something were explosive, what department would we look to for the military specification or government specification?

A I don't know.

Q If it were flammable, what department of the government would we look for either a government specification or military specification, to examine those specs?

A I think there you'd have to address the specific material.

Q Let's take an example of gasoline.

A I don't know the answer to it. I'm certainly

not an expert in all of the various specifications that are put out by everybody in Washington and their field activities.

MR. MONTSTREAM: All right, I have nothing further. Thank you.

BY MR. MOHER:

Q Mr. Murad, again, my name is James Moher. I represent H. K. Porter and The Southern Asbestos Company. I just have one or two questions.

In response to inquiry by Mr. Coyne, you testified about a test that was conducted by H. K. Porter, and you indicated that, in your opinion, the results of that were not valid. Can you tell me when that test was done?

A To the best of my recollection, it was sometime in the 1970 to 1971 time period.

Q Can you tell me who conducted the test?

A I was told that H. K. Porter -- I think it was an employee at H. K. Porter conducted the test, or it may have been someone who was contracted to by Porter.

Q Do you know where the test was done?

A No.

Q Do you know what the test consisted of, what kind of a test was done?

A Well, the one, as I recall, the test, the material was a felt, asbestos felt, and it was one that was purported to be -- there were two materials, I think. One was a material that was supposed to be stiffer, a stiffer asbestos felt. And the test consisted of -- as it was shown to me, consisted of dropping a metal rod on the material.

Q Who told you about the test?

A I think it was an H. K. Porter representative.

Q You, then, were not at the test when it was conducted?

A No.

Q Anything you know about is is secondhand?

A That's true.

Q You indicated that it dealt with a felt product?

A Yes, right.

Q Were there any other products involved?

A There was another product that was another kind of loose bound felt, and that was supposed to be tighter than its predecessor and was purported to be such that it didn't give off as many asbestos fibers into the surrounding atmosphere.

Q Did Navy personnel assist the Porter people with

this test?

A Not to my knowledge, no.

Q You do not know where the test was --

A No; no, sir.

Q All you know about it is that it may have dealt with these two types of felt?

A Right.

Q Why did you conclude that the results were not valid, or on what basis did you conclude that?

A With the -- with regard to the felt that was bound--what I am saying is a loose bound felt but purported to be more tightly bound than its predecessors--I simply looked at it and kicked it around a little bit, waved it around, dropped it on the table, a very simple act, and quite a bit of felt came out.

Q Did you do any testing with any type of --

A Instruments?

Q -- instruments?

A No. It was just my observation, visual observation.

Q You have testified considerably about a California test that you were involved in, and I am not going to go into

it at great length. As I understand, the California test was an attempt by the United States Navy to determine whether or not a substitute for asbestos could be used on board ship; is that correct?

A Yes.

Q As a result of that test, did you conclude that asbestos could not be substituted?

A I, personally, didn't conclude that, no. By that time I was out of the job. But --

Q The results of the test, though, indicated that the substitution for asbestos did not work out?

A That's what I was told.

Q To your knowledge today, is the United States Navy still using asbestos on board ships?

A I don't know.

Q You had referred in your earlier testimony to a letter which you had received from H. K. Porter. Can you tell me when you received that letter from H. K. Porter?

A I don't know if I received it or the Navy received it. It had to do with procedures to be used when working with asbestos specifically, or particularly, let's say, in the ripping out procedures.

Q When did you receive that letter, or when did that letter come to your attention?

A Well, I understood that it was -- that formed part of the basis for at least a portion of the instruction that we had talked about earlier, the 5100.26.

Q Do you know this, Mr. Murad, as a fact, or is this just something that you have concluded, that that letter formed a basis of that --

A Well, I concluded that.

Q But you do not know of your own knowledge whether or not that letter influenced the drafting of the document referred to?

A I don't know if I can give you a fair answer to that question. As I recall, the letter spoke to different procedures, various procedures that were suggested for use when ripping out asbestos.

Q That is not my question, sir. My question is do you know of your own knowledge that that letter formed the basis for the standard that you referred to --

A I don't know it as a fact, no.

Q When did you first see this letter?

A I can't recall the exact time.

Q Do you know by whom it was designed?

A No.

Q But you do know it came from H. K. Porter?

A I recall seeing the Porter letterhead, yes.

Q Would this have been around the same time as that test was taken or performed, the H. K. Porter test?

MR. NOWINSKI: By "this" you mean the date of the letter?

MR. MOHER: Yes. I'm sorry.

BY MR. MOHER:

Q Let me withdraw that, and I will rephrase it for you.

A Okay.

Q Was the letter dated or did you see the letter on or about the time that this test was done by H. K. Porter?

A I don't know.

MR. MOHER: Thank you, Mr. Murad. I have no other questions.

MR. SCHWARTZ: Off the record.

(Discussion off the record)

BY MR. COYNE:

Q Mr. Murad, I just want to try and clear something

up that came up yesterday and again today, when Mr. DeAngelo was questioning you, specifically with regard to spec SS-C-466.

I will show you now what has been marked as Exhibit 4 for identification. You were asked some questions about this, and I believe you indicated that, upon looking at this, grade triple A asbestos cloth contained 9 percent asbestos; is that correct? Is that what you said yesterday?

A Yes, that's correct.

Q Is that your best recollection today, that it contained, at least in 1965, the date of this specification, 9 percent asbestos?

A Yes, that's what it states here.

MR. NOWINSKI: Could the record indicate what page of that exhibit is "here."

MR. COYNE: I'm sorry. The top of the right-hand column of page 1 is what the witness just referred to.

BY MR. COYNE:

Q Would you look at the cover page and identify what that is, if you know. It appears to me to be corrections of typographical errors, if you will, contained

in the specification. Would you agree with that?

A Oh, yes. Yes, it does.

Q Does this change your testimony with regard to triple A grade cloth?

A Yes, it does. Yes, it does.

Q What is the --

A This says on page 1, paragraph 1.2.1, grade triple A delete 9 and substitute 95.

Q Is this the first time that you have ever dealt with or even considered or looked at anything that had to do with grade triple A asbestos cloth?

A Oh, I don't think so. I probably dealt with this before, but it's been a long time.

Q As best you can recall today, at least with your recollection refreshed, at least in 1965, it required that it contain at least 95 percent asbestos?

A Yes, that's what the amendment says.

Q So your testimony yesterday and today with regard to the interchangeability, if you will, of 10 percent asbestos cloth with other cloths, as indicated in that specification, was incorrect --

A That's correct.

Q -- in view of that?

A You are right.

Q Thank you.

On those occasions, if there were any, where proposed specifications or modifications were sent to either NIMA or other manufacturers of asbestos products, isn't it true that the purpose of sending the specification to either NIMA or asbestos manufacturers was to determine the practicality, practicability, of manufacturing a product to meet the specification?

A That was one of the purposes, yes.

Q Wasn't that the sole purpose?

A Well, I guess it depends on what your term "practicability" is. We sent it to -- that's about right. We sent it to NIMA to find out whether or not the specification and/or the change as written could in fact -- did in fact, rather, describe the material that was available from industry.

Q Available, or one that could be manufactured?

A One that could be manufactured in the quantities necessary and delivered so that we'd have it both for new construction and for modernization and repair.

MR. COYNE: I have no further questions.

Thank you.

BY MR. SCHWARTZ:

Q Mr. Murad, am I correct in my understanding of your testimony that, to the extent that there may have been specifications involving labeling, you did not get involved with them?

A I can't recall one at this point.

Q You have no knowledge today of any, one way or the other?

A Right. I don't recall any dealing with insulation products that had that kind of provision.

Q But you, yourself, did not get involved with any specifications, as such, that dealt with labeling?

A I don't recall any.

Q You testified concerning ASTM. ASTM stands for the American Society for Testing Materials; is that correct?

A Testing & Materials.

Q With respect to that society, its membership included representatives from manufacturers --

A Yes.

Q -- and also from the government?

A Yes.

Q And consultants?

A They could belong, sure, I'm sure.

Q And representatives from universities and colleges and academia?

A That's correct.

Q And the specifications -- and drawing your attention to Exhibits 2, 3 and 4, which refer to the ASTM -- the purpose of the reference was to set forth means of testing products; isn't that correct?

A Yes. There's a -- normally, at least quite often, in a specification, there's a section that addresses the testing of the material described.

Q But my specific question was that the reference in those exhibits and in specifications to ASTM was to set forth the method of testing or a method of testing --

A Yes.

Q -- and it was not the purpose of the reference to specify a particular material or component. The purpose, as set forth in those specifications, was the method of testing; isn't that correct?

MR. LEVY: Objection.

A Yes, the testing.

MR. SCHWARTZ: Thank you. I have no further questions.

BY MR. DeANGELO:

Q I just have two questions for you, Mr. Murad.

On that California task, that ship where they used non asbestos-containing products, do you know the names of any individuals who would be able to tell us more about that experiment or whatever it was?

A Al Winer may be able to. It was a part of the PF project.

MR. NOWINSKI: What is the pending question?

MR. KENNY: Is there anybody who assisted in the California test.

MR. NOWINSKI: Could I have the pending question read back.

(The last question was read.)

A (Continuing) Joe Morelli was a person on the PF project that I talked to about it.

Q What is PF project?

A PF project was a work preliminary to the -- it is

part of the development of the FPG series of ships.

Q Do you know what products were used in that experiment on the California ship?

A It was Eagle Picher's high-temperature insulating material, essentially a rock wool insulation.

Q What kind of insulation?

A Rock wool, or a mineral wool. They are similar. It is either rock wool or a mineral wool material.

Q Do you know what applications this non asbestos-containing product was used for on the ship?

A High-temperature piping.

MR. DeANGELO: Thank you. I have no further questions.

MR. TEDFORD: I just have one question.

BY MR. TEDFORD:

Q In response to questioning by Mr. Levy--he showed you a MIL spec I-2741D --

MR. NOWINSKI: 2781D.

Q -- 2781D. Would you just look at that, please.

MR. NOWINSKI: Is this the same document Mr. Levy used?

MR. TEDFORD: It is not the same document.

We can dig through his, but for my purposes that would be satisfactory. If anyone else has an objection, we can get the original.

MR. MONTSTREAM: Is that marked for identification?

MR. TEDFORD: No, and I do not intend to mark it for the purpose of the question.

MR. LEVY: I think he should get the other one. There is no difference, but to avoid any confusion.

MR. NOWINSKI: Off the record.

(Discussion off the record)

MR. TEDFORD: Let's have that one marked, if I can get a copy.

MR. NOWINSKI: I will try to get a copy for you by tomorrow.

MR. TEDFORD: We will have that marked as the next defense exhibit.

(Copy of MIL I-2781D, dated 13 June 1963, consisting of 10 pages, was marked Defendants' (Murad) Exhibit 13 for identification, as of this date.)

BY MR. TEDFORD:

Q Mr. Murad, you testified that this was a performance specification, as opposed to a composition specification; is that correct?

A Right.

Q You indicated that specifications were used to describe existing products; is that correct?

A Yes.

Q You also testified that, with respect to this particular specification, asbestos and/or nonasbestos products could be used; is that correct?

A That's correct.

Q Would you tell me which nonasbestos products were in existence at that time which would fit that specification, if you know of any?

A The only ones I know of are a mixture of calcium silicate and fiberglass and perhaps -- I don't know this as a fact, but perhaps one of those mineral wools or rock wool.

Q Were these products used by the government for insulating high-temperature pipe?

A By the government?

Q By the Navy.

A By the Navy. On shipboard?

Q Yes.

A We used asbestos-containing materials at that time.

Q Why did you not use either of the other two?

A We were told that the others were too friable, they would break and they would not hold up to the rigors of shipboard use.

Q Who told you that?

A People in shipyards and also manufacturers.

Q Which manufacturers?

A I don't know if I can specify the exact ones, but there are a couple of them. Several of them mentioned the same thing, that only asbestos-containing materials had the strength and the -- well, say the durability to withstand the rigors of shipboard use.

Q That specification, the product that you were to use that specification for, was for shipboard use; is that correct?

A Yes.

MR. TEDFORD: I have no further questions.

MR. LEVY: I have no other questions.

BY MR. NOWINSKI:

Q Mr. Murad, I believe you testified earlier during your deposition with respect to MIL standard 769, which has been marked as General Dynamics (Murad) Exhibit 5 --

A Yes.

Q -- that this standard contained provisions regarding installation procedures for insulation materials; is that correct?

A Yes, that's correct.

Q Would you please review the document for me and identify those parts of the standard which contain such provisions? I don't intend to have you read them. Just simply identify where they are contained in the document.

A On page 10, paragraph 6, and there are several subparagraphs under 6. It goes on to page 11 and 12, and the top part of 13 discusses various installation procedures for all different types of insulation, hot surface, antisweat, refrigeration. I could go on, but that type of thing. It goes into the -- a very brief description under each one, of how you install the material.

Q Are those the installation procedures which you testified earlier were contained in MIL standard 769?

A Yes.

Q Mr. Murad, do you know the responsibility of the Supervisor of Shipbuilding, Conversion & Repair, Groton, Connecticut?

MR. KENNY: That is objected to --

MR. JELLEY: I object.

MR. KENNY: -- as being outside the knowledge of this witness.

MR. NOWINSKI: The question is whether he knew.

MR. KENNY: It is outside the knowledge.

MR. SCHWARTZ: Would you read the question back.

(The pending question was read.)

MR. MOHER: I will also object.

BY MR. NOWINSKI:

Q I am looking for a yes or no answer, Mr. Murad.

A I have an understanding, but I don't know as a fact.

Q What is your understanding based on?

A Well, my understanding is --

MR. KENNY: Objected to.

A -- that he protects the interests of the government --

Q No. What is your understanding based on?

A My understanding based on? Experience in the Navy, just in the -- in every capacity in the Navy. I worked there almost -- well, over thirteen years, and --

Q In what capacity during your service in the Navy did you acquire any understanding of the responsibility of the Supervisor of Shipbuilding, Conversion & Repair, Groton, Connecticut?

A At Groton specifically? Well, at all the SUPSHIPS, including Groton, during the time when I was involved in insulation and later when I was involved in design services branch for NAVSHIPS, later NAVSEA.

Q What is your understanding of that responsibility?

A Based on that, my understanding of the responsibility of the Supervisor of Shipbuilding is to protect the Navy's interest and make sure that the Navy is getting the kind of ship that has been contracted for from the contractor during the acquisition process.

That's it.

MR. NOWINSKI: I have no further questions.

BY MR. KENNY:

Q Sir, what is your understanding as to the safety of personnel on a private shipyard where SUPSHIPS is located?

MR. NOWINSKI: Do not answer that.

Would you read the question back.

MR. KENNY: I am going for sanctions on this one.

(The pending question was read.)

Q Where there is an office of SUPSHIPS there.

MR. NOWINSKI: I do not understand the question.

Q Do you understand it, Mr. Murad? If you understand it, that is the only issue.

THE WITNESS: Would you read that one more time?

MR. LEVY: I will object to the question.

(The pending question was again read.)

MR. NOWINSKI: I am not going to let him answer the question. I haven't the slightest idea what it means.

MR. KENNY: I asked the gentleman whether --

Q Do you understand the question, sir? You, not

the gentleman sitting to your left.

A I have my interpretation of it, yes.

Q Will you tell us what your understanding is.

MR. LEVY: Of the question?

THE WITNESS: Shall I answer the question?

MR. KENNY: No.

BY MR. KENNY:

Q What your understanding -- can you answer the question, sir?

THE WITNESS: Am I allowed to?

MR. NOWINSKI: No.

MR. KENNY: Yes, you are.

What?

MR. NOWINSKI: The question is asking for his understanding of the safety of personnel at Electric Boat?

MR. KENNY: Whether he has an understanding as to the responsibility of SUPSHIPS toward personnel in a private contract shipyard where SUPSHIPS maintains an office, yes.

MR. NOWINSKI: You are asking him for a legal conclusion?

MR. KENNY: No, I am not.

MR. NOWINSKI: Responsibility --

MR. KENNY: You have been asking him for understandings as to the responsibility of SUPSHIPS, and now I am taking it down from the heavens to the earth by bringing it down to a private contract yard.

MR. NOWINSKI: I am sorry, Joe, I think you are asking him for a legal conclusion which goes to the ultimate issue in this lawsuit, and, without laying a foundation to make his opinion or understanding on that issue at all relevant or material, I would not let him answer it.

MR. KENNY: Again I call your attention, Mr. Nowinski, that all objections except as to form are reserved for the time of trial. You have handcuffed this deposition for a day and a half, running on to two days. If you refuse to let me go through with this, I can assure you that as soon as I get back to Hartford I am going to see Judge Blumenfeld and see whether or not we can bring Mr. Murad up to Hartford, with

the appropriate sanctions and admonitions to do better the next time, Mr. Nowinski.

Now may I continue? You actually refuse to let him answer this question?

MR. NOWINSKI: The question you just posed, yes, I do.

MR. KENNY: All right.

BY MR. KENNY:

Q Let me ask you this, sir:

Do you have an understanding, Mr. Murad, as to what the responsibility of SUPSHIPS is in a given situation where they are located at a private contract yard in regard to the problem of personnel safety, of the personnel working at that yard? Yes or no?

MR. NOWINSKY: You may ask him that question and he may answer it.

MR. LEVY: The government or private yard personnel, or both?

MR. KENNY: I am asking generally, both.

MR. NOWINSKI: Wait a minute. Objection. Compound.

MR. KENNY: Let's not be teaming up here.

I mean, you said he could answer the question.
May he answer this question?

MR. NOWINSKI: You just changed the question.

MR. KENNY: No, I did not change it.

MR. SCHWARTZ: Can I have the question read back, please?

MR. KENNY: He asked for a clarification.
I merely asked him -- the question stands.

You said he could answer the question. May he answer the question? Could he write it on the wall?

MR. NOWINSKI: The question is whether he has an understanding of the legal responsibility of the Supervisor of Shipbuilding for employees of an independent contractor at the Electric Boat shipyard, Groton, Connecticut.

MR. KENNY: May the question be read, please?

(The pending question was read.)

MR. NOWINSKI: You may answer yes or no.

A An understanding of it? I have a feeling about

it, but --

Q All you have to say is yes or no. If you have a gut feeling about it, answer in the affirmative, sir.

MR. NOWINSKI: Wait a minute. No.

Do you want the question read back again?

THE WITNESS: Yes, I think I'd better. I think I'm thoroughly confused right now.

(The question referred to was again read.)

A I think I'll say no.

Q You realize you are no longer with the Navy?

A No, I know that. I'm trying to give a fair answer for everything; I really am.

Q Let me ask you, Mr. Murad: Are you familiar with the fact that SUPSHIPS does maintain offices where there are private contract yards?

A Yes.

Q You have described the responsibility of SUPSHIPS already --

A Right.

Q -- in response to Mr. Nowinski's question. Does SUPSHIPS, as such, have any responsibility whatsoever to the monitoring of work practices being carried on in the private

yard on Navy work?

MR. SCHWARTZ: Objection to the form of the question.

MR. MONTSTREAM: Objection.

BY MR. KENNY:

Q You can answer it, sir.

MR. NOWINSKI: Excuse me, Joe, I have a question about --

A I would --

MR. NOWINSKI: Excuse me, Mr. Murad.

THE WITNESS: Surely.

MR. NOWINSKI: Responsibility to his superiors?

MR. KENNY: Yes, SUPSHIP.

MR. NOWINSKI: You may answer.

A (Continuing) My understanding of that would be, yes, that they do have a responsibility.

Q What do you understand that they do have in the way of responsibility?

A Well, that's where I get into this fuzzy area that I don't know the specifics of.

Q In other words, it is not within the expertise

that you have been testifying to here for the last couple of days?

A That's correct.

Q Do you know what particular agency would be able to tell us that, other than the Superintendent of Ships?

A Well, I was going to suggest SUPSHIPS or code 07.

Q And code 07 is?

A Is the shipyard resources. I say shipyard resources; I'm not sure if that's the exact title, but they have authority over all the shipyards and over all the Supervisors of Shipbuilding.

Q Sir, let me ask you: Has it been your experience while you were in the Navy and also while you have been a civilian employee for the Navy that, when communications are issued, going out from whatever central headquarters there may be that is sending it out, whether it is BUMED or Naval Operations -- do the communications, from your experience, go to all the various different types of divisions of the Navy, including SUPSHIPS?

MR. NOWINSKI: Excuse me, Joe, I think you have mischaracterized his experience in the Navy. I do not think he has had any except as a civilian

employee of the Navy.

MR. KENNY: Excuse me, then. I thought that --

THE WITNESS: That's true.

A I've only been --

Q In your experience as a civilian employee in the Navy --

A Right.

Q -- grafting it on to that last question.

A Okay.

No, the distribution of documents goes to those organizations that the drafter feels has a need to have it, need to know it.

Q What about directives pertaining to safety, safety practices, work practices, safety rules, in general, without regard to asbestos?

MR. NOWINSKI: What is the question?

MR. KENNY: As to whether he --

BY MR. KENNY:

Q Going again, do you recall the last two questions?

A Yes.

Q Rephrasing it again, in your experience during

your fourteen or fifteen-odd years as a civilian employee in the Navy, what has been your experience with regard to directives that go out from any particular arm of the Navy, say in relation to safety as such; in Navy yards, in regard to whether SUPSHIPS gets notice of it?

A Usually, SUPSHIPS would get a notice of that, at least as an information copy.

Q Have you had any relationship or association with private contract yards where SUPSHIPS has been located, in your fifteen years with the Navy?

A A little over thirteen years, almost fourteen years.

But, yes, there has been a little.

Q It has not related to asbestos, I gather, in view of your earlier testimony; has it? Or has it?

A Well, there has been a little from one SUPSHIP --

Q Could you tell us what that consisted of?

A Newport News had asked some questions about asbestos-containing materials.

Q Could you approximate the time of the inquiry?

A Oh, I think it was sometime in 1971, I believe. It was that time period.

Q Do you recall the nature of the inquiry?

A The Newport News Shipbuilding was wondering what kind of high-temperature insulation they should use, in view of the fact that it appeared to them as if asbestos would become a problem.

Q How did you become aware of this communication? Could you tell us the mechanics as to how you --

A We got it through the type desk at NAVSHIPS.

Q In other words, the inquiry first went to NAVSHIPS and then to you, or what?

A I'm not sure if they went -- came to us and we -- I know that NAVSHIPS was involved, certainly.

Q Was a response prepared and sent out?

A No, there was a meeting held -- there was a meeting held at NAVSHIPS, and there were representatives of Newport News there, and they asked again the question of what should they do. They felt -- the people at Newport News felt that they -- uncertain what materials they should use if they were not to use asbestos.

Q Mr. Murad, in regard to Newport News, this incident you related, the first inquiry was a result of a letter, was it?

A No, this was --

Q Or was it?

A It was all oral.

Q It was all oral?

A Right, to my knowledge.

Q Was it reduced to writing at any stage or any phase?

A Not that I recall, no.

Q What was the ultimate result of this meeting? What advice was given, in other words?

A Not much advice was given. We simply stated that they had to abide by the -- whatever specifications were available.

MR. KENNY: Thank you. I have no further inquiry.

BY MR. NOWINSKI:

Q Mr. Murad, Mr. Kenny asked you about the distribution of Navy instructions and directives relating to safety and health and, in particular, the distribution to SUPSHIPS. Do you recall those questions?

A Yes.

Q Do the Navy instructions and directives which you

referred to in answering those questions relat to the safety and health of Naval uniformed and civilian personnel?

A That's who they are primarily directed towards, yes.

MR. JELLEY: May I have that question read back.

(The last question was read.)

BY MR. NOWINSKI:

Q Mr. Murad, do you know of any Navy instruction or directive related to the safety and health of employees of independent contractors of the Navy?

MR. KENNY: That is objected to, because again you are talking about asking somebody for a real legal conclusion. I mean, certainly, if an instruction goes out to SUPSHIPS, Mr. Nowinski, and it is at a private contract yard, it certainly, I could think, could well be argued that it is intended for every employee in that yard if it relates to safety.

MR. NOWINSKI: Mr. Kenny --

MR. KENNY: Certainly there isn't a wall around Groton.

BY MR. NOWINSKI:

Q Can you answer the question, Mr. Murad?

THE WITNESS: May it be -- can you reread that?

Q I can restate it for you.

Do you know if any Navy instruction or directive related to the safety and health of employees of independent contractors at shipyards?

A No, I don't.

MR. NOWINSKI: I have no further questions.

(Discussion off the record)

(Time noted: 4:15 o'clock p.m.)

HENRY GEORGE MURAD

Sworn to and subscribed before me

this _____ day of _____ 1979.

I N D E XWITNESS

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UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF WASHINGTON

003-000 2291

HUGH TEFFT, et al.,

Plaintiffs,

-vs-

JOHNS-MANVILLE, et al.,

Defendants.

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: C84-154M
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: C84-165M

UNITED STATES DISTRICT COURT
DISTRICT OF MAINE

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Crystal City, Virginia

Tuesday, April 3, 1984

Deposition of

HENRY G. MURAD

called for examination by counsel for the defendants,

Reported by Nancy Siegel-Deutsch

Ron Johnson Reporters

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2 Hotel, 1999 Jefferson Davis Highway, Crystal City,
3 Virginia, commencing at 2:15 o'clock, p.m., before
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WITNESS: Henry G. Murad

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P R O C E E D I N G S

Thereupon

Henry G. Murad

was called as a witness, and after being first duly sworn by the notary, was examined and testified as follows:

EXAMINATION BY MR. FELDMAN:

Q Mr. Murad, would you state your full name for the record, please.

A Henry G. Murad.

Q Where do you reside, sir?

A 9822 Bridleridge Court, Vienna, Virginia.

Q Before we begin, I wonder if we can go around the room and note our appearances for the record. My name is Richard Feldman.

I am with the firm of Rivkin, Leff, Sherman and Radner in Garden City, New York, representing the defendant, Pittsburg Corning, Incorporated, in both the Maine and the Washington State litigation.

MR. MULVEY: William Mulvey, Jr., representing the plaintiff in Federal District Court in Portland, Maine.

MR. HIGBEE: William Higbee, Brunswick, Maine,

1 representing Batl Iron Works in the jurisdiction of
2 Maine.

3 MS. WEISS: Deirdre Weiss, representing
4 Eagle-Pitcher.

5 MR. HAGERTY: Thomas Hagerty, of Mahoney,
6 Hogan, Heffler & Heald of Washington, appearing for
7 Owens-Corning Fiberglass, on behalf of Jack Montgomery,
8 of Jensen, Baird, Gardner & Henry, Portland, Maine.

9 MR. WAKINS: William Watkins representing H.
10 K. Porter Company, Incorporated, and Southern Textile
11 Corporation.

12 MR. MCCAULEY: James McCauley, Raymark
13 Industries, Inc.

14 MS. NACHBAR: Ann Nachbar, for the United
15 States.

16 MS. KROOP: Elizabeth Kroop, representing the
17 United States.

18 BY MR. FELDMAN:

19 Q Mr. Murad, what is your date of birth?

20 A September 29, 1932.

21 Q What is the highest level of education that
22 you have attained?

23 A Master's degree.

1 Q Where did you do your undergraduate studies?

2 A Utica College, part of Syracuse University.

3 Q What type of degree did you attain?

4 A Chemistry.

5 Q Do you recall the date that you received that
6 degree?

7 A 1954.

8 Q Where did you do your post-graduate studies?

9 A At the University of Maryland, College Park,
10 Maryland.

11 Q What did you receive your post-graduate degree
12 in?

13 A Chemistry.

14 Q When did you receive that degree?

15 A Fifty-seven.

16 Q Could you tell me the subject of courses you
17 studied with respect to both your undergraduate degree
18 and post-graduate degree?

19 A Oh, primarily in chemistry and physics and
20 math, plus the languages, in English, and the normal
21 liberal arts courses that are required.

22 Q Do you have any professional licenses or
23 certifications?

1 A No.

2 Q Are you a member of any professional society
3 or organization?

4 A No.

5 Q Have you ever been a member at any point in
6 time?

7 A From time to time, yes.

8 Q Could you tell me which ones?

9 A American Chemical Society.

10 Q When were you a member, sir?

11 A In the sixties, the early sixties. Let's see.
12 I was a member, a government member of the ASTM, American
13 Society of Testing and Materials.

14 Q When was that?

15 A That was from '69 to '72. Let's see. That is
16 the only two that come to mind at the moment.

17 Q You have indicated that you received your
18 post-graduate degree from the University of Maryland in
19 1957, is that correct?

20 A That is correct.

21 Q Were you employed subsequent to that time
22 period?

23 A Subsequent?

1 Q Yes.

2 A Yes, certainly.

3 Q What was the name of your employer?

4 A I worked for the Air Force at Rome Air
5 Development Center until 1963.

6 Q You worked there continuously from '57?

7 A I was in the Army for a short time, from
8 November, '57, to June of I guess it was late May of '58.
9 I was in the Army.

10 Then I went back to Rome Air Development
11 Center until September of '63, and I worked for Utica,
12 taught college level chemistry courses until May of '65.

13 I went to work for the Navy at what was then
14 called the Marine Engineering Laboratory in Annapolis in
15 May, '65, until November of '66.

16 I then went to work for what was then called
17 the Naval Ship Engineering Center in Washington from
18 November, '66 until about October, or maybe it was
19 November of '72, and then for Naval Sea Systems Command.
20 I guess it was Ship Systems Command.

21 They keep changing the names. I can't
22 remember what exactly it was called at the time. I think
23 it was Naval Ship Systems Command at that time, until

1 February of '79, then Air Force Systems Command until
2 November of '81, and my current job is with the
3 headquarters of the U. S. Air Force.

4 Q Let me take you back in time. You indicated
5 that you worked at the Marine Engineering Laboratories
6 between 1965 and 1966, is that correct?

7 A Yes, that is correct.

8 MR. FELDMAN: Would you note your apperaance,
9 Paul?

10 MR. ZEVNIK: Paul Zevnik, for GAF Corporation.

11 BY MR. FELDMAN:

12 Q Where are the Marine Engineering Laboratories
13 located?

14 A In Annapolis, Maryland.

15 Q Did you have a job title there?

16 A I was a senior chemist.

17 Q Did you work in any particular area of the
18 laboratory?

19 A In the fluid processes branch of the
20 machinery, ship machinery division, and fluid processes
21 branch had to do mainly with water treatment and
22 submarine atmosphere treatments.

23 Q What were your particular duties and

1 responsibilities then?

2 A I was in both of those, specific aspects of
3 both of those. I was working with means to condition
4 ship's boiler water and also to provide better submarine
5 atmosphere.

6 Q So, is it a fair statement then you were
7 involved in research and development in those two areas?

8 A Yes, that is correct.

9 Q Now, subsequent to that time period -- I
10 believe you said you worked at the Naval Ship Engineering
11 Center from 1966 to 1972, is that correct?

12 A That is correct.

13 Q Did you work in any particular unit or branch
14 of the Naval Ship Engineering Center?

15 A Yes. I worked for what they called the
16 materials development, I think it was called a division
17 at that time. They had a specific code, 6101-C.

18 At first I worked for CO2, and then later for
19 CO1. It was two different sections within a branch.

20 Q Did you work with any particular unit of the
21 materials development division at Naval Ship Engineering
22 Center during this time period?

23 A Yes, that is what I am saying. 6101-CO2 was

1 with the chemistry and toxicology unit. I believe that
2 is what they called it.

3 I worked there until about September of '70 --
4 let's see, '69, September of '69. Then, from September
5 of '69 to November of '72, I worked in the codings
6 section.

7 Q Now, with respect to the time that you worked
8 at the chemistry and toxicology unit, did you have a job
9 title?

10 A That was a chemical engineer.

11 Q What were your duties and responsibilities as
12 a chemical engineer?

13 A Primarily overseeing the work on shipboard
14 water treatment systems and fire fighting chemicals.

15 Q During this period of time, did you have any
16 responsibilities with respect to the drafting of
17 specifications?

18 A Yes.

19 Q Could you define for me the term
20 specifications?

21 A Well, it is a document that describes an item
22 which service wants to procure.

23 Q Are you familiar with the term military

1 specification?

2 A Yes, I am.

3 Q Could you define that for me?

4 A Well, that is a specification that deals with
5 an item that the military service wants to procure.

6 Q During the time period that you worked in the
7 chemistry and toxicology unit, did you have occasion to
8 deal with the preparation of military specifications?

9 A Yes.

10 Q And did those military specifications relate
11 at all to thermal insulation products?

12 A No, not in that job.

13 Q Did you have a job title at the time that you
14 worked in the codings unit between September of '69 and
15 November of '72?

16 A Yes. I was a materials engineer.

17 Q And what were your duties and responsibilities
18 as a materials engineer?

19 A I oversaw all kinds of aspects of shipboard
20 thermal insulation and also fire protection qualities,
21 and a few special projects that had to do with
22 specialized codings.

23 Q You mentioned that you were involved with

1 preparation of shipboard thermal insulation products, is
2 that correct?

3 A That is correct.

4 Q You were involved with the preparation of
5 military specifications for shipboard thermal insulation
6 products, is that correct?

7 A Yes, that is true. Also, some federal
8 specifications, which are essentially the same thing,
9 except they have a wider application.

10 Q During this period of time, did you become
11 involved in the preparation of military specifications
12 for asbestos containing thermal insulation products?

13 A I became involved in reviewing them and making
14 appropriate amendments as necessary, yes.

15 Q Between 1972 and 1979, I believe you testified
16 that you worked at the Naval Ship Systems Command, is
17 that correct?

18 A That is correct.

19 Q Did you have a particular job title there?

20 A I believe it was general engineer.

21 Q What were your duties and responsibilities as
22 a general engineer?

23 A Primarily to improve what is called the design

1 service allocation program, which was a critical segment
2 of the fleet modernization program.

3 What that means is we tried to improve a way
4 of making sure that all design aspects needed to
5 modernize the naval fleet were attended to so that we
6 could do a good job modernizing the fleet.

7 Q Between 1972 and 1979, did you have occasion
8 to work with military specifications for thermal
9 insulation products?

10 A No, I did not, not at that time.

11 Q Not at that time?

12 A No.

13 Q I believe you testified that between 1979 and
14 1981 you worked at the Air Force Systems Command, is that
15 correct?

16 A That is correct.

17 Q Where was that command located?

18 A That is at Andrews Air Force Base in Maryland.

19 Q Did you have a job title there?

20 A Yes. That was -- it was called general
21 engineer.

22 Q What were your duties and responsibilities as
23 general engineer?

1 A Primarily to be a coordinator of all aspects
2 of work having to do with a couple of different programs.

3 One had to do with a group of pieces of
4 equipment listed as other operational equipment. It had
5 to do with flight line equipment, generators, other kinds
6 of support equipment. Also, with civil engineering, with
7 fire fighting, tactical shelters, specialized pieces of
8 equipment for arresting aircraft quickly, called the
9 mobile aircraft arresting system, with techniques for
10 quickly repairing runway surfaces.

11 I should say, it also had to do with Air Force
12 uniform clothing.

13 Q Between 1979 and 1981, did your job
14 responsibilities have anything to do at all with drafting
15 or review of military specifications?

16 A No. Occasionally I would refer to one, but I
17 didn't draft any at that point.

18 Q Am I correct that you testified that from 1981
19 to the present you were with the U. S. Air Force?

20 A That is correct.

21 Q And where are you presently stationed?

22 A Pentagon, Washington.

23 Q Do you have a particular job title there?

1 A General engineer.

2 Q What are your duties and responsibilities as
3 general engineer?

4 A Again, basically coordinator of all aspects of
5 the kinds of things I mentioned before, plus chemical
6 warfare.

7 Q From 1981 to the present, have you been
8 involved at all in the drafting or review of military
9 specifications of thermal insulation products?

10 A No.

11 Q Now, I believe you testified that between
12 1969, when you were with the codings unit, you were
13 familiar with the preparation of military specifications
14 for thermal insulation products, is that correct?

15 A That is correct.

16 Q You were familiar with military specifications
17 for asbestos containing insulation products, is that
18 correct?

19 A Yes.

20 Q Are you familiar with the process by which a
21 military specification for thermal insulation product, be
22 it asbestos containing or nonasbestos containing product,
23 was in fact drafted?

1 A Yes.

2 Q Could you tell me the name of the entity or
3 entities that would be responsible for the actual
4 preparation of that specification?

5 A Responsible for preparing the spec?

6 Q Yes.

7 A Of course, the Navy was responsible for
8 preparing the specs that they were interested in.

9 Q Anybody in particular in the Navy?

10 A Sure. I was involved, primarily involved in
11 drafting changes to specs. Of course, it had to be
12 worked in a corporate way so that we would start it
13 going, and it would have to go through all pertinent
14 offices for their review and concurrence and any changes
15 would have to be made.

16 Q Let me ask the question this way: Was a
17 technical code or a program engineer designated to have
18 responsibility for the drafting of a military
19 specification?

20 A Yes.

21 Q Would that depend upon the type of material
22 that was involved with the specification?

23 A Type of material or equipment, as the case may

1 be.

2 Q Do you have knowledge as to the way in which
3 that specification was actually drafted, in other words,
4 the initial procedure that was undertaken by the
5 technical code of the program engineer prior to the time
6 the spec was actually drafted?

7 A Could you repeat that again? I think I know
8 the answer, but go ahead.

9 Q I would like to trace your knowledge from the
10 time that the program engineer was given responsibility
11 to draft that initial spec.

12 Did he make use of any particular information
13 in his preparation of the spec?

14 A Yes. You made use of whatever information was
15 pertinent. Sometimes that would come from industry,
16 sometimes it might come from the users who were actually
17 making use of the equipment. In our case, it wasn't
18 equipment so much as material. But, in general, it could
19 be for the equipment users.

20 Q Would any information come from any
21 governmental agency?

22 A If it were available, yes.

23 Q Once this information was gathered from these

1 various sources, would the specification be drafted in
2 any particular format?

3 A Yes. There was a format that was adhered to,
4 and that was laid down by an office whose prime
5 responsibility was to coordinate all aspects of
6 specifications.

7 Q Could you tell me what that format consisted
8 of?

9 A Well, you looked at the references, other
10 items that were in effect that were applicable. You
11 addressed either the performance or the design
12 characteristics of the item at hand, set forth any
13 specialized provisions, identify -- usually identify what
14 the function of the item being described was intended to
15 be, and would identify packaging provisions.

16 That is basically it.

17 Q Now, once this specification was put into this
18 formatted form, was the specification sent to any
19 particular entity or entities?

20 A Yes. It was sent to all pertinent offices
21 within the Navy department --

22 Q Continue your answer.

23 A -- sister service, other government offices

1 that would have an interest, and to industrial
2 organizations that were legitimately involved.

3 Q Why would the specifications be sent to the
4 various entities that you have just testified to?

5 A Well, they all had an interest in it, and any
6 changes potentially impacted their business or their
7 areas of interest and therefore they were given an
8 opportunity to review it and make sure that their
9 interests were satisfied.

10 Q Is it a fair statement that the specification
11 would be sent to them for their comments?

12 A Oh, yes. They were for review and comment.

13 Q And would comments have been made from the
14 various entities to the person who initiated these
15 specifications?

16 A It went through the specifications section
17 that I mentioned, for record keeping purposes, and then
18 it would eventually end up with an action officer, like I
19 was for that particular discipline, for working.

20 If there were any comments that needed
21 resolution, it was up to the action officer responsible
22 for amending or revising the specification to work it out
23 with those people that made the comments.

1 Q Was the person who had responsibility or the
2 entity that had responsibility for resolving these
3 comments free to accept, reject or ignore comments
4 received from various entities?

5 A There are two types of comments. One was an
6 essential comment. The other category was a nonessential
7 comment.

8 The nonessential comments could be rejected
9 without even conferring with the commentor. Normally, it
10 wasn't done out of courtesy, but it could be done.

11 The essential comments had to be resolved.

12 Q Who had prime responsibility though for the
13 resolution of those essential comments?

14 A Well, the action officer.

15 Q Now, assuming that the officer resolved
16 comments, was the specifications sent to anybody or any
17 entity for approval?

18 A Yes. It went up through that specification
19 office and then it also went before a review board made
20 up of senior people who were from each of the important
21 disciplines within the Navy to insure that their
22 interests were protected.

23 Q Was that review board formally known as the

1 Specification Control Board?

2 A I think it was the Specification Review Board.
3 It may have been Control Board.

4 Q Do you know when the Specification Review or
5 Control Board first became established?

6 A I am guessing at this.

7 Q I don't want you to guess. Do you have any
8 specific knowledge?

9 A I can't pinpoint the date.

10 Q Can you give me an proximate date?

11 A Approximately, about 1970.

12 Q 1970?

13 A Yes.

14 Q Can you tell me what the function of the
15 Specification Control or Review Board was in 1970?

16 A Well, to insure that the interests of the Navy
17 in their major areas of discipline were in fact protected
18 so that a change to a specification did not adversely
19 affect one aspect of the Navy's work that the drafter may
20 not have thought of.

21 Q And did the Specification Review or Control
22 Board have the ultimate authority to cause a
23 specification to be issued?

1 A Yes. It was necessary for you to get it
2 approved by the Specification Review Board, as I recall.

3 Q To your knowledge, is the Specification Review
4 or Control Board in existence today?

5 A I don't know.

6 Q Back in 1970, do you recall what the
7 composition of the board was?

8 A Well, it was made up of senior people from
9 each of the NAVSAC, Naval Ship Engineering Center codes
10 or offices, and also from select offices at Naval Ship
11 Systems Command.

12 Q To your knowledge, was the Specification
13 Review or Control Board in existence throughout the
14 1970s?

15 MS. KROOP: The question was asked and
16 answered.

17 MR. FELDMAN: He said he wasn't certain as to
18 whether it was in existence today, and he did testify
19 that he believed it was established in 1970.

20 BY MR. FELDMAN:

21 Q My question was: Do you know whether in fact
22 it was in existence during the 1970s?

23 A I don't know. I don't know. It was there

1 while I was at NAVSAC, at Naval Ship Engineering Center.

2 BY MR. FELDMAN:

3 Q That was between 1972 and 1979?

4 A No. Between 1969 and 1972.

5 Q It was in existence at least during that
6 period?

7 A At least during that time, and I believe
8 sometime after that. Whether they are in existence now
9 or if they went out of existence at a particular time,
10 that, I don't know.

11 Q Are you familiar with the term qualified
12 products list?

13 A Yes.

14 Q Let me withdraw that question for a second.

15 Dealing with the Specification Control Board,
16 on occasion, would a specification which had been issued
17 have cause to be revised?

18 A I am not sure if I understand that question.

19 MS. KROOP: Vague question.

20 BY MR. FELDMAN:

21 Q Subsequent to the time that a specification
22 was issued, would the need sometimes arise for that
23 specification to be revised at all?

1 A Again?

2 Q Yes.

3 A The second time in?

4 Q Yes.

5 A That is conceivable, sure.

6 Q Under what circumstances would it be revised?

7 A New information would come in. For the same
8 reason it was revised the first time, the same kind of
9 thing could cause it to be revised again and again and ad
10 infinitum.

11 Q And each time that it was revised, would the
12 revised specification, as drafted, be required to be sent
13 to the Specification Control Board for approval and
14 issuance?

15 A I believe they had a mechanism whereby the
16 Control Board determined, through their secretary,
17 whether it was significant enough of a change to warrant
18 their time.

19 Q And assuming that it was significant enough?

20 A If it were not significant?

21 Q Assuming it was significant enough.

22 A They would get involved again.

23 Q And they in turn would have the ultimate

1 authority for approval and issuance?

2 A That is correct.

3 Q Are you familiar with the term qualified
4 products list?

5 A Yes.

6 Q Could you define what a qualified products
7 list is?

8 A It is a listing of products and manufacturers
9 of those products that have been predetermined to be of
10 satisfactory quality for government procurement.

11 Q To your knowledge, did any of the thermal
12 insulation products that you had familiarity with have
13 then associated with this a qualified products list?

14 A I believe there were some. I can't pinpoint
15 specific examples right now.

16 Q Is it a fair statement, though, that not every
17 military specification had a qualified products list
18 associated with it?

19 A That is correct.

20 Q Could you tell me the process or the procedure
21 by which a manufacturer got his name onto the qualified
22 products list?

23 A Well, he would apply for it, essentially

1 giving the description of his product and asking that it
2 be reviewed and approved for listing on the qualified
3 products list.

4 Q Was that application presented in written
5 form?

6 A Yes.

7 Q To whom would it be presented?

8 A That would go into the specifications section.
9 There was a mechanism whereby they looked into the
10 quality of that particular product, and I am not
11 thoroughly familiar with all the procedures that were
12 used.

13 I did not get involved in actually testing
14 products to determine whether they were suited or not,
15 but there were people who did do that, I believe.

16 Q From your answer, is it a fair statement that
17 before a manufacturer got his product on a list, that the
18 manufacturer was required to undergo testing procedures?

19 A Yes, that seemed normal to me.

20 Q And are you familiar with any of the testing
21 procedures that the manufacturers had to undergo before
22 their product was listed --

23 A The only one I was involved in --

1 MR. HIGBEE: Can you qualify the time period?

2 MR. FELDMAN: I will ask Mr. Murad.

3 BY MR. FELDMAN:

4 Q During what period of time were you familiar
5 with the procedure by which a manufacturer got himself
6 listed on a qualified products list?

7 A This was while I was working for 6101-C01, in
8 the water treatment and fire fighting chemicals.

9 Q That was between September of '69 and November
10 of '72, is that correct?

11 A No. That was between November of '66 and
12 September of '69. It was for a particular fire fighting
13 chemical that was new at that time. It was called
14 aqueise film forming foam, APFF.

15 Qualified products list was at least
16 considered, and I believe drawn up for that item, and
17 testing was done.

18 Q Do you know where these tests were conducted?

19 A I believe the tests on those products were
20 conducted at the Naval Research Lab.

21 Q Was that Naval Research Lab located in any
22 particular facility?

23 A Yes, in Washington.

1 Q Washington, D. C.?

2 A Yes, that is the name of the facility, Naval
3 Research Laboratory. And a particular -- I have
4 forgotten the particular department.

5 I remember the names of the folks of all.

6 Q Were test results generated as a result of
7 those testing procedures, to your knowledge?

8 A Yes, I believe they were.

9 Q Were test results sent to any particular
10 entity?

11 A They had to be sent to the person that was
12 involved in writing the spec. I wrote the spec for that
13 and we had to make sure that the test results were in
14 line with the required characteristics as identified in
15 the spec.

16 Q And assuming that the test results were in
17 line with the specification as written, would approval be
18 given for that product to find its way onto the qualified
19 products list?

20 MR. MULVEY: Objection. You are now changing
21 from a specific to the general, I believe, and I think
22 you are confusing the witness and the record.

23 It is my understanding that this transcript is

1 for presentation before a jury.

2 MR. FELDMAN: That is correct.

3 MR. MULVEY: The record is totally unclear at
4 this point in terms of whether or not you are talking
5 about the time period when he was dealing with a specific
6 product in 1966 to 1969 and whether you have switched to
7 it generally.

8 MR. FELDMAN: I will ask Mr. Murad.

9 BY MR. FELDMAN:

10 Q Were you talking about a specific product or a
11 general procedure by which products or manufacturers of
12 products found their way onto a qualified products list?

13 A I was referring to the specific case that I
14 was involved in. I understand that that was the normal
15 procedure.

16 Q During this entire time period that you have
17 just testified to?

18 A Yes.

19 Q Are you familiar with a program known as the
20 asbestos elimination or substitution program?

21 A Well, I don't think it was identified by that
22 specific title, but there was an effort used that had as
23 its goal to reduce the asbestos content of high

1 temperature insulation material.

2 Q Do you know the name of the entity that had
3 primary responsibility for that program?

4 A Probably our code, 6101-C02.

5 Q What was the overall function or goal of the
6 program as you understood it at that time?

7 A Can I make a correction?

8 Q Yes.

9 A 6101-C01.

10 Q What was the overall goal of the program at
11 that time?

12 A The overall goal was to reduce the amount of
13 asbestos in high temperature insulation material and to
14 reduce the amount of asbestos dust in areas that we know
15 which asbestos was used.

16 Q Do you recall the formal name of the program
17 you have just testified to?

18 MS. KROOP: Asked and answered

19 MR. FELDMAN: He said he wasn't certain. He
20 said he was not certain whether or not the program was
21 known by the name of asbestos substitution or
22 elimination.

23 My question to him was whether he knows the

1 formal title of that program.

2 THE WITNESS: No, I don't.

3 BY MR. FELDMAN:

4 Q Do you know when that program was first
5 established?

6 A Specifically, I don't know the exact date. I
7 became involved in insulation materials and, of course,
8 asbestos containing insulation materials in September of
9 '69.

10 It was an ongoing effort. To my knowledge, it
11 started roughly a year before that.

12 Q In 1968 or thereabouts?

13 A Yes.

14 Q What was your particular function in that
15 program?

16 A Again, that effort had to do with all aspects
17 of shipboard insulation, including high temperature
18 insulation that contained asbestos, trying to improve
19 insulation and what it did and how it interacted with
20 everything else, and that applies to all the insulation,
21 including all the thermal insulation, including the
22 asbestos containing high temperature insulation, in every
23 way, looking at the specs, trying to improve them,

1 looking at procedures, trying to improve them, answering
2 any questions that came up for problems that may have
3 been surfaced by any party that had a legitimate concern,
4 including the people that used them.

5 Q For how long a period of time were you
6 involved with the program that you have just testified
7 about?

8 A About three years.

9 Q About three years. That would be until about
10 1971 or 1972, is that correct?

11 A 1972, that is correct.

12 Q 1972?

13 A Yes.

14 MR. FELDMAN: I have no further questions of
15 this witness.

16 MR. ZEVRNIK: I do.

17 MR. FELDMAN: Paul, do you want to come down
18 here? It would be easier for you.

19 MR. ZEVRNIK: Sure, why not.

20 MR. FELDMAN: Mr. Murad, do you want to take a
21 five-minute break?

22 THE WITNESS: No, I'm fine. I just want a
23 glass of water.

1 EXAMINATION BY MR. ZEVRNIK:

2 Q Hello, Mr. Murad. I am Paul Zevnik. I
3 represent GAF Corporation, and I will try to be brief.

4 Do you recall any occasion -- I am talking now
5 about 1969 to the 1972 period, when a manufacturer of
6 asbestos products came to you with a nonasbestos
7 substitute product?

8 A Yes.

9 Q Could you tell me when those instances were?

10 A Well, let's see, there is Eagle-Pitcher came
11 in roughly about '71, I believe, and stated that he -- or
12 their company had a mineral wool that could be used for
13 high temperature insulation and did not contain asbestos.

14 Q Was this in direct response to the May 5, 1965
15 directive or invitation to remove asbestos from products
16 used on Navy ships?

17 A I would think it would be, yes. I obviously
18 don't know what they had in mind. I can only speculate
19 that they certainly were looking for a market for their
20 products.

21 MS. KROOP: For clarification purposes, can
22 you identify what invitation you are speaking of?

23 MR. ZEVRNIK: That is quite all right. I will

1 ask the questions.

2 BY MR. ZEVNIK:

3 Q Do you recall any other occasions when
4 asbestos manufacturers came to you with a nonasbestos
5 substitute?

6 A There were -- let's see. There was a glass
7 clothe that was promoted as an alternative to the
8 asbestos clothe, and I believe it was Cummings Insulation
9 was one of the manufacturers that was promoting this.

10 There could well have been other people, too.
11 I don't believe that they manufactured it. I think they
12 marketed it.

13 Q When these manufacturers came to you with an
14 asbestos product, what procedure would you follow?

15 A We would try to find a way for testing it.

16 Q What would you do, specifically?

17 A Well, there are two approaches; one, to
18 request that a program for development and testing
19 evaluation be initiated and, two, to use whatever
20 vehicles were available to do the testing.

21 Q Would you say the testing would be the
22 necessary first step in any process to approve a
23 nonasbestos product for use in Navy ships?

1 A Yes. In that mind, it was important to make
2 sure that the item lived up to its claims and was
3 seaworthy, so too speak.

4 Q And if someone came to you with a nonasbestos
5 substitute, you would ask them to proceed with testing of
6 the product?

7 A If they were willing to do it on their own,
8 that would certainly be of great advantage to the
9 government.

10 Q Would you request the manufacturers to submit
11 the products for qualification testing to the Navy?

12 A Not necessarily qualification testing for the
13 qualified products list, if you mean. It was more of an
14 operational test or developmental test, a cross between
15 the two, depending on the circumstances, to determine
16 just how satisfactory these products performed.

17 Q Do you recall asking any manufacturer to
18 submit nonasbestos materials for testing during your
19 tenure from 1969 to 1972?

20 A Yes. Towards 1972, there was an opportunity
21 to test the mineral wool on board a Navy ship that was
22 being used for testing for a wider or a different
23 purpose, let's say, and we were able to make use of that

1 ship and install mineral wool in some of the high
2 temperature piping, and it was used in an actual voyage
3 off the coast of California.

4 Q Did you ever recommend that a specification be
5 altered or amended in order to permit the use of
6 nonasbestos substitutes for asbestos containing
7 materials?

8 A I don't think I did. I think we did get
9 involved in changing a standard, a military standard,
10 which, among other things, addressed the asbestos content
11 of high temperature insulation, and in that case, as I
12 recall, we reduced the asbestos content of high
13 temperature insulation.

14 Q Do you recall specifically what that military
15 specification was?

16 A I think it was 769-C. It went from C to D.

17 Q Did you make any other request for a change in
18 specifications for a high temperature thermal insulation
19 material?

20 A Not that I can recall specifically.

21 Q Before you made any recommendation that a
22 specification be changed, did you have to consult with
23 any other branch of the Navy?

1 A I'm sorry. Could you repeat that, please?

2 Q Before you made a recommendation that a
3 specification be changed to permit the use of a
4 nonasbestos product, did you have to consult or get the
5 approval of any other department of the Navy?

6 MS. KROOP: Asked and answered.

7 THE WITNESS: Yes. We coordinated with all
8 parties.

9 MR. ZEVRNIK: Before a recommendation, it
10 wasn't asked.

11 BY MR. ZEVRNIK:

12 Q Did you consult or need to get the approval of
13 Commander Barboo?

14 A We worked with him and his office. I believe
15 he was in the chain of people who were in the
16 coordination link.

17 Q Was it necessary to have the Bureau of
18 Medicine and Surgery approve nonasbestos products before
19 they could be placed on qualified products lists?

20 A That, I don't know.

21 Q Did you ever refer manufacturers to the
22 National Academy of Sciences for testing of nonasbestos
23 products?

1 A I don't recall that I did, no.

2 Q Do you recall a Mr. Ralph Wands?

3 A I know the name. I don't think -- I didn't
4 work with him much, if at all, but I do remember the name
5 and I think he worked at BUMED, Bureau of Medicine and
6 Surgery.

7 Q Would he have worked with Commander Barboo?

8 A I worked with Commander Barboo from time to
9 time, yes.

10 Q In what connection?

11 A Well, having to do with asbestos.

12 Q Did you receive directives from him in terms
13 of taking asbestos out of thermal insulation products
14 used by the Navy?

15 A I don't recall that specifically. Of course,
16 you know, we were all working to try to come up with
17 suitable substitutes to reduce the amount of asbestos,
18 primarily to reduce the amount of asbestos dust in all
19 parts of the ship and, of course, one feature, one
20 important factor would be to reduce the amount of
21 asbestos in the high temperature insulation.

22 Q Do you recall, of your own personal knowledge,
23 why the asbestos substitution program was started?

1 A Yes. There was an article in the newspaper
2 describing what Dr. Selikoff from Mt. Sinai Hospital
3 believed or at least purported to be a link between
4 asbestos, airborne asbestos and lung cancer.

5 Q Did you personally read that article?

6 A I believe I did.

7 Q Do you recall when that was?

8 A Oh, it was about '68 or so.

9 Q This was prior to the time you became involved
10 in the nonasbestos substitute program?

11 A That is correct.

12 Q Do you recall who told you that this was the
13 genesis, if you will, for the nonasbestos program of the
14 Navy?

15 A I would say Ed Cherobrier.

16 Q How do you spell that?

17 A I know how to spell Ed. Cherobrier is tough.

18 C-h-e-r-o-b-r --

19 MR. FELDMAN: C-h-e-r-o-b-r-i-e-r, I think.

20 THE WITNESS: I will take your word for it.

21 It is probably right.

22 BY MR. ZEVNIK:

23 Q Did you work for him?

1 A No, I did not work for him. I worked with
2 him. We both worked for a mutual boss at that time.

3 Q Who was that?

4 A Frank Lovell.

5 MR. FELDMAN: How do you spell Lovell?

6 THE WITNESS: L-o-v-e-l-l.

7 BY MR. ZEVNIK:

8 Q What was his position, if you recall?

9 A Cherobrier's position?

10 Q Lovell's position.

11 A Lovell's position, he was a branch chief of
12 the chemistry and toxicology unit, or unit chief,
13 whatever they call it, section chief, I think it was.
14 Section chief is I think what it was.

15 Q This was in Hyattsville?

16 A Well, at that time, in '68, we were in
17 downtown Washington.

18 Q You moved to Hyattsville in '69?

19 A Then we moved to Hyattsville in '69, that is
20 correct.

21 Q And you were there from '69 to '72, while you
22 were working in the nonasbestos substitute program in
23 Hyattsville, that is?

1 A Yes. Again, that is a minor point, but I am
2 not sure if they refer to it as a specific program, but
3 certainly there was that goal.

4 Q If a manufacturer were requesting placement on
5 a qualified products list, do you recall what form it
6 would be completed by the manufacturer?

7 A No, I don't.

8 Q Do you know to whom the form would be sent?

9 A It would be sent to the specifications
10 section, as I recall. It was code 6124.

11 Q Would it be sent to Jean Harmon?

12 A Yes. That was her section.

13 Q It is code 6124?

14 A Yes. I think that was the code number.

15 Q Did you work at all with Jean Harmon at the
16 Byattsville 00Cter?

17 A Yes, with Jean and her people. She had a
18 section of folks, maybe half a dozen or so.

19 Q Can you recall any particular projects that
20 you worked with her on?

21 A Well, on all the specifications that I was at
22 all involved in.

23 Q Did you work with her on any nonasbestos

1 substitute?

2 A Well, whatever the situation called for, yes.
3 If there -- she was involved in essentially making sure
4 that the specifications were kept up to date. That
5 pertained to all specifications; by all specifications,
6 the material type specifications, not ship specifications
7 per se. The specifications that described either a
8 material or a piece of equipment.

9 Q You took over in charge of this program or
10 activity or goal of removing asbestos from insulation
11 products in about September, 1969?

12 A That is correct.

13 Q Did you take over for somebody who was in that
14 position?

15 A Well, Tom Pagliesse had that job before I did.

16 Q Do you know how long he was in that position?

17 A He was in that job when I started at Naval
18 Ship Engineering Center. That was, as I mentioned
19 before, in November of '66. So at least from that time,
20 and I don't know how long before that.

21 Q Now, when you were put in charge of this
22 nonasbestos substitute program, you were told that the
23 goal was to reduce the amount of asbestos in products

1 used by the Navy?

2 A Yes.

3 MS. KROOP: Objection. Ambiguous.

4 BY MR. ZEVNIK:

5 Q You can answer the question.

6 MR. FELDMAN: I think he did. The answer was
7 yes?

8 THE WITNESS: Yes.

9 BY MR. ZEVNIK:

10 Q Do you recall who told you that was the goal
11 of the program?

12 A Well, the boss. Leon Birnbaum pretty much
13 mentioned it, and Ed Cherobrier was still involved in it.
14 Even though we both worked for Birnbaum, he was a second
15 level supervisor.

16 Of course, now, that was not the only kind of
17 work I was doing. That was one aspect of the work.
18 There were other aspects to the job. That was not the
19 sole purpose of the job.

20 Q Was one goal of the program also to remove
21 asbestos materials from insulation materials used in Navy
22 vessels?

23 A Sure. That would be a factor.

1 Q When a manufacturer submitted a request for
2 qualification testing to be placed on a qualified
3 products list, who at the Navy would test the products?

4 A That would depend on who in the Navy had the
5 expertise.

6 Q Well, let's say thermal insulation products.

7 A Thermal insulation, we didn't have that much
8 expertise, we didn't have that much testing there.

9 Q Do you ever recall having a meeting with
10 representatives from GAF Corporation regarding an
11 asbestos-free substitute for asbestos containing
12 materials required by the Navy?

13 A I can't recall GAF, but I won't rule it out.
14 It just doesn't come to mind at this point.

15 Q Do you recall working with a William Swingen
16 (phonetic) or Richard Henry of GAF Corporation in the
17 development of an asbestos-free substitute for asbestos
18 containing thermal insulation materials?

19 A No, I don't recall it right now.

20 Q Do you recall any manufacturer approaching you
21 with an asbestos-free calcium silicate thermal insulation
22 program?

23 A There was a calcium silicate thermal product.

1 I can't specifically recall a manufacturer coming in and
2 talking to me personally. Again, I am not saying that
3 that didn't happen. I just can't remember it.

4 I do know that people at Newport News shipyard
5 showed me some samples of calcium silicate, and they were
6 concerned about the fact that the samples that they
7 received -- it was more than samples. They received a
8 shipment, which they had ordered, with the intention of
9 using it, using the calcium silicate as high temperature
10 insulation material for piping.

11 The good many, a high percentage of the piping
12 insulation was broken on receipt and they were concerned
13 about its viability, the fact that it just didn't seem as
14 if it would be able to withstand the rigors of shipboard
15 use.

16 Q This was a nonasbestos products?

17 A Yes, that is what they told me. It is calcium
18 silicate.

19 Q Did you ever recommend that a specification be
20 changed in order to permit a nonasbestos calcium silicate
21 to be used on Navy vessels?

22 MR. MULVEY: Objection. That question assumes
23 on the regulations and the military specs that existed

1 prior to 1969, that calcium silicate asbestos products
2 could not have been used.

3 BY MR. ZEVNIK:

4 Q You may answer the question.

5 A No, I didn't recommend it. As I recall, I
6 never got that far.

7 Q Did anyone ever ask you, to your recollection,
8 to seek a change in the specifications for calcium
9 silicate insulation so as to permit the use of a
10 nonasbestos product?

11 MR. MULVEY: Objection, same basis.

12 THE WITNESS: Do I answer?

13 MR. FELDMAN: Yes, yes.

14 BY MR. ZEVNIK:

15 Q Yes, you may answer.

16 A I can't recall it, to be very honest with you.
17 Again, the same thing, I don't recall it at this point.

18 Q Did you ever work with a person named Perry
19 Rogus?

20 A Rogus? Yes.

21 Q What did you work with him on?

22 A Well, he was at Philadelphia Naval Shipyard.
23 Excuse me, he was at the Naval Ship Engineering Center,

1 Philadelphia Division, and he and I worked on a couple of
2 different things, but as far as insulation is concerned,
3 he, I believe, as I recall, was one of the team members
4 that conducted survey of naval shipyards to determine the
5 wear and how insulation was used on board ship.

6 Q Did you ever see the results of his survey?

7 A I can't recall if I actually saw the results
8 of the survey. They started that and I think they
9 finished it before I was directly involved.

10 Even after I became involved, Ed Cherobrier
11 continued to work with that team in the resultant of
12 their survey.

13 It found its way into an instruction and I
14 believe I may have seen it, I may not have seen the
15 report or result of their survey.

16 I participated in writing the instruction that
17 I understand was a resultant of that survey.

18 Q What was that instruction?

19 A I believe it was 50100.26.

20 Q That was an instruction that asbestos efforts
21 be undertaken to remove asbestos dust from thermal
22 insulation materials?

23 MS. KROOP: Objection. Leading.

1 THE WITNESS: Do I answer?

2 BY MR. ZEVNIK:

3 Q You may answer the question.

4 A I am not so sure. It has been so darn long, I
5 can't remember exactly what the instruction said.

6 As I recall, though, it did have as its main
7 thrust, procedures that would reduce the amount of
8 asbestos dust in areas, primarily in areas of the ship
9 where high temperature insulation was used.

10 Q Was this instruction the first time that you
11 had been informed or heard about the problems with
12 asbestos?

13 A No. It wasn't the first time.

14 Q Can you recall the first time?

15 MS. KROOP: Asked and answered.

16 BY MR. ZEVNIK:

17 Q You may answer.

18 A Well, the absolute first time is when Ed
19 Cherobrier mentioned it to me, mentioned the concern to
20 me.

21 Q Now, you mentioned that there was a team of
22 people that were working with Bernie Rogus on this
23 project.

1 Do you know who else was on the team?

2 A There were a couple of people from NAVSAC
3 Philadelphia Division. I am trying to think of the
4 names. I can remember who they were. I can visualize
5 them, but I can't think of their names offhand.

6 I think if you supplied the names, I would be
7 able to say yes, they were, or no, they weren't. I can't
8 think of their names right offhand.

9 Q You believe that a report of their survey was
10 prepared?

11 A I believe it was, but, again, I can't recall
12 actually seeing that. The resultant was, that I think --
13 I am sure it contributed to the instruction of 50100.26.

14 It may not have been the only contributor to
15 that instruction. There was other information drawn from
16 other sources, too, I believe.

17 Q Now, as a materials engineer, what does the
18 term weight loss during heat soaking mean to you?

19 A Weight loss during heat soaking?

20 Q Weight loss during heat soaking, what does
21 that mean to you?

22 A I can only tell you what I think it means. I
23 don't think I ever heard the term before. It means to me

1 that material would lose weight when exposed to extensive
2 amount of heat.

3 Q Did you ever have occasion to deal with this
4 concept in connection with the asbestos substitute
5 program in the Navy?

6 A No, I didn't.

7 Q Again, as a materials engineer, would asbestos
8 lose weight during heat soaking?

9 A I can't answer that. I can tell you that
10 asbestos is inert. The asbestos itself would not lose
11 weight when subjected to heat, unless it had previously
12 been soaked with water.

13 It is not the asbestos. The asbestos itself
14 is inert. It is possible there might be some water
15 crystalization.

16 I would have to look at the formula for
17 asbestos. That is the only way I could think of that it
18 would lose weight.

19 If there was some water crystalization, upon
20 exposure to high temperature that water crystalization
21 could volatilize or evaporate.

22 MR. ZEVNIK: I don't think I have any further
23 questions. Thank you.

1 MS. WEISS: Could I follow up on one point?

2 EXAMINATION BY MS. WEISS:

3 Q This instruction, you said it had to do with
4 procedures governing the use of asbestos?

5 A That is correct, procedures for handling
6 asbestos.

7 Q You were involved with writing that
8 instruction?

9 A Yes. I believe I edited it on at least one
10 occasion in which it was drafted, and I went through and
11 either finalized it or had a part in finalizing it.

12 Q What year was that, do you think?

13 A I think it finally went out in 1970, sometime
14 in 1970, as I recall.

15 Q Did you ever or did anybody in your office
16 ever have occasion to go to visit any shipyards to see
17 whether the recommendations in those instructions had
18 been implemented?

19 A Yes. I visited a couple of shipyards.

20 Q And did you have any conclusions? Did you
21 write anything as to whether or not the recommendations
22 had been implemented?

23 MR. MULVEY: Objection. It calls for an

1 answer with respect to the name of the shipyard. Unless
2 you are going to pin it down, it is meaningless
3 testimony.

4 BY MS. WEISS:

5 Q What is the name of the shipyard you visited?

6 A I visited Boston Naval Shipyard, that is one.

7 Q Did you come to any conclusions about that
8 shipyard?

9 A They are in the process of instituting
10 changes. I don't think changes were totally finalized.

11 Q Was that your feeling about the other
12 shipyards that you visited for that purpose?

13 A I visited some of the shipyards on the east
14 coast, say Boston, Portsmouth Naval Shipyard, Norfolk,
15 and, oh, let's see -- those were the main ones.

16 They were all in the process.

17 MS. WEISS: Thank you. No further questions.

18 MR. HAGERTY: No questions.

19 MR. WATKINS: No questions.

20 MR. ZEVRNIK: I have a couple of questions, but
21 I forgot. Go ahead.

22 MR. MCCAULEY: Thank you.

23 EXAMINATION BY MR. MCCAULEY:

1 Q My name is Jim McCalley, Mr. Murad.

2 A Yes.

3 Q With respect to the asbestos elimination
4 substitution program, you testified that that involved
5 the reduction of asbestos content in thermal insulation
6 materials?

7 A Yes, that would be one of the factors
8 involved.

9 Q And another factor or aspect of the program
10 was also the elimination and substitution of thermal
11 insulation products containing asbestos?

12 A Yes. That would be the ultimate goal, to have
13 entirely asbestos-free high temperature insulation, and
14 one that was, of course, suitable for use on board a ship
15 with all the implied stresses that would be involved.

16 Q And, finally, you also testified to another
17 aspect of the reduction of the dust levels on board a
18 ship?

19 A That is correct.

20 Q As a result of this survey you talked about,
21 is that correct?

22 A Right.

23 Q Which of those three aspects were you

1 primarily engaged in?

2 A Well, of those that you mentioned, probably
3 the reduction of asbestos content in high temperature
4 insulation.

5 Q Did you initiate or generate any amendments to
6 the specifications in that particular aspect of reduction
7 of content in thermal insulation materials?

8 A Well, the only document I can recall that we
9 did anything like that in was that military standards,
10 769.

11 We called for a lower content asbestos, a
12 lower asbestos content high temperature insulation
13 material to be used.

14 Q You talked about an action officer several
15 times?

16 A Yes.

17 Q Are we talking about the person that is the
18 preparing actuator for the specification or are they one
19 in the same?

20 A Yes, that is what I was referring to -- that
21 may or may not be the term that people use -- a person
22 who actually did the work of writing the specifications
23 or revising, or whatever it took to make the changes.

1 Q During the period of 1969 to 1972, who was the
2 person or actuator that was most frequently involved with
3 the preparation of thermal insulation specifications for
4 asbestos products?

5 A Probably me.

6 Q Prior to 1970, or thereabouts, when you
7 testified that the Specifications Control Board came into
8 being, was there a predecessor group or organization that
9 was involved with the approval of specifications for
10 thermal insulation products?

11 A No. You went through the procedures in just
12 the same way that you did after that board came into
13 being.

14 It was controlled, if you want the use that
15 term, was looked over by that office that controlled
16 specifications and coordinated them.

17 In other words, the group that Jean Harmon
18 headed up for a time, it was headed up by different
19 people at different times.

20 As I recall, it was Code 6124. But, I am not
21 sure why they decided to put senior level people in to
22 oversee the whole process.

23 Q Am I correct in that prior to 1970, Code 6124

1 was the approving authority for the specifications?

2 A Well, in effect, yes, because what they did
3 was just make sure that all parties that were
4 legitimately involved in review of a specification were
5 in fact given an opportunity to comment and that whatever
6 comments, any essential comments they had were either
7 incorporated or withdrawn or resolved, one way or the
8 other.

9 There were only three choices. You either
10 incorporated them as is, you changed it based on
11 discussion with the commentor, or the commentor withdrew
12 his comment.

13 Q So after the comment process and the
14 resolution of any problems created in the comment
15 process, Code 6124 would either approve or disapprove the
16 specification?

17 A In effect, yes. I'm not sure. I don't know
18 who actually signed it off. I believe it was sent up for
19 probably a higher level official to sign off.

20 I don't believe that Jean Harmon or her
21 counterpart, predecessor, had that authority. However,
22 once it went beyond their office, I can't recall a case
23 in which it was not signed and issued.

1 In effect, they had the clearing authority.

2 Q Do you know, if you know, the identity of the
3 higher authority?

4 A I don't recall who that was. I would suspect
5 it would be an admiral or somebody at flag level, but
6 maybe not.

7 It could have been a captain.

8 Q Would that be in the Naval Sea Systems
9 Command?

10 A Yes. I would think that would be Naval --
11 well, what is currently called Naval Sea Systems Command.
12 At that time it would be either -- it was probably
13 somebody at NAVSHIPS, but I can't recall it offhand.

14 A simple way to do it was go get an old spec
15 and look to see who signed it off.

16 MR. MCCAULEY: That is all the questions I
17 have. Thank you.

18 THE WITNESS: Okay.

19 MR. ZEVRNIK: I have a few more that I forgot.

20 EXAMINATION BY MR. ZEVRNIK:

21 Q For the period 1969 to 1972, did you keep
22 correspondence files of the records?

23 A Yes, at that time I did.

1 Q Do you know where they would be located for
2 that time period?

3 A They would be at the same office, or whoever
4 has taken over that function. I understand there has
5 been at least one, if not more reorganizations since I
6 left.

7 There isn't a Naval Ship Engineering Center
8 per se at this point in time, but certainly the functions
9 have to be done.

10 Q You mean a Naval Ship Engineering Center per
11 se, Hyattsville?

12 A Naval Ship Engineering Center that I know of.
13 My knowledge, that has been absorbed into Naval Sea
14 Systems Command as one of the codes, or in probably more
15 than one of the codes.

16 Q At the time you left that position, you don't
17 know who had custody of your records and correspondence?

18 A Yes. Al Winer took over the work that had to
19 do -- I think he took over just the high temperature
20 insulation.

21 He may have taken over. I think it was split
22 into inorganic insulation and organic. They are plastic
23 insulation. Al took over the inorganic and I think it

1 was Pete Gothier who took over the plastic insulation,
2 but I am really not sure.

3 I do know that Al took over the part that you
4 would be interested in, in the asbestos area.

5 Q Did you keep any personal correspondence at
6 your home?

7 A No.

8 Q You refer to MILL standard 60, which lowered
9 the content of asbestos. Was that promulgated on your
10 recommendation while you were in that position?

11 A I would say the answer to that would basically
12 be yes. I wouldn't be the only one involved, but I was
13 certainly all for it, and what it did was identify what
14 section of it, and what it did was identify lower
15 asbestos content high temperature insulation for use in
16 applied areas.

17 Q Now, when you say lower, do you recall what
18 the approximate percentage of asbestos was?

19 A No. That is what I was trying to recall over
20 the last day or so and I can't. I know it was a fairly
21 significant reduction, as I recall, but I can't recall
22 the numbers.

23 Q Is it fair to say that during your tenure in

1 that position, that no nonasbestos product was found by
2 you to be an adequate substitute for asbestos containing
3 material used by the Navy yard's ships?

4 A That is right, none that we could show would
5 be seaworthy.

6 MR. ZEVNIK: Thank you.

7 MS. KROOP: Do you want to take a five-minute
8 break?

9 (Thereupon, there was a recess taken,
10 after which the following proceedings
11 were had:)

12 EXAMINATION BY MS. KROOP:

13 Q I have a few questions for you, and I am going
14 to direct all of my questions to the period when you
15 worked in the codings unit from 1969 to 1972, and
16 specifically with regard to your work on specs for
17 asbestos containing thermal insulation.

18 Okay?

19 A Yes.

20 Q Insulation products. Is technical data
21 required in order to amend specifications?

22 A That is very helpful to have that, yes.

23 Q Where did the Navy get the technical data in

1 order to amend specs concerning asbestos products?

2 MR. ZEVIK: Objection. There is no
3 foundation. He already testified there was no amendment
4 to any specification for nonasbestos products during that
5 time period.

6 Therefore, there is no foundation for that
7 question.

8 BY MS. KROOP:

9 Q You may go ahead with your answer to the
10 question.

11 A Well, we relied on industry.

12 Q In an attempt to amend a specification, you
13 would rely on technical data from industry?

14 A Yes, that is right.

15 Q How did industry supply this information to
16 the Navy?

17 A Normally, by two methods: Word of mouth, and
18 also with specification -- well, let's say data sheets
19 which could be determined, specification data sheets; not
20 to be confused with the military specification, but just
21 a descriptive data sheet that was published by the
22 manufacturer of the product.

23 Q Were there any brochures of any sort,

1 catalogs?

2 A Yes. It would take the form, usually, of a
3 brochure or a data sheet that could be a part of a
4 catalog.

5 Q Were there any product catalogs that you
6 received?

7 A Again, usually it was in the form of just a
8 few sheets which would be a part or could be a part of a
9 loose-leaf notebook type of binder, which when put
10 together with other data sheets of products of the
11 manufacturers sold, would be tantamount to a catalog.

12 Q Were there products described in these data
13 sheets?

14 A Yes.

15 Q What kind of products were discussed?

16 A Well, of course, the insulation materials.
17 That is the area that I was interested in.

18 Q Were the products going to be developed or in
19 existence?

20 A No. They would be in existence at that point.

21 Q So that in your experience in working in the
22 codings unit, when specifications were reviewed or
23 reviewed for amendment, were these suggested amendments

1 usually based on commercially available products?

2 A Yes.

3 Q Did asbestos manufacturers come to you with
4 any health hazard information associated with exposure to
5 asbestos during this time?

6 A Not that I recall, not health hazard
7 information.

8 Q Was any of it included in the technical data
9 sheets you received or other information that you
10 received?

11 A Not that I can recall, no.

12 Q You testified that there was a process
13 involved in spec reviewing and amending specs?

14 A Yes.

15 Q Could you tell me the nature of the process
16 and coordination with industry during that process? What
17 was the first step?

18 MR. FELDMAN: I object. I am not sure that
19 this witness has testified as to that. I think it is a
20 mischaracterization of testimony.

21 BY MS. KROOP:

22 Q You testified that you were involved in
23 reviewing and amending asbestos thermal insulation

1 products specs, is that correct?

2 A Yes.

3 Q How would you initiate a process of amending a
4 spec?

5 A Well, it would depend. It would be based on
6 information that would come in from either industry or
7 from the people or the organizations that made use of the
8 product, the users or the manufacturers.

9 Q When you say users, you mean users in the
10 Navy?

11 A Yes, that is correct, people who work for the
12 Navy that had the job of installing insulation on board
13 ships.

14 Q What would users tell you?

15 A If they had a problem with the insulation,
16 they would make that known to us. Primarily, the vehicle
17 that should be used is a deficiency report, and sometimes
18 we would get deficiency reports. Other times we might
19 receive a letter or just phone calls. And depending on
20 the nature of the described problem or deficiency, if you
21 will, we would take appropriate action.

22 I am not trying to gloss over it, but there
23 were times when the deficiencies were not deemed to be

1 very important and we would always address it and work it
2 out with whoever submitted it.

3 Sometimes the submitter of the deficiency
4 information realized that it really wasn't a major point
5 and they withdraw it.

6 Other times we would have to go in and do
7 something about it.

8 Q What kind of information did industry submit?

9 A Product data, usually on new or modified
10 insulation that they have recently put on the market.

11 Q What was the next step after you received this
12 information, technical information?

13 A It could be put into a form of an amended spec
14 and work it right through the system to go to all parties
15 concerned.

16 Q Well, if you put it into an amended spec, did
17 you draft that amendment?

18 A Sure.

19 Q And then what was the next step after that?

20 A Send it to -- first of all, you would have to
21 have a cover letter put on it, signed out by the boss.
22 That would be, I guess -- I guess Bernie Birnbaum had
23 signature authority.

1 I am not sure if Ed Morgenstern did or not, he
2 may. Normally, Bernie Birnbaum would have the signature
3 authority and he would sign out a letter to all
4 interested parties for their coordination or let's say
5 review and comments.

6 Q And your draft was then based on the
7 information you received, is that correct, from industry?

8 MR. FELDMAN: Objection.

9 MR. MCCAULEY: Objection.

10 MR. WATKINS: That wasn't his testimony.

11 BY MS. KROOP:

12 Q Where did you get the technical information to
13 include in your draft?

14 A We relied on industry.

15 Q You said that Mr. Bernie Birnbaum would sign a
16 letter, a cover letter?

17 A Yes.

18 Q That would be circulated to parties, you said?

19 A Yes, to whoever in the industrial -- well,
20 whoever in the Navy and industry would be appropriately
21 involved.

22 Q Who might be appropriately involved?

23 A Well, depending on the kind of insulation. If

1 it had to do with machinery, you would send it to the
2 machinery code. You would also send it to -- let's see,
3 who else -- people in the developing community, at
4 NAVSHIPS 03, the Code 03 --

5 Q Who in industry might receive that?

6 MR. FELDMAN: I object. The witness is
7 answering a question and I would appreciate if you would
8 allow him to finish the question before you ask him
9 another question.

10 BY MS. KROOP:

11 Q I'm sorry. Go ahead and finish your answer.

12 A Okay. Other people within the Naval Ship
13 Engineering Center that had an interest in that item.
14 People who have one of the Naval Ship Engineering Center
15 divisions, primarily the Philadelphia division.
16 Sometimes the shipyards, to determine whether the
17 proposed change was agreeable to them, because, after
18 all, they could be impacted by it.

19 Q Did you also send these drafts out to
20 industry?

21 A Yes.

22 Q In the case of an asbestos containing
23 insulation product, would it go to the asbestos

1 manufacturers?

2 A Yes, to NIMA, the National Insulation
3 Manufacturers Association.

4 Q Would it also go to specific individual
5 manufacturers?

6 A As I recall, we sent it to NIMA and, of
7 course, then NIMA would send it to their members.

8 I don't recall sending it to specific
9 manufacturers, although I don't see any objection to
10 doing that.

11 It just wasn't -- it was much more easy to
12 just send it to one organization and let that
13 organization fan it out to whoever they thought would be
14 interested.

15 Q Did you ever unofficially hand it to any
16 manufacturers?

17 A Yes, on request, if they asked for it, sure.
18 We would work with them and give them a copy of the
19 proposed draft.

20 Q What was the purpose of sending out the
21 proposed draft to industry?

22 A Well, to make sure that whatever change --
23 again, in point, there weren't that many changes -- but

1 whatever change would be agreeable to them.

2 Q Did you receive written comments from
3 industry?

4 A Yes. You would get a letter in from NIMA that
5 would usually summarize the NIMA position and sometimes
6 they would even summarize some of their members
7 positions, particularly if it were not in line with the
8 NIMA overall positions.

9 Q Can you tell me what NIMA stands for?

10 A National Insulation Manufacturers Association.

11 Q Can you tell me who were the members of NIMA
12 at that time?

13 A Oh, mostly insulation companies.

14 Q Can you name them?

15 A I would say Owens Corning, Pittsburg Corning,
16 Johns-Manville, H. K. Porter, Raybestos Manhattan, and
17 probably GAF.

18 Probably all of them.

19 Q Were drafts also sent to the ASTM?

20 A Well, any aspect that had to do with testing
21 would go to ASTM.

22 Q And then what would happen? These comments
23 would come back in, and what was the next step?

1 A You would either incorporate -- you would look
2 at them to find out which ones were essential, which ones
3 were not essential.

4 The essential ones you either had to
5 incorporate or resolve. The nonessential ones we tried
6 to do -- at least I used to try to do the same thing with
7 the nonessential ones, but you weren't required to do
8 that.

9 Q Did you talk to industry in trying to resolve
10 these questions?

11 A Oftentimes, yes.

12 Q Would there be records of these comments from
13 industry?

14 A Yes. They would come in through a
15 specification code and come on down to a specific office.
16 Yes, there would be records.

17 Q Would there still be records available?

18 A That, I don't know how often they clean out
19 their safes or cabinets.

20 Q Was there a particular file for these comments
21 at the time?

22 A Yes. I don't know if everybody did the same
23 thing. What I would do is just have a folder for a

1 particular spec and anything that pertained to that spec
2 would go into that folder. At least that is what I tried
3 to do.

4 Q Did you have any personal contact with
5 asbestos industry manufacturers during this time?

6 A Yes, their reps, their representatives would
7 come in and we would talk about different aspects of
8 insulation.

9 Q Do you remember the names of any of the
10 companies?

11 A Again, all the names that I mentioned earlier
12 as being members of NIMA, those people.

13 Q Okay.

14 A And there were several others, too.

15 MR. FELDMAN: I am sure Mr. Musad can
16 enlighten you on that.

17 BY MS. KROOP:

18 Q Are you aware of any Navy solicitation or Navy
19 impliment in -- are you aware of any Navy solicitation
20 for industry assistance in implementing the asbestos
21 substitution elimination program?

22 A We met with them in a number of ways. The
23 most common way was through their representatives.

1 They came in and we would talk, and certainly
2 it was clear that the Navy was interested in high
3 temperature insulation that contained the lower amount of
4 asbestos, and the ultimate goal would be no asbestos at
5 all and still be able to be used on board ship.

6 There was one meeting that comes to mind,
7 probably the only one that I can recall at this point,
8 and that was a little before I really was officially in
9 the job, when it was fairly evident that I would get the
10 job that I did get, it was the middle of September of
11 '69, in which there were industry representatives, and as
12 I recall, the information that was discussed at that
13 meeting was used in the instruction that finally went
14 out, the 50100.26, and also we talked about the ultimate
15 goal of having zero asbestos in high temperature
16 insulation.

17 Q Did the Navy solicit industry to produce
18 asbestos-free or lower asbestos products?

19 A Well, in that way, it was mostly through
20 friendly persuasion, so too speak. I don't recall any
21 written documentation.

22 There may have been, but I don't recall.
23 Mostly, it was word of mouth type of thing, where we made

1 known to them that we were interested in either lower
2 asbestos or ultimately zero asbestos content in
3 insulation.

4 Q Do you recall any letters that went out to
5 industry on this subject?

6 A I can't recall one. Again, its possible that
7 there were some.

8 Q You testified before that the manufacturers
9 did bring two nonasbestos products to you?

10 A Well, they brought one that I saw, and that
11 was the mineral wool that Eagle-Pitcher brought a sample
12 of and that we finally did have an opportunity to put on
13 board ship for testing purposes.

14 The other one is calcium silicate. I don't
15 recall actually getting a sample of it myself.

16 Again, I can't rule it out, but I do recall
17 seeing it at Newport News shipyard in which the Newport
18 News people told me that they received a shipment in
19 which a significant percentage of it was broken on
20 delivery. So they were very concerned, again, calcium
21 silicate, as it was produced at that time, was not
22 seaworthy.

23 Q Were you aware of any other products brought

1 to you by industry as being asbestos-free or lower
2 asbestos than the two you just mentioned?

3 A Yes. There was the glass cloth as opposed to
4 asbestos cloth.

5 Q Okay.

6 A That is one. And there was a lower asbestos
7 content batting material that E. K. Porter was trying to
8 promote.

9 Q What happened with that?

10 A Well, I thought that was very dusty. That was
11 my personal opinion.

12 Q Did H. K. Porter show tests for this product
13 to the Navy?

14 A There was a letter. It was certainly far from
15 a formal test report, in my view, but there was a letter
16 that addressed the issue and that was about it. That is
17 all I saw.

18 I also saw a sample. I should, you know -- I
19 shouldn't say you know. I did give it a very superficial
20 choke test, so too speak, choke point test. By that, I
21 mean, I took it and wiggled it around and threw it
22 against the wall a couple of times to try to simulate
23 shipboard use.

1 Q And it was dusty?

2 A It was dusty.

3 Q And that is all you remember of that
4 substitute product?

5 A Yes, on that particular one.

6 Q Did the specifications you were involved in
7 amending, concerning asbestos products, contain packaging
8 provisions?

9 A Yes, they did.

10 Q Were complete versions of the drafts of any
11 amended specs circulated to industry for comment?

12 MR. ZEVNIK: Objection. What do you mean by
13 complete?

14 MS. KROOP: I mean, did these drafts contain
15 packaging provisions and all of the provisions of the
16 spec?

17 THE WITNESS: Yes.

18 BY MS. KROOP:

19 Q Was industry prohibited from commenting on any
20 portions of the spec?

21 A No.

22 Q If industry had commented on the packaging
23 provisions, would you have received those comments?

1 A Yes, I would see them.

2 Q Would you have reviewed them?

3 A Yes.

4 Q Would they have been reviewed and resolved in
5 your office or by you?

6 A Well, I would look over the entire set of
7 comments. If there was an area that I was not as
8 familiar with as other officers or other people, then I
9 would take it to that office or to those people and get
10 their opinion.

11 Q Who would you coordinate with on a packaging --

12 A There was a packaging group that I thought was
13 very competent in that area, certainly much more
14 competent than I was.

15 There was no question about that, so I would
16 take it to them.

17 Q Would those comments on packaging provisions
18 go in a file with the other comments that were received
19 on the draft?

20 A Yes, it would go in as a package. It would go
21 in as all in the same folder.

22 Q These would be maintained with the spec file,
23 then?

1 A Yes.

2 Q To your knowledge, was there any standard or
3 specification or regulation prohibiting industry from
4 placing warnings on asbestos packages?

5 MR. ZEVNIK: Objection. Unspecific as to
6 time.

7 MS. KROOP: I was addressing my questions to
8 between 1969 and 1972.

9 MR. ZEVNIK: That is fine.

10 THE WITNESS: No, nothing to prohibit them.

11 BY MS. KROOP:

12 Q Are you familiar with any packaging provisions
13 in thermal insulation specs or amendments that prohibit
14 industry from putting a warning label on packages of
15 asbestos?

16 MR. ZEVNIK: I assume that is the same time
17 period.

18 MS. KROOP: Yes. I prefaced all my questions.

19 THE WITNESS: Okay.

20 MR. ZEVNIK: It was the same question. That
21 is what led me astray.

22 THE WITNESS: Okay. No, I know of nothing
23 that would prohibit any kind of labels.

1 MS. KROOP: Thank you. Do you have questions?

2 MR. MULVEY: Yes.

3 EXAMINATION BY MR. MULVEY:

4 Q Do you remember any of the companies that sent
5 representatives to ASTM during your association?

6 A Well, again, most of the asbestos companies
7 attended -- I attended one meeting, at least, and at that
8 meeting there, industry was well represented by just
9 about all the asbestos companies, the ones I dealt with,
10 at least.

11 Q Could you, just for the record -- one thing
12 you have the appreciate, at some point in time we might
13 be reading this to the jury, Mr. Murad.

14 Could you just tell us again who those
15 companies were that you met with?

16 A That would be Owens Corning, Johns-Manville,
17 Eagle-Pitcher, H. K. Porter, I believe Raybestos
18 Manhattan, Pittsburg Corning.

19 I believe those are the ones that come to mind
20 at the moment.

21 Q Did H. K. Porter send a representative?

22 A I believe they did, to ASTM. I think they
23 were there.

1 Q Did ASTM develop certain standards?

2 A Their job was to come up with standardized
3 testing procedures that would be accepted throughout the
4 industry, so that there would be a uniformity in
5 determining the quality of the product.

6 Q And those standards, in addition to being
7 accepted by the industry, were they accepted by the
8 government?

9 A Yes, sir.

10 Q And some of the ASTM standards would find
11 their way into military specs?

12 A They could, yes.

13 Q And in fact did?

14 A I would say they were in some of the specs;
15 not necessarily all, but some of the specs.

16 Q And if an ASTM standard was in military spec
17 and the ASTM standard was revised, then the military spec
18 would be revised, is that correct?

19 A That should be the case, that is correct.

20 Q This packaging group that you just referred
21 to, do you remember a Marie Dunn?

22 A No, I don't.

23 Q Mr. Basford?

1 A Yes.

2 Q Was he one of those individuals that you
3 referred those questions to?

4 A Yes.

5 Q And Mr. --

6 A Anceravage.

7 Q Very good. Thank you. Any other participant
8 in a group that you can?

9 A Al Anceravage and Frank Basford were the only
10 two in the group when I worked with them.

11 Q Are you familiar with MILL standard 129?

12 A The number seems familiar, but I can't
13 pinpoint what it has to do, what the subject is.

14 Q In terms of military specifications, you have
15 spent time this afternoon talking about them. As I
16 understand it -- correct me if I am wrong. Again, it
17 might be a source of confusion on my part -- but military
18 specification might be based upon two different
19 things: One would be a requirement in
20 the sense of what a product must do, the function that it
21 must meet, the specifications. Another would be the
22 composition of the product.

23 A Yes, that is essentially correct. In other

1 words, categorizing the two main groups, performance
2 specification, which would describe how the item should
3 behave, and the second would be a design specification,
4 which would identify primarily the physical or perhaps
5 the chemical and physical properties of the material.

6 Q And are you familiar with MIL-I-2781?

7 A That also sounds familiar, but, again, I can't
8 seem to associate the number with the material. There
9 were quite a few that pertained to different insulation
10 materials.

11 Q The military specifications dealing with
12 thermal insulation materials were broken down into a
13 number of different subcategories, would that be correct?

14 A That is correct.

15 Q And they would all have different MIL-I
16 specification numbers?

17 A They would have all different numbers, that is
18 right.

19 Q Some of those specifications would be based
20 upon product content or composition and some would be
21 based upon the function that you wanted to achieve?

22 MR. ZEVNIK: I have to object, because the
23 question to me is ambiguous. When you say some of the

1 specifications, are you talking about some of the
2 numbered specifications or some portion of each of the
3 specifications?

4 MR. MULVEY: Some of the numbered
5 specifications.

6 BY MR. MULVEY:

7 Q Would that be true?

8 A I would say the answer to that is yes.

9 Q Are you familiar with any testing that was
10 done at the University of California in the 1971, 1972
11 period under the auspices of Pittsburg Corning?

12 A Yes, there was a test being done out there.
13 Essentially, as I recall, it was to either -- addressing
14 essentially the same subject area that Dr. Selikoff
15 addressed in his work.

16 Q And that area is health hazards associated
17 with exposure to asbestos products?

18 A That is correct.

19 Q And do you know what the result of that study
20 was?

21 A To my knowledge, it didn't -- it basically
22 came to the same conclusions that Selikoff had come to,
23 but I don't think I ever read that report or the results

1 of the study; but by word of mouth, I understood that
2 there was nothing new uncovered.

3 Q Do you know which individual within the
4 Department of the Navy would have had responsibility for
5 overseeing that project?

6 A Yes. That was done -- BUMED was closest to
7 that. That would either be Sam Barboo or one of his
8 bosses. I can't recall the name of the boss. It wasn't
9 Wands, it was some other guy. Another gentleman took
10 over and I can't think of his name. I can visualize
11 him, but I can't think of his name offhand.

12 Q In about May of 1969, in furtherance of the
13 so-called government elimination and substitution of
14 asbestos products program, was a letter sent out to
15 manufacturers and suppliers of insulation materials
16 advising them that the government would like input with
17 respect to their knowledge of substitutes?

18 A I don't recall a specific letter. Again, I
19 wouldn't rule it out. I can't pinpoint a specific
20 letter.

21 There was information that was given out,
22 certainly by word of mouth and at conversations or in
23 less formal meetings where a representative would come by

1 and we would discuss it.

2 Q Whether it be in response to that letter or
3 any other inquiry from the government, did you receive
4 responses from the various companies concerning the
5 government's idea to eliminate or reduce the asbestos
6 content in insulation products?

7 A The meeting that I cited in the middle of
8 September of '69, there was a piece of paper -- I guess
9 it was a letter -- that essentially noted procedures that
10 could be used to reduce the amount of asbestos dust while
11 working with asbestos primarily during removal or rip out
12 of asbestos from machinery or piping.

13 Q Did you have any specific contact with anybody
14 from Raybestos Manhattan concerning your attempt to find
15 a substitute or less percentage of asbestos content
16 insulation product?

17 A Representatives from that company came by once
18 or twice, you know, and we discussed the matter in much
19 the same way as we did or I had with several other
20 company representatives.

21 Q Were they anxious to find a substitute or did
22 they think that was feasible?

23 A It is kind of hard to read what they had in

1 mind. I think everybody gave lip service to coming in
2 with lower asbestos content insulation material.

3 It is hard to judge, and it would be a
4 judgment call as to how serious they took it or how hard
5 they worked to try to in fact implement their attempt,
6 their stated attempts to come up with lower asbestos
7 content material.

8 Q Did any manufacturers representative indicate
9 to you that it just couldn't be done?

10 A I don't think that anybody came out and said
11 unequivocally, there might be some indication.

12 As I recall -- I am trying to think of
13 specific conversations. I believe, to the best of my
14 knowledge at this point, that there are certain caveats
15 to being able to come up with a lower asbestos content
16 high temperature insulation material that in fact was
17 seaworthy.

18 The problem by some of those companies -- not
19 all of them -- some of them said they had it, but others
20 said it was very difficult to come up with something that
21 in fact would work.

22 By would work, I mean provide insulation and
23 still be able to withstand the rigors of shipboard use.

1 Q And what you have just told us is based upon
2 what the manufacturers representatives indicated to you
3 during these discussions?

4 A That is correct.

5 Q Did any of the asbestos manufacturers
6 representatives indicate that they weren't anxious to
7 have this elimination or substitution program go forward?

8 A No. They all gave lip service to the program
9 or whatever, whatever you want to call it -- say a
10 program, an effort. They all gave it lip service that --
11 it is essentially like motherhood, how can you argue
12 against it?

13 It is a judgment call as to whether it was
14 really seriously done.

15 Q What was your understanding in about 1969,
16 when you became involved in this project, as to the
17 health hazards associated with exposure to asbestos?

18 A My understanding was pretty much based on the
19 Selikoff view, that there seemed to be a link between the
20 two, between asbestos dust and lung cancer.

21 It was not taken as a given. It was not
22 proven unequivocally. There was certainly a good deal of
23 controversy about it.

1 My personal opinion was that it was serious
2 enough to try to do something about it.

3 Q While you were working on the elimination
4 program or your review of any specifications, did anyone
5 from Fiberboard Corporation ever indicate to you that
6 workers in their contract in construction units were
7 developing asbestos related diseases?

8 A Fiberboard Corporation? Not that I recall,
9 no.

10 Q Did anyone from Philip Cary either verbally or
11 in writing indicate to you during that same time period
12 that a medical consultant by the name of Thomas Marcuso
13 recommended in the 1960s that warning labels should be
14 placed on their asbestos insulation products?

15 A I don't recall that at this point. Again, a
16 lot of these things, perhaps they did happen, but I can't
17 recall it right now, considering the time period.

18 Q During any of the meetings that you had with
19 Raybestos Manhattan representatives, did anyone indicate
20 to you that their workers in their factories were making
21 claims for asbestos related diseases as early as the
22 1930s?

23 A No.

1 Q And during the numerous meetings that you had
2 with Pittsburg Corning representatives --

3 MR. FELDMAN: I object. I think that is a
4 gross mischaracterization of this witnesses' testimony.

5 MR. MULVEY: I will stand on the record.

6 BY MR. MULVEY:

7 Q Were you advised at any time by those
8 representatives that Richard Gaze in 1962 advised
9 Pittsburg Corning that unprotected exposure to asbestos
10 could cause lung diseases?

11 A No, sir, not that I know. They didn't tell me
12 that.

13 Q Do you know who Mr. Farina is?

14 A Yes.

15 Q Who is he, sir?

16 A He worked in I believe it was Code 6105 at
17 Naval Ship Engineering Center, and that was a safety --
18 he had a safety related job. Ship safety I believe was
19 the name of the code.

20 It had to do with something with ship safety.
21 He worked closely with Ed Cherobrier, and certainly I
22 knew him and I talked with him, too.

23 Ed Cherobrier and Mr. Farina worked fairly

1 closely with each other on the asbestos problem and on
2 other problems that related to ship safety.

3 Q Did Al Winer work with those people, also?

4 A I would only -- I presume he did, but that was
5 after my time.

6 Q Do you ever recall a conversation during that
7 first meeting where you indicated that a number of
8 asbestos manufacturers representatives were present,
9 anyone from H. K. Porter, indicating essentially that
10 asbestos containing materials had to continue to be
11 utilized for high temperature insulation?

12 MR. WATKINS: Just for clarification, you are
13 talking about the September, '69 meeting?

14 MR. MULVEY: Yes.

15 MR. WATKINS: I object to the form. I don't
16 think he said he was sure they were there.

17 MR. MULVEY: Let's ask that question.

18 BY MR. MULVEY:

19 Q Do you remember H. K. Porter officials being
20 present at that --

21 A I believe they were present there. I am
22 pretty sure they were present there. As a matter of
23 fact, the more I think about it, they were.

1 A Whether they said they had to continue to use
2 them for a time, that, I am trying to search my memory.
3 It was the general consensus that that was the case.

4 Whether H. K. Porter said it or someone else
5 or a combination, a group of manufacturers, that was
6 reflected in the fact that we took the approach of
7 reducing the amount of asbestos in high temperature
8 insulation, first, or that was the approach that we were
9 taking, to try to have the asbestos content reduced and
10 then finally have it -- the ultimately goal would be to
11 have eliminated completely.

12 Q And that approach was based upon the
13 industry's response that you couldn't eliminate it
14 immediately, but you had to try to reduce it slowly?

15 A By and large. Again, it has to be caveated by
16 saying that there are a couple -- some manufacturers who
17 said they had a product that was asbestos-free and that
18 could do the job and it was seaworthy, that had to be
19 tested, in my mind.

20 Q And was Mr. Cherobrier present at that first
21 meeting, September of '69?

22 A Certainly he should have been. I am not sure
23 that he was. It is possible he was on leave or for some

1 other reason he wasn't there.

2 I believe he was, and certainly it would have
3 been within his realm of interest.

4 Q Do you recall any other Navy person at that
5 meeting?

6 A Well, my boss, my second level supervisor I am
7 sure was there, Leon Birnbaum was there.

8 Q And you were asked this question partially
9 with respect to the period of 1969 to 1972, and I will
10 expand the question, and that is: Do you know of any
11 military specification or regulation that at any time
12 prohibited asbestos manufacturers or suppliers from
13 placing warnings on their packages or products concerning
14 any adverse health effects associated with them?

15 MR. ZEVRNIK: I will object, since that is not
16 within the witnesses' knowledge.

17 BY MR. MULVEY:

18 Q You may answer.

19 A Not that I know of.

20 MR. MULVEY: Thank you.

21 EXAMINATION BY MR. HIGBEE:

22 Q You stated you had a number of dealings with
23 NIMA in 1969 to 1972, is that right?

1 A There were some dealings, yes.

2 Q Was it John Barnhart that you dealt with?

3 A The name sounds familiar. I believe he was
4 the secretary for NIMA.

5 Q Was he the executive director, do you think,
6 during that period of time, perhaps executive director
7 for a period of time?

8 A Right, probably.

9 Q Do you remember any other officials of that
10 organization that you had contact with besides Barnhart?

11 A No, I can't name any. I think he was pretty
12 much the spokesman.

13 Q So any communication that you received from
14 NIMA would most likely come through him?

15 A Yes.

16 Q Would you agree with the statement that he
17 made in 1980, that NIMA assisted in the drafting of most
18 of the military specifications for thermal insulation
19 products?

20 A 1968.

21 MR. WATKINS: Objection.

22 MR. HIGBEE: Between 1968 and 1972.

23 MR. WATKINS: I object to the foundation,

1 since no specs were written during that time, that he
2 knows of.

3 BY MR. HIGBEE:

4 Q Do you have any knowledge as to whether that
5 statement is true during any period of time?

6 A I would say certainly NIMA was an important
7 contributee with anything that has to with do with
8 insulation.

9 MR. WATKINS: Objection to the speculation.

10 BY MR. HIGBEE:

11 Q Your predecessor you mentioned, was that Tom
12 Pagliesse?

13 A Right.

14 Q His predecessor was who? How did you
15 pronounce that fellow before him in the same job?

16 A I don't recall who that was before Tom. I
17 think I did hear the name. Let's see. Who was that?

18 I would have to search my memory.

19 Q Did you take over the same physical office of
20 Tom Pagliesse?

21 A Well, it was a big bay, you know.

22 Q Did you inherit it?

23 A I stayed in the same desk I had before.

1 Q Did you not inherit all his files and papers?

2 A Yes, I got the files, yes.

3 Q Did you progress in your job -- you had
4 occasion, did you not, from time to time, to go back
5 through the files that you inherited from him?

6 A Sure. As the situation required, yes.

7 Q Looking back through those files, did you ever
8 come across any communications with any industry
9 spokesman warning the Navy of any dangers associated with
10 the use of asbestos for any period of time?

11 A Not that I recall.

12 Q You mentioned at the time of the government
13 substitution program, which started in 1969, I believe --

14 MR. WATKINS: 1968.

15 BY MR. HIGBEE:

16 Q -- that you became aware, at least in the
17 early seventies, of the study being sponsored by
18 Pittsburg Corning in California?

19 A Yes, that is right. I am not sure if I became --
20 yes, I became aware of it I guess in the early seventies,
21 that is correct.

22 Q Did any representative of Pittsburg Corning
23 ever ask the government, your offices particularly, to

1 hold off on the alteration of the specifications until
2 that study was complete?

3 MR. FELDMAN: Objection, unless the question
4 is going to be answered from Mr. Murad's own personal
5 knowledge.

6 THE WITNESS: Yes, I did attend one meeting at
7 Bureau of Medicine and Surgery in which a Pittsburg
8 Corning representative did -- let's see, I am not sure
9 how he put it -- but essentially pointed out that the
10 study was ongoing and that results were coming in, but
11 that it would take a little longer than originally
12 anticipated to get the final report.

13 It was either stated or understood that that
14 therefore would be advantageous for government to hold
15 off for a little while before taking any further action,
16 at least to take into account the results of that study.

17 BY MR. HIGBEE:

18 Q Any further action --

19 A It wasn't so much directed to me, but more due
20 to the immediate community, but I was there.

21 Q Any further action with respect to that?

22 A Well, to amending any specifications or coming
23 out with any directive that would have the affect of

1 reducing the amount of asbestos in insulation material.

2 MR. HIGBEE: Thank you. That is all I have.

3 MR. WATKINS: I have a few.

4 EXAMINATION BY MR. WATKINS:

5 Q Mr. Murad, my name is Will Watkins. I will
6 try to speak up so you can hear me.

7 A Yes.

8 Q Who was it from H. K. Porter that was
9 represented at NIMA?

10 A I don't know the name. I can't even remember
11 the gentleman who came by from time to time representing
12 H. K. Porter, although he did come by and I do recall, I
13 can visualize him, but I can't recall his name, to be
14 quite honest with you.

15 Q Have you ever heard of a product called
16 Tempmat?

17 A Tempmat? It was a cloth, wasn't it?

18 Q You don't really know one way or the other?

19 A As I recall, that was an asbestos cloth. It
20 may have been the batting. It could have been the
21 batting.

22 Q Do you know what it contained?

23 A Yes.

1 A I believe that product had asbestos in it.
2 Here again, I am trying to remember from 12 or 15 years
3 ago.

4 Q Was that the product that H. K. Porter Company
5 brought by and showed you?

6 A It is possible, but I really don't know for
7 sure.

8 Q When was that product brought by?

9 A Well, the product I was referring to -- and I
10 don't remember the name of it -- it may have been
11 Tempmat, it may have been something else -- it was
12 brought by I'd say in about the middle of '70 to '71 time
13 frame.

14 Q Do you know what specification it was under or
15 would have been under?

16 A I think it had to do with that -- now, there
17 was a specification that described a batting material. I
18 don't think it is 466. I think that is cloth.

19 I don't remember the specific number of the
20 spec.

21 Q When this material that you were speaking of
22 was brought by, you were aware of the Selikoff study?

23 A Yes.

1 Q When you attended the meeting in September of
2 1969 of NIMA, you mentioned the fact that the
3 manufacturers or someone prepared a paper which set out
4 ways to decrease the amount of asbestos dust in the air
5 by proper ways of handling the material?

6 A That is right. I am not sure if it was NIMA
7 per se, but certainly there were representatives of a
8 couple of manufacturers there.

9 Q Was that the first time you were aware of any
10 such regulation on the means of handling asbestos
11 material or insulation?

12 MR. MULVEY: Objection to the word
13 regulations.

14 THE WITNESS: Okay. Well, I knew that there
15 was a team surveying shipyards that had the goal of
16 reducing the amount of asbestos dust in shipboard
17 atmospheres.

18 I didn't know what the specific
19 recommendations would be. It turned out that the results
20 of that survey and the information that was gained at
21 that September, '69 meeting with the industrial folks
22 were both used to put together that instruction, as I
23 recall, the instruction 50100.26.

1 Q So either NIMA or the industry or whoever it
2 was was working with government to teach or prepare
3 industry to reduce dust on shipboard insulation?

4 A We did have some input, yes.

5 Q During your time, from 1969 to 1972, did you
6 ever make contact with any naval shipyard concerning
7 asbestos elimination or asbestos installation and its
8 health hazards?

9 A Yes. I visited three or four shipyards to
10 determine how well they were complying with that
11 instruction, 50100.26.

12 Q I believe to a prior question -- and,
13 certainly, correct me if I am wrong -- you stated that
14 when you were amending a specification, one of the early
15 processes would be you would prepare the amendment and
16 Mr. Birnbaum, I believe, would sign the amended spec,
17 which was sent out to all interested entities?

18 A Yes. I did say that. I have been thinking
19 about that. That would be one way of doing it,
20 certainly. Whether you could get by some other way to
21 get the coordination that was needed, I think we had
22 other ways of doing it, too.

23 You could just carry around -- when you say

1 the amended spec, it would be a proposed amendment.

2 Q Proposed?

3 A Yes. You could just carry it around to the
4 various parties involved. If it went outside the Navy,
5 Naval Ship Engineering Center, then there should be a
6 letter, and I would say Birnbaum would be the one to sign
7 that out.

8 Q That information, again, would also go to
9 shipyards?

10 A Yes. If it went outside the headquarters --
11 well, at that time, Naval Ship Engineering Center.
12 Another possible signatory could be the specification
13 office, you know, the one that Jean Harmon headed up.

14 So it is possible that it went out under
15 6124's signature.

16 Q If a comment came in from industry, did your
17 office have the option to -- and I think I understood
18 this right -- to incorporate, resolve or reject the
19 comment?

20 A Well, the comments were categorized into two
21 areas. One was essential comments, the other was
22 nonessential.

23 For the nonessential, we could arbitrarily

1 discount them, but we rarely did. Out of courtesy, we
2 would address the issue with the commentor.

3 For the essential comment, we were required to
4 address the issue and resolve it, either incorporate it
5 as it was stated or discuss the matter with the office
6 that supplied the comment and resolve it by coming to
7 some compromise or convincing the person who submitted
8 the comment to withdraw the comment; but it had to be
9 addressed and we had to document how it was handled.

10 Q The product that you spoke about that was sent
11 to you by H. K. Porter, did you all reject that product?

12 A Well, that wasn't -- there wasn't a
13 specification amendment written to it.

14 As I recall, I gave it that quick test. I
15 didn't mean to try to belittle it, because it was a good
16 effort, but it just was too dusty.

17 I pointed that out to the rep and he said,
18 well, yeah, it does seem to be some dust there. I can't
19 recall the specific words, but, to the best of my
20 recollection at this point, I got the impression that he
21 would take it back to his company and ask them to improve
22 on it.

23 That is basically it.

1 Q That is resolving the problem. Was that the
2 type of resolving --

3 A That was not a written comment. That was a
4 sample that was brought in on their own initiative,
5 brought it in and said this is a material that has, as I
6 recall, a lower asbestos content.

7 It wasn't completely asbestos-free. It was a
8 lower asbestos content material. It was supposed to be
9 suitable for shipboard use.

10 One of the factors involved would be, of
11 course, to determine just how much dust would be given
12 off to the atmosphere, the immediate atmosphere, when it
13 was subjected to the shock and vibration of the ship.

14 Of course, that is why I shook it hard and
15 threw it against the wall, to try to simulate, as best I
16 could -- we didn't have -- we didn't have a testing
17 laboratory, so someone brings something in and you give
18 it what I consider a choke point test.

19 You give it a quick test that you can do
20 sitting in an office or wherever, just to find out what
21 some of the major features are.

22 Q What other mineral or material was in that
23 piece?

1 A That, I don't know. I presume there was some
2 fiberglass in there.

3 Q You didn't make a determination of the mineral
4 content of that dust?

5 A No, no. I had no test capability whatsoever.
6 I had a desk and that is it. It is like sitting here at
7 the table trying to determine what the nature is in that
8 water.

9 You look at it, you smell it, take a little
10 sip. If you think it is suitable, you drink it.

11 MR. WATKINS: That is all the question I have
12 for you. Thank you.

13 MR. ZEVNIK: I have a few more.

14 EXAMINATION BY MR. ZEVNIK:

15 Q This September, 1969 meeting, that was here in
16 Washington?

17 A Yes, it was.

18 Q And this was at or under the auspices of the
19 Navy?

20 A Yes. It was in the Navy office, that is
21 correct.

22 Q In Crystal City -- Crystal City probably
23 wasn't there then.

1 A No. We were at Hyattsville at that point.

2 Q At the Hyattsville Center in Prince Georges
3 County?

4 A Yes.

5 Q Do you recall if any notes were taken or
6 minutes were taken of the September, 1969 meeting?

7 A My recollection, there were no notes taken. I
8 didn't take any notes, I know that. If someone else did
9 or not, I don't know. I don't think so.

10 I don't think there were any that was
11 published. Maybe some of the people there had taken some
12 of their personal notes and put it in their file.

13 Q Do you recall who else from the Hyattsville
14 Center was there?

15 A I know Leon Birnbaum was there. Probably Ed
16 Cherobrier was there. I am not sure if Tom Pagliesse was
17 there or not.

18 I think he was in a new job at the time.

19 Q In your capacity as head of codings and
20 materials from 1969 to '72, I think you stated that you
21 received from time to time defficiency reports from the
22 Navy shipyards, is that right?

23 A That is correct.

1 Q What would the nature of these deficiency
2 reports be?

3 A Well --

4 Q Let me rephrase that.

5 A Sure.

6 Q Was there a specific Navy form that these
7 deficiency reports came in on?

8 A Yes, this is a form. As I recall, it is on
9 the back pages of a specification, but they were -- no
10 one was held or required to use it. They could use it.
11 They could use a letter. They could just call the
12 information in by phone.

13 Q If there was a form that was used, do you
14 recall the number, the Navy number for that form?

15 A No.

16 Q Was it a printed form?

17 A It was, basically, as I recall, almost
18 entirely a plain sheet of paper with a couple of
19 questions that were required -- I shouldn't say required,
20 but you could answer a few questions that were posed.

21 As I recall, as I mentioned, it was the last
22 page or so of a specification.

23 Q Do you know who in the navy shipyards would

1 have completed these deficiency reports?

2 A Normally, it would have been completed by Shop
3 56. It was the shop that installed insulation on board
4 ships.

5 Q And these deficiency reports would point out
6 problems that you had with insulation materials, is that
7 right?

8 A Yes, that would be the nature of it, right.

9 Q Or defects in the materials, is that correct?

10 A That was the intent, that is correct.

11 Q Do you ever recall receiving a deficiency
12 report stating that there was a problem with asbestos in
13 the insulation materials being used by the Navy?

14 A I don't recall them. I might say we didn't
15 get too much deficiency reports. There were a few.

16 MR. LEVNIK: Thank you.

17 MR. FELDMAN: I have just a couple of
18 questions, if I may.

19 EXAMINATION BY MR. FELDMAN:

20 Q I believe in response to a question, you
21 indicated during the time that you worked in the codings
22 unit you would rely upon technical data received from
23 industry with respect to the procedure that a

1 specification might otherwise be amended, is that
2 correct?

3 A Yes. We would get comments from industry,
4 that is correct.

5 Q Was industry the sole source of technical data
6 that you would have received at the time?

7 A I won't say it was necessarily the sole
8 source. I would say they were certainly an important
9 source.

10 Q Would you have received technical data from
11 ultimate users?

12 A Yes. They were asked to comment.

13 Q Would this technical data have been received
14 from governmental agencies?

15 MS. KROOP: This was asked and answered.

16 MR. FELDMAN: I don't believe so.

17 THE WITNESS: We would certainly circulate it
18 to all interested parties, including other government
19 agencies, primarily other military, and ask for comments.

20 MR. FELDMAN: I have no further questions.

21 MS. KROOP: I have a few further questions.

22 EXAMINATION BY MS. KROOP:

23 Q You were talking about essential and

1 nonessential comments before. Who labeled comments as
2 essential and nonessential?

3 A The person who submitted the comment.

4 Q So industry comments would be labeled by
5 industry as essential or nonessential?

6 A That is correct.

7 Q And then when you reviewed comments, did you
8 have to report about your review you do to a supervisor?

9 A Well, we would put together what amounted to a
10 folder or package that would identify all the incoming
11 comments and the resolution or whatever happened to them,
12 and it would be -- it would certainly go through our
13 supervisors and on up to the specification office.

14 Q Was that the Specification Control Board?

15 A Ultimately, it would go to them, but it goes
16 through Code 6124, or whatever that code really is.

17 As I recall, it is 6124.

18 Q You were answerable to report your treatment
19 of comments to your supervisors at the Control Board, is
20 that correct?

21 A Sure.

22 Q Let me just ask you one more question, again,
23 addressing the 1969 to 1972 period. If the asbestos

1 industry had come to you with an asbestos-free or low
2 asbestos material that had met the Navy's need for
3 thermal insulation and performed as well as an asbestos
4 product, would the Navy have amended the specs to permit
5 the use of that material?

6 MR. ZEVNIK: I object. There is no foundation
7 for that.

8 MS. KROOP: I am asking for this witnesses'
9 knowledge.

10 MR. ZEVNIK: It calls for speculation and I
11 object. It is a hypothetical question.

12 BY MS. KROOP:

13 Q Do you want me to repeat the question?

14 A Maybe you better.

15 MR. MULVEY: How about reading it.

16 MS. KROOP: Would you have it read back. I
17 have a second part to that question, too. Read the
18 question back.

19 (Thereupon, the following question was
20 read back by the court reporter:

21 QUESTION: Let me just ask you
22 one more question, again,
23 addressing the 1969 to 1972

1 period. If the asbestos industry
2 had come to you with an
3 asbestos-free or low asbestos
4 material that had met the Navy's
5 need for thermal insulation and
6 performed as well as an asbestos
7 product, would the Navy have
8 amended the specs to permit the
9 use of that material?)

10 THE WITNESS: I would say yes, provided that
11 there was some confidence that the claims were in fact
12 the case.

13 BY MS. KROOP:

14 Q Where would that confidence come from?

15 A It would have to come from industry. We would
16 have to see some test reports. We had no other source of
17 testing.

18 Q With regard to the same question, would the
19 Navy have required the use of that material instead of
20 asbestos materials?

21 A Probably, I would say, sure.

22 MS. KROOP: Thank you.

23 MR. ZEVIK: I want to take a five-minute

1 break, if I could. I may want some more questions.

2 (Thereupon, there was a recess taken,
3 after which the following proceedings
4 were had:)

5 MR. ZEVNIK: I don't have any further
6 questions.

7 (Thereupon, at 5:00 o'clock, p.m.,
8 the taking of the deposition was
9 concluded.)

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AFFIDAVIT OF DEPONENT

I have read the foregoing _____ pages, which contain a correct transcript of the answers made by me to the questions therein recorded.

Henry G. Murad

Subscribed and sworn to before me this

_____ day of _____, 1984, in _____

Notary Public in and for the State
of Virginia at Large

My Commission Expires:

_____, 19 ____.

CERTIFICATE OF NOTARY PUBLIC

I, Nancy Siegel, the officer before whom the foregoing deposition was taken, do hereby certify that the witness whose testimony appears in the foregoing deposition was duly sworn by me; that the testimony of said witness was taken by me in shorthand and thereafter reduced to typewriting under my supervision; that said deposition is a true record of the testimony given by said witness; that I am neither counsel for, related to, nor employed by any of the parties to the action in which this deposition was taken, and further that I am not a relative or employee of any attorney or counsel employed by the parties thereto, nor financially or otherwise interested in the outcome of the action.

Nancy Siegel, Notary Public for the
State of Virginia at Large

My Commission Expires:

July 13, 1986