

INDUSTRIAL SAFETY EQUIPMENT ASSOCIATION, INC.
2425 Wilson Boulevard
Arlington, Virginia 22201

SAFETY WEARING APPAREL GROUP MEETING
MONDAY, MARCH 18, 1974
WM PENN HOTEL
PITTSBURG, PENNSYLVANIA

PLAINTIFF'S EXHIBIT

SAG-81

M I N U T E S

I. CALL TO ORDER at 10:50 A.M. by Chairman Thomas

II. PRESENT

R. P. Flynn	American Optical Corporation
R. Looper	Best Manufacturing
L. Goldstein	Durafab Disposables
D. J. Clark	Edmont Wilson
R. M. Thomas	Edmont Wilson
B. Shepard	Gentex Corporation
J. A. Casey	Granet Corporation
R. M. Ladick	Mine Safety Apparel
F. Rex	Pulmosan Safety Equipment
G. Heard	Safety Clothing & Equipment
G. W. Herzberger	Safety Clothing & Equipment
D. Houston	Safety Clothing & Equipment
G. G. Dickson	Standard Safety Equipment
D. Mayoras	Steel Grip Safety
H. L. Wheeler	Wheeler Products
R. Sager	The Sager Glove Corp.
C. H. Sumwalt, Jr.	ISEA Secretary-Treasurer

<u>GUESTS:</u>	L. A. Nicodemus	Bendix Launch Support Division
	W. Franklin	Keller Glove Co.
	W. Schliecher	Keller Glove Co.

III. MINUTES OF THE MEETING OF MARCH 13-14, 1973

Upon motion of Mr. Dickson and seconded by Mr. Casey the Minutes of the subject Meeting were unanimously approved as distributed.

IV. SYNSIS REPORT

Mr. Thomas indicated a review of the report of this NIOSH contractor was scheduled for this meeting but that we have been unable to secure a copy of the interim report they made to NIOSH. It was noted that this contract has been cancelled by the contracting officer and Mr. George Dickson indicated that he will check on the status the next time he is in Los Angeles where SYNSIS is located.

(Secretary's Note - The Secretary attempted to secure an indication from Mr. Jeff Kamin at the NIOSH Laboratories in Cincinnati on the status of this report but was unable to secure any definite commitment.)

V. L-18 Standard

Several members questioned the status of the L-18 Standard and Mr. Sumwalt reported that it has just recently been reactivated with the American Petroleum Institute as the sponsoring Secretariat and that Mr. McKenna of A.P.I. will function as the General Secretary.

VI. REPORT BY MR. L. A. NICODEMUS - BENDIX LAUNCH SUPPORT DIVISION

There is attached to and made apart of these Minutes the formal paper presented by Mr. Nicodemus. Copies of which were distributed to all members present. A limited supply of this paper is available in the Secretary's office for those who may not have received same. Please send your request. His informal presentation was followed by a very active and informative question and answer period which had the additional effect of disclosing to Mr. Nicodemus that the ISEA Safety Wearing Apparel Group members are extremely anxious to cooperate with his office. He suggested that any members with specific questions can reach him at Bendix Launch Support Division, Specialty Projects Office, 1355 North Atlantic Blvd., Cocoa Beach, Florida 32931.

Mr. Nicodemus received a copy of the Safety Wearing Apparel Group list and indicated that he would be calling from time to time upon members, as they might help in answering questions during their study. It is important to note that Mr. Nicodemus stated that the original contract has approximately 3 more months to go and he is hopeful that it may be followed by supplemental contracts by NIOSH.

VII. PUBLIC RELATIONS COMMITTEE ACTIVITIES

Mr. Thomas is a member of the ISEA Public Relations Committee. He opened the floor to discussion on this topic. Reference was made to the proposal from the public relations firm of Hill & Knowlton in New York City re: a publicity program that would be woven around the central theme of the cost of testing and certification in NIOSH's Morgantown laboratory. Mr. Casey indicated that there is a great question in the minds of the Board of Trustees whether the ISEA can afford such a program which will be in high 5 dollar figures. He expressed the hope that this meeting would lend some suggestions to the PR Committee.

Among the topics discussed at length, not necessarily in order of importance, are the following:

- a) Cost of the testing and certification laboratory will be extensive and the lack of uniformity in States Standards can make it imperative that Federal Standards apply.
- b) It is suggested that the PR Committee convey to NIOSH that the manufacturers are and will continue to cooperate with NIOSH contractors in the development of any product standards.
- c) Mr. Wheeler led a discussion on the desirability of articles being written for magazines in the safety field which would put forth the advantages of the wearing apparel manufacturers willingness to cooperate.

- d) A Speakers Bureau received discussion as a possible avenue of approach in publicizing the ISEA contribution - before such bodies as the American Society of Safety Engineers; National Safety Council Local Chapters; Veterans of Safety and any other users association meetings before whom presentations could be made by selected members of a Speaker's Bureau from the group.
- e) The role of the private sector standard; was discussed at length and question of does ISEA want voluntary clothing standards or should we merely await what comes from NIOSH. It was noted that it is very necessary to enter into a program of education to get workers to understand the necessity for proper safety wearing apparel. This topic further disclosed the need to educate both employers and employees on the need of replacement and refurbishing of apparel once its useful life has been reached. Consensus of the meeting seemed to revolve around education of workers as the main thrust of an ISEA publicity campaign regarding wearing apparel. It was clear that no solution was reached on the manner or method of implementing this educational process. Reprint articles were named as potential sources of dissemination of data to interested parties, releases to the industry trade journals and users Journals. Mention was made of 35 mm tape presentations with a sound track which could be loaned to major users and organized groups of safety professionals and other such means.

It was agreed that Mr. R. M. Thomas will appoint a committee for a proposed presentation to the Safety Wearing Apparel Group on the text and method of dissemination of the Safety Wearing Apparel story for consideration by the total group by the time of the next Annual Meeting. He indicated that it would be his intention to see that the recommendations were distributed by mail to all members of the group in order to allow study before the next meeting of the group.

Mr. Thomas received unanimous agreement that he would act as a committee of one to write a news release concerning this particular meeting and the address by Mr. Nicodemus, in concert with the Secretary's office. He noted further that the draft would be submitted to him for approval and following that should be sent out by the Secretary to the three major journals in safety.

VIII. MEMBERSHIP ACTIVITIES

Mr. Thomas again took the opportunity to welcome the two gentlemen from Keller Glove and expressed his pleasure at their being present.

Mr. Wheeler presented a summary of his activities with respect to increasing membership and led a discussion of the various companies whom he had contacted or had been contacted by others regarding ISEA membership. (Secretary's Note - Mr. Wheeler indicated that he would send a copy of this summary to the Secretary's office for distribution at some future date. As of this writing this summary has not been received.)

IX. ASBESTOS REPORT

Mr. Sager gave a summary of his activities with Mr. John Marsh, Vice President of the Asbestos Information Association, and their efforts to corroborate with OSHA on the work practices in the handling of asbestos. He indicated that there is hope that a new Standard will be published by OSHA by the end of 1974.

A discussion took place of the present indication that the Standard will be reduced by 2 particles by 1976 which will not be as stringent on clothing manufacturers as those handling raw asbestos in insulating application operations. The question was asked by Mr. Heard whether or not ISEA should pursue a further course of action in hiring an industrial hygienist to assist all ISEA members in evaluating the asbestos count in their plants. In this connection, Mr. Rex indicated that the method of membrane filter magnification is not accurate unto itself and wondered at the value of such an evaluation program. No decision was reached on this matter at this time.

X. STATISTICAL REPORTING

It was noted by the Chairman and Mr. Casey that Eye Protection Group has now entered into a statistical reporting operation and the question was asked if the Wearing Apparel Group members favored design of a plan to assist in their particular group. A brief discussion took place on the problem of imports but following this no decision was reached with respect to entering into statistical reporting.

XI. ADJOURNMENT

Upon motion of Mr. Casey and seconded by Mr. Dickson the meeting was unanimously adjourned at 4:15 P.M.

Respectfully Submitted, .

C. N. Sumwalt, Jr.
Secretary-Treasurer

PROTECTIVE CLOTHING - ASSESSMENT OF NEED

PAPER PRESENTED TO: INDUSTRIAL SAFETY EQUIPMENT ASSOCIATION
CONFERENCE

DATE: 18 MARCH 1974

PRESENTED BY: L. A. NICODEMUS
BENDIX LAUNCH SUPPORT DIVISION
COCOA BEACH, FLORIDA

THE LAUNCH SUPPORT DIVISION OF THE BENDIX CORPORATION IS CURRENTLY ENGAGED IN A RESEARCH PROJECT UNDER CONTRACT TO THE NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH. THE TITLE OF THE CONTRACT IS PROTECTIVE CLOTHING - ASSESSMENT OF NEED. FOUR MAJOR CATEGORIES ARE DELT WITH IN THE CONTRACT. THEY ARE:

- DETERMINING THE NEED FOR VARIOUS TYPES OF PROTECTIVE CLOTHING BASED ON WORKER EXPOSURE TO TYPICAL WORKING ENVIRONMENTS IN VARIOUS INDUSTRIES.
- EVALUATING THE PRESENT STATE-OF-THE-ART TO DETERMINE THE EXTENT NEEDS CAN BE MET BY PRESENTLY AVAILABLE PROTECTIVE CLOTHING, AND DETERMINING THE AREAS WHERE PROTECTIVE CLOTHING IS UNAVAILABLE.
- EVALUATING AND DEFINING AREAS WHERE PROTECTIVE CLOTHING IS PRESENTLY AVAILABLE, BUT IS UNSATISFACTORY BECAUSE OF POOR PERFORMANCE OR LACK OF WORKER ACCEPTANCE.
- ESTABLISHING A PLAN FOR PRIORITY RANKING THE NEED FOR DIFFERING TYPES OF PROTECTIVE CLOTHING IN THE VARIOUS INDUSTRIES.

ONLY TORSO PROTECTIVE CLOTHING ITEMS ARE BEING CONSIDERED IN THE STUDY. INDIVIDUAL COMPONENTS SUCH AS GLOVES, SHOES, HELMETS, RESPIRATORS, EYE AND FACE PROTECTIVE DEVICES ARE NOT BEING

INCLUDED UNLESS THEY ARE A PART OF AN ENSEMBLE USED TO PROVIDE THE WORKER FULL BODY PROTECTION. SAFETY AND HEALTH PROTECTIVE DEVICES AFFIXED TO EQUIPMENT OR FACILITIES ARE NOT INVOLVED IN THE STUDY, NOR ARE FIREFIGHTING ENSEMBLES.

A MAJOR PURPOSE OF THE STUDY IS TO FORMULATE A SYSTEM THAT WILL ESTABLISH PRIORITIES FOR RESOLVING THE PROTECTIVE CLOTHING NEEDS OF THE WORKER. IN ORDER TO ACCOMPLISH THIS PURPOSE THE BENDIX LAUNCH SUPPORT DIVISION IS CONDUCTING A RESEARCH AND ANALYSIS EFFORT TO PROVIDE HEW/NIOSH WITH RELIABLE INFORMATION ON THE NEED FOR PROTECTIVE CLOTHING IN ALL THE PERTINENT INDUSTRIAL/OCCUPATIONAL ENVIRONMENTS EXCEPT FIREFIGHTING. THE EFFORT USED AS A BASIS, BUT WAS NOT LIMITED TO, A LIST OF 27 INDUSTRIAL/OCCUPATIONAL AREAS INCLUDED IN THE ORIGINAL CONTRACT. THESE INDUSTRIAL/OCCUPATIONAL AREAS WERE:

- CHEMICAL AND ALLIED PRODUCTS
- PIG IRON PRODUCTION
- METAL SMELTING
- ASBESTOS OPERATIONS
- COAL MINING
- METAL MINING
- VEHICLE PRODUCTION
- GLASS PRODUCTION
- CONSTRUCTION
- PAINTING OPERATIONS
- STEEL MILLS
- ABRASIVE AND BUFFING OPERATIONS
- SILICA DUST GENERATING OPERATIONS
- METAL FABRICATIONS
- LUMBER AND WOOD PRODUCTS
- X-RAY OPERATIONS
- HEAT STRESS INVOLVEMENT OPERATIONS

- PUBLIC UTILITIES
- BACTERIAL INVOLVEMENT OPERATIONS
- RUBBER AND TIRE PRODUCTION
- WELDING OPERATIONS
- MACHINE TOOL PRODUCTION
- OIL REFINING
- BAKERIES
- BERYLLIUM OPERATIONS
- PESTICIDE AND INSECTICIDE SPRAYING
- URANIUM MINING

THE HAZARD AREAS BEING CONSIDERED DURING THE STUDY WERE STATED IN THE ORIGINAL CONTRACT AS; MECHANICAL, CHEMICAL, THERMAL, ELECTRICAL, BIOLOGICAL, AND RADIOLOGICAL. IT WAS FELT THAT FURTHER CLARIFICATION OF THE HAZARD AREAS WAS DESIRABLE IN THE EVALUATIONS. EACH HAZARD WAS SUBSEQUENTLY BROKEN DOWN INTO A HAZARD INDEX. AN EXAMPLE OF THIS BREAKDOWN CAN BE SEEN IN THE ELECTRICAL HAZARDS INDEX. THREE CLASSIFICATIONS WERE INSTITUTED FOR EACH HAZARD, THE FIRST OR THE PHYSICAL CLASSIFICATION, WHICH, IN THE CASE OF THE EXAMPLE, WAS SUB-CLASSIFIED AS ALTERNATING CURRENT, DIRECT CURRENT, AND STATIC ELECTRICITY. THE SECOND OR ELECTRICAL CLASSIFICATION WAS SUB-CLASSIFIED AS SAFETY LOW VOLTAGE BETWEEN 0 AND 24 VOLTS, LOW VOLTAGE BETWEEN 25 AND 600 VOLTS, AND HIGH VOLTAGE FROM 601 VOLTS AND UP. PHYSIOLOGICAL CLASSIFICATIONS WERE THE THIRD. THIS CLASSIFICATION CAN BE STATED AS THE INJURIES WHICH COULD BE EXPECTED FROM EXPOSURE TO THE HAZARD. PHYSIOLOGICAL CLASSIFICATIONS FOR THE EXAMPLE WERE:

- SHOCK WITH LIGHT MUSCULAR CONTRACTION
- SHOCK WITH LIGHT TO MODERATE MUSCULAR CONTRACTION, POSSIBLE CARDIAC ARREST.
- SHOCK WITH SEVERE MUSCULAR CONTRACTION, CARDIAC ARREST HIGHLY LIKELY.

- FLASH BURNS
- DESTRUCTION OF NERVES, TISSUES, AND MUSCLES FROM HIGH AMPERAGES.
- SPARK GENERATION WHICH COULD IGNITE EXPLOSIVE ATMOSPHERES, LIQUIDS, OR SOLIDS.

DETERMINING THE NEED FOR VARIOUS TYPES OF PROTECTIVE CLOTHING IS BEING ACCOMPLISHED BY FIELD SURVEYS AND THE COLLECTION OF WORK INJURY DATA. VISITS TO 130 COMPANIES IN 6 GEOGRAPHICAL AREAS OF THE UNITED STATES BY TRAINED FIELD SURVEY REPRESENTATIVES WERE ACCOMPLISHED TO PERFORM THE FIELD SURVEY PORTION OF THE CONTRACT. THE DESIRE TO WITNESS SPECIFIC INDUSTRIAL/OCCUPATIONAL AREAS DICTATED THAT THE FOLLOWING AREAS BE VISITED:

- AREA #1 FLORIDA
- AREA #2 SOUTH EAST ATLANTA
- AREA #3 DETROIT, MICHIGAN
- AREA #4 CLEVELAND, OHIO AND PITTSBURG, PENNSYLVANIA
- AREA #5 NEW YORK STATE
- AREA #6 BUTTE, MONTANA, SALT LAKE CITY, UTAH, AND DENVER, COLORADO

THE 130 COMPANIES SURVEYED IN THESE 6 AREAS REPRESENTED APPROXIMATELY 94,000 EMPLOYEES. AN ARBITRARY DIVIDING POINT OF 50 EMPLOYEES TO DIFFERENTIATE BETWEEN LARGE AND SMALL COMPANIES WAS ESTABLISHED. USING THIS DIVIDING POINT, 71 SMALL COMPANIES AND 59 LARGE COMPANIES WERE VISITED.

SURVEY DATA FORMS WERE COMPLETED BY THE FIELD SURVEY REPRESENTATIVE FOR EACH COMPANY SURVEYED. THE DATA FORMS WHEN COMPLETED CONTAINED SUCH DATA AS:

- THE HAZARDS OBSERVED

- THE TYPES OF PROTECTIVE CLOTHING EQUIPMENT OBSERVED IN USE DURING SPECIFIC HAZARDOUS OPERATIONS.
- THE COMPANY'S POLICIES REGARDING PROTECTIVE CLOTHING.
- PROTECTIVE CLOTHING MAINTENANCE PROGRAMS OF THE COMPANY.
- WORKER'S COMMENTS ON THE EFFICIENCY OF THE PROTECTIVE CLOTHING UTILIZED AND ITS ACCEPTABILITY TO WORKERS.

RESEARCH TO COLLECT WORK INJURY DATA IS CONTINUING. TO DATE 15 STATES HAVE BEEN CONTACTED FOR WORKMEN'S COMPENSATION REPORTS AND ANALYSIS. OHIO, NEW YORK, CALIFORNIA AND FLORIDA HAVE RESPONDED WITH THE DATA REQUESTED, WHILE 3 STATES HAVE INDICATED THEY HAVE NO PUBLICATIONS WITH THE DATA REQUESTED. NINE STATES HAVE NOT RESPONDED TO THE DATA REQUESTS. PRELIMINARY REVIEW OF WORKMEN'S COMPENSATION DATA REVEALED THAT MUCH USEFUL INFORMATION WAS CONTAINED IN THEM, SUCH AS DISABLING INJURY FREQUENCY AND SEVERITY RATES OF THE VARIOUS INDUSTRIAL/OCCUPATIONAL AREAS. HOWEVER, THE INFORMATION WAS NOT DETAILED ENOUGH TO RELATE THESE RATES TO THE USE OF PROTECTIVE CLOTHING OR THE ABILITY OF PROTECTIVE CLOTHING TO PROVIDE INJURY PROTECTION TO THE WORKER.

SEVERAL ALTERNATIVE METHODS OF OBTAINING THE NEEDED DATA WERE ATTEMPTED. DURING EACH FIELD SURVEY AN INTERVIEW WITH THE COMPANY MANAGEMENT WAS PERFORMED. ACCIDENT DATA, SUCH AS FREQUENCY AND SEVERITY RATES, OR ACTUAL ACCIDENT REPORTS, WAS REQUESTED. IN EACH CASE THE COMPANY'S MANAGEMENT REFUSED TO RELEASE THE DATA BECAUSE OF A FIRM CONVICTION THAT THE INFORMATION WAS OF A VERY SENSITIVE NATURE, AND THE FEAR THAT OSHA MIGHT INSPECT AS A RESULT OF THIS INFORMATION.

FORTY FIVE PROTECTIVE CLOTHING MANUFACTURERS WERE CONTACTED BY LETTER ASKING FOR ANY INFORMATION THEY MAY HAVE ON INSTANCES WHERE INJURIES WERE REDUCED OR PREVENTED BY THE USE OF THEIR

PRODUCTS. INCLUDED IN THE LETTER WAS A REQUEST FOR BROCHURES AND CATALOGS ON THEIR PRODUCTS. RESULTS TO DATE HAVE BEEN DISAPPOINTING. LESS THAN 20% OF THE COMPANIES CORRESPONDED WITH HAVE ACKNOWLEDGED THE REQUESTS BY PROVIDING BROCHURES OR CATALOGS. TWO OF THESE COMPANIES ACKNOWLEDGED THE REQUEST FOR DATA ON INJURIES BY STATING THEY DID NOT HAVE THE DATA ASKED FOR.

IN VIEW OF THE NEGATIVE RESULTS OF THESE ATTEMPTS AT MORE DEFINITIVE INFORMATION, SEVERAL DIVISIONS OF THE BENDIX CORPORATION WERE CONTACTED TO OBTAIN COPIES OF FIRST REPORT OF ACCIDENT FORMS OF ACTUAL ACCIDENTS FOR THE YEAR 1973. THIS INFORMATION WAS RELEASED FOR OUR USE AND HAS BEEN VERY USEFUL. HOWEVER, THE DATA HAS BEEN LIMITED AS MANY OF THE FORMS REVIEWED WERE NOT COMPLETELY FILLED IN, LEAVING OUT IN SOME INSTANCES SUCH ITEMS AS HOW THE ACCIDENT OCCURRED, LENGTHS OF DISABILITY, AND CONTRIBUTING FACTORS. FURTHER EFFORTS ARE BEING CONDUCTED TO GATHER THE INFORMATION NEEDED.

WHEN DATA COLLECTION AND ANALYSIS FROM THE FIELD SURVEY AND ACCIDENTS DATA IS COMPLETED, MATRIXES WILL BE DEVELOPED TO IDENTIFY THE TYPES OF HAZARDS BY LEVEL AND SEVERITY IN EACH INDUSTRIAL/OCCUPATIONAL AREA. THE SURVEY AND ACCIDENT DATA WILL ALSO BE EVALUATED FOR:

- TYPES OF PROTECTIVE CLOTHING WORN VERSUS TYPES OF PROTECTIVE CLOTHING REQUIRED FOR ADEQUATE PROTECTION.
- WORKER ACCEPTANCE

THE TASKS OF EVALUATING THE PRESENT STATE-OF-THE-ART TO DETERMINE THE EXTENT TO WHICH NEEDS CAN BE MET BY AVAILABLE PROTECTIVE CLOTHING, AND THE AREAS FOR WHICH PROTECTIVE CLOTHING

IS NOT AVAILABLE ARE BEING ACCOMPLISHED BY:

- DEFINING AND EVALUATING CURRENTLY AVAILABLE PROTECTIVE CLOTHING FOR EACH HAZARD LEVEL AND SEVERITY.
- CATEGORIZING PROTECTIVE CLOTHING BY WHETHER IT IS AVAILABLE AND ADEQUATE OR WHETHER IT IS NOT AVAILABLE.
- TECHNICAL DISCUSSIONS AND EVALUATIONS ON FABRICS, MATERIALS, AND DESIGNS USED IN PROTECTIVE CLOTHING MANUFACTURE.

ONE HUNDRED FORTY TWO COMPANIES HAVE BEEN IDENTIFIED AND CONTACTED FOR INFORMATION ON THEIR PRODUCTS TO DEFINE THE AVAILABILITY OF PROTECTIVE CLOTHING ON THE MARKET. A CLASSIFICATION SYSTEM FOR HAZARD LEVEL AND SEVERITY USING INFORMATION GAINED FROM MANUFACTURERS, DRAFTS FROM THE PROPOSED L18 SAFETY CLOTHING STANDARD, AND OTHER SOURCES HAS BEEN FORMULATED TO DETERMINE THE EXTENT TO WHICH NEEDS CAN BE MET BY AVAILABLE PROTECTIVE CLOTHING. HAZARD LEVEL PROTECTION CLASSIFICATIONS FOR PROTECTIVE CLOTHING WERE ESTABLISHED TO AID IN THE EVALUATIONS. TO THIS END 4 CLASSIFICATIONS WERE DEVELOPED.

CLASS A ENSEMBLES PROVIDING COMPLETE ENVIRONMENTAL ISOLATION FROM SERIOUS ACCIDENT OR HEALTH HAZARDS WHERE FATAL INJURIES COULD RESULT.

CLASS B FULL BODY ENSEMBLES PROVIDING A LESS EXTENSIVE STANDARD OF PROTECTION IN AN AREA WHERE THE RISK OF INJURY OR DEATH IS LESS ACUTE.

CLASS C PARTIAL BODY PROTECTION REQUIRED TO ASSURE POSITIVE PROTECTION TO SPECIFIC PARTS OF THE BODY.

CLASS D BASIC STANDARD OF BODY PROTECTION REQUIRED TO

.....
AVOID PERSONAL INJURY IN AN ENVIRONMENT WHERE
HAZARDOUS CONDITIONS MAY OCCUR DUE TO THE NATURE
OF JOB OPERATIONS, EQUIPMENT, OR MATERIALS INVOLVED.

.....
TO DEFINE THE STAGE OF ENVIRONMENTAL HAZARDS CONNECTED WITH OR
SURROUNDING JOBS IN EACH OCCUPATIONAL/INDUSTRIAL AREA, THE
FOLLOWING DEFINITIONS OF HAZARD SEVERITY WERE ESTABLISHED:

1ST DEGREE EXPOSURE TO INCAPACITATING INJURIES AND/OR
OCCUPATIONAL HEALTH HAZARDS WHICH MAY RESULT
IN PERMANENT TOTAL OR PARTIAL DISABILITY OR
DEATH.

2ND DEGREE EXPOSURE TO INCAPACITATING INJURIES AND/OR
OCCUPATIONAL HEALTH HAZARDS WHICH MAY RESULT
IN TEMPORARY TOTAL OR PARTIAL DISABILITY OF
MORE THAN 7 DAYS DURATION.

3RD DEGREE EXPOSURE TO INCAPACITATING INJURIES AND/OR
OCCUPATIONAL HEALTH HAZARDS WHICH MAY RESULT
IN TEMPORARY TOTAL OR PARTIAL DISABILITY OF LESS
THAN 7 DAYS DURATION.

4TH DEGREE EXPOSURE TO MINOR MEDICAL TREATMENT INJURIES
WITHOUT LOST TIME. EXPOSURE TO OCCUPATIONAL
HEALTH HAZARDS, BUT OF A TEMPORARY NATURE.

5TH DEGREE EXPOSURE TO SAFETY AND HEALTH HAZARDS ARE
NEGLECTABLE.

.....
TECHNICAL DISCUSSIONS AND EVALUATIONS OF FABRICS, MATERIALS,
AND DESIGNS USED IN PROTECTIVE CLOTHING MANUFACTURE ARE BEING
PERFORMED BY UTILIZING INFORMATION GAINED FROM LITERATURE

SEARCHES OF ANSI STANDARDS, MILITARY SPECIFICATIONS, MANUFACTURERS INFORMATION, AND OTHER SOURCES. ALSO, DISCUSSIONS WILL BE PRESENTED ON ITEMS OF PROTECTIVE CLOTHING IN THE DEVELOPMENT STAGE WHICH WILL PUSH THE PRESENT STATE-OF-THE-ART UPWARDS. THE MOUND LABORATORY BUBBLE SUIT FOR RADIATION PROTECTION, AND THE DRY ICE VEST FOR HEAT STRESS ALEVIATION UNDER DEVELOPMENT BY MR. STEPHEN KONZ AND MR. C. L. HWANG AT KANSAS STATE UNIVERSITY ARE EXAMPLES.

EVALUATING AND DEFINING AREAS WHERE PROTECTIVE CLOTHING IS PRESENTLY AVAILABLE, BUT IS UNSATISFACTORY BECAUSE OF POOR PERFORMANCE OR LACK OF WORKER ACCEPTANCE WILL BE ACCOMPLISHED IN MUCH THE SAME MANNER AND USING THE SAME DATA SOURCES AS THE PRECEEDING TASK. INFORMATION GAINED FROM ACCIDENT INJURY DATA WILL BE OF MAJOR IMPORTANCE IN PINPOINTING POOR PERFORMANCE OF CLOTHING. WORKER'S COMMENTS REGARDING ACCEPTABILITY OF PROTECTIVE CLOTHING FROM FIELD SURVEYS COUPLED WITH CONTACTS WHICH HAVE BEEN MADE WITH TRADE UNIONS SUCH AS THE UNITED AUTO WORKERS AND THE OIL, CHEMICAL AND ATOMIC WORKERS WILL PROVIDE THE NECESSARY DATA FOR DETERMINING WORKER ACCEPTANCE. BASED ON THE RESULTS OF THESE ASSESSMENTS THE PROTECTIVE CLOTHING WILL BE GROUPED INTO AVAILABLE AND INADEQUATE, OR AVAILABLE, BUT LACK USER ACCEPTANCE CATEGORIES.

RESEARCH DEVELOPED FROM THE FOLLOWING AREAS WILL DETERMINE THE BASIS FOR THE PRIORITY RANKING SYSTEM:

- PROTECTIVE CLOTHING NEED VERSUS EXPOSURE
- AVAILABILITY OF PROTECTIVE CLOTHING VERSUS NEED
- SUITABILITY AND ACCEPTANCE OF PROTECTIVE CLOTHING
- ACCIDENT SEVERITY AND FREQUENCY DATA

DATA FROM THE FIELD SURVEY SEGMENT OF THE CONTRACT IS BEING

EXTRAPOLATED INTO A NEED VERSUS HAZARD EXPOSURE TABLE. THIS TABLE WILL BE USED IN CONJUNCTION WITH INFORMATION ALREADY OBTAINED FROM GOVERNMENT DESIGN SPECIFICATIONS AND TRADE ASSOCIATIONS.

THE SEARCH FOR PROTECTIVE CLOTHING AVAILABLE TO INDUSTRY IS A CONTINUING UPDATING PROCESS. INFORMATION GAINED FROM THIS AND THE NEED VERSUS HAZARD TABLE WILL BE USED TO RANK BY HAZARD THE PROTECTIVE CLOTHING PRESENTLY AVAILABLE TO INDUSTRY. SUITABILITY AND ACCEPTANCE OF PROTECTIVE CLOTHING WILL BE DETERMINED BY USING INFORMATION EXTRACTED FROM THE FIELD SURVEYS AND WILL BE PRESENTED BY INDUSTRIAL/OCCUPATIONAL AREA VERSUS THE HAZARD.

ACCIDENT SEVERITY AND FREQUENCY DATA FROM SELECTED BENDIX DIVISIONS WILL BE COLLECTED DURING THE NEXT QUARTER AND WILL BE EVALUATED AGAINST ANSI STANDARD Z-16.1-1967. THIS INFORMATION WILL BE USED IN CONJUNCTION WITH WORKMEN'S COMPENSATION DATA TO ASSIGN A DISABLING INJURY INDEX NUMBER TO EACH INDUSTRIAL/OCCUPATIONAL AREA TO BE RANKED.

AFTER ALL INFORMATION HAS BEEN TABULATED, THE PRIORITY RANKING SYSTEM WILL BE SEGMENTED INTO FOUR DIFFERENT RANKING CATEGORIES:

- DISABLING INJURY INDEX NUMBER (I)
- RELATIVE COST (C)
- RELATIVE TIME (T)
- RELATIVE LIKELIHOOD (L)

A NUMERICAL SYSTEM WILL BE ESTABLISHED FOR COST (C), TIME (T), AND LIKELIHOOD (L). IN EACH CASE, LARGER NUMBERS WILL INDICATE GREATER EXPENDITURES. THE LARGER THE LIKELIHOOD FIGURE, THE MORE UNLIKELY THAT THE CONDITION CAN BE CONTROLLED OR CORRECTED

BY APPLYING RESEARCH. THE LARGER THE COST FIGURE, THE MORE EXPENSIVE WILL BE THE RESEARCH EFFORT. THE LARGER THE TIME FIGURE, THE LONGER IT WILL TAKE TO GET SIGNIFICANT RESULTS. UPON COMPLETION OF THIS TABLE, THE COST (C), TIME (T), AND LIKELIHOOD (L) WILL BE MULTIPLIED TO PROVIDE A RANKING OF INDUSTRIES AND OCCUPATIONS THAT WILL SHOW THOSE WORK HAZARDS MOST AMENABLE TO CORRECTIVE ACTIONS THROUGH APPLIED PROTECTIVE CLOTHING RESEARCH.

THE PROTECTIVE CLOTHING CURRENTLY AVAILABLE TO INDUSTRY ON THE OPEN MARKET APPEARS TO BE ADEQUATE FROM THE STANDPOINT OF WORKER PROTECTION, BASED ON INFORMATION AVAILABLE FROM THE FIELD SURVEYS. THE MOST COMMON COMPLAINT BY WORKERS INTERVIEWED IN REGARDS TO PERFORMANCE AND ACCEPTABILITY, WAS THE FACT THAT SOME OF THE PROTECTIVE CLOTHING USED FOR THERMAL OR CHEMICAL PROTECTION WAS TOO HOT AND TOO HEAVY (BULKY) TO WEAR. THERE WERE NO CASES REPORTED WHERE THE PROTECTIVE CLOTHING, IF IT WAS WORN AND PROPERLY SELECTED FOR THE HAZARDS ENCOUNTERED, DID NOT PERFORM ITS PROTECTIVE FUNCTIONS.