

IN THE COURT OF COMMON PLEAS OF CENTRE COUNTY, PENNSYLVANIA

CAROL LENHART, Administratrix
of the Estate of JAMES L.
LENHART, JR., deceased,

Plaintiff,

vs.

UNITED STATES GYPSUM COMPANY,
ET AL.,

Defendants.

CIVIL DIVISION

No. 98-1848

AFFIDAVIT OF WILLIAM A. LOWELL,
II

Filed on Behalf of Plaintiff

Counsel of Record for this Party:

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AFFIDAVIT OF WILLIAM A. LOWELL, II

I, WILLIAM A. LOWELL, II, reside in Augusta, Maine. I worked at the Bath Iron Works starting on September 16, 1962. I first started to work there as a first line supervisor in 1962. In 1964 I became an assistant chief operating engineering and worked in that capacity until 1968. On June 1, 1968 I became the chief operating engineer and remained the chief operating engineering until August of 1989. I then became vice president and general manager of the Bath Iron Works, Portland Ship Repair facility.

I am familiar with the construction of the USS Biddle. I was aboard Biddle for the last 4 or 5 months of its construction phase during which time all of the systems would have been tested, evaluated, groomed and sea trials conducted. The vast majority of the insulation material, including pipe covering, was installed on the USS Biddle while I was working aboard it.

The Bath Iron Works list of ships lists all the ships built at Bath Iron Works. The USS Biddle was Bath Iron Works Hull 347. It was the fifth ship in the Belknap class of DLGs. The Biddle had its keel layed in December of 1963, launched July 2, 1965, and delivered January 10, 1967. Delivery took place at the Boston Navy Ship Yard and the ship was commissioned there on January 21, 1967. The Biddle has a high pressure steam plant with two propellers, port and starboard. It had four Babcock & Wilcox steam boilers generating steam at 950°, 1200 pounds per square inch. It had two cross compound geared turbine sets in each engine room which ultimately drove a propeller through a reduction gear. The two

turbines were supplied by General Electric. The installation of asbestos pipe covering on the USS Biddle took place during the fall of 1966. The insulation on the General Electric turbines would have occurred just after initial activation, and a review of schedules indicated that vacuum was first raised on the August 18, 1966, which lead me to state that the high pressure and low pressure turbines were covered in August or September, 1966. The materials used to cover those turbines were primarily portable insulating pads furnished by the ship builder and the pads were made by the ship builder. According to my records the materials that was in the pads could have been amosite or could have been fiberglass. It would take more study on my part to determine if the pads were asbestos or fiberglass. What is clear is that the drawings and specifications called for the use of considerable amounts of asbestos and fiberglass on the USS Biddle. There is on the HP turbine a small amount of permanent insulation which would have used a felt material, either amosite or fiberglass. That insulation would have been coated with an asbestos-containing cement. I believe there were not any non-asbestos cements available that met Navy specifications. Thus the ship builder would have used an asbestos-containing cement on that section of high pressure turbine that had some permanent insulation. Whether the cloth used was fiberglass or asbestos cloth, I am not certain, and would require further study on my part.

The turbine manufacturer, General Electric, would have provided some of the asbestos gaskets. Some of the joints would

actually have been made up prior to the turbine arriving at the ship yard. Things like the expansion joint between the HP and LP turbine had gaskets which were typically furnished by the turbine manufacturer. It is my belief that the gaskets, certainly in the 1960's and I believe throughout the entire decade of the 1970's, contained asbestos, and gaskets were one of the last products used that contained asbestos until a suitable substitute was found. In the world that I worked in, a suitable substitute should have occurred in the early 1980's. I do think it is only fair to say that the gaskets were, in fact, non-friable during installation. They would not have been cut, they would have been previously cut and packaged by General Electric. The gaskets that went in would be tightly held between two steel surfaces. I also would acknowledge that the horizontal joint, the big horizontal joint on the steam turbines, were metal to metal and would not have had any gaskets. There would be a triple boiled linseed oil typically sealing that joint. If subsequent repairs were carried out on the turbines, the gaskets that were originally there would typically be destroyed and it would be very rare that you would ever attempt to reuse a gasket; it is just not worth the risk or the cost of the risk involved, getting a leak. During any subsequent overhauls, those original gaskets furnished by G. E. would have been changed out and the new gaskets would have been gaskets provided by either the government, if the overhaul took place in a government ship yard, such as Norfolk Naval Ship Yard, or if it took place in Bath Iron Works, Bath Iron Works would have gone out and procured new

gaskets for the job at hand. If the gaskets were a Flexitallic type with an outer ring, chances are those would come off without the gasket ever being damaged. It is my opinion that it would be highly unlikely that any dust could be emitted from a Flexitallic gasket. If the gasket was cut out of a sheet and had been cooked for a long period of time, it is possible that that gasket could come off in pieces. It is possible that it could be broken. It is possible that it would have to be wire brushed off, buffed off or scrapped off using some kind of soft metal scrapper so as not to damage the steel surfaces. Again, the metallic ring type gaskets were highly unlikely to be mutilated while it was being taken off. However, if it was a sheet gasket and it was cooked hard enough, it could be that you would have to wire brush it off or scrap it off thereby possibly creating some dust.

Typically insulating cement is used to fill in gaps and odd shapes that pipe covering and insulation would not adapt too well because pipe covering is molded. The other case where mud typically is used, and I am going to use the term "mud" interchangeable with cement, would be on some of the machinery that would get some permanent insulation, it would be installed on a permanent basis. If you ever had occasion to remove it, you would virtually have to destroy it. In the case of the HP turbines, there was typically asbestos cement insulation there, and the way that would work is it would be built up with felts, 2 or 3 tiers of felts, and would be wired in place and then a chicken mesh wire would go over that, and then cement or mud would go over that. It

would be smoothed off and faired off very nicely. Then after the cement had dried thoroughly, a glue would go on and it would be clothed and make a nice neat job. The type of cloth and felt used for the construction of the USS Biddle may have been fiberglass or amosite asbestos. I am not certain whether it was fiberglass or asbestos. What I am certain of is that any cements that went on in 1965--1966 would have had some asbestos content. By 1975 any insulating pads or any permanent insulation going on the turbines, no matter who made it, would have been asbestos free then; Unibestos felts were prohibited by the Navy in about 1971, and fiberglass cloth had proved to be a very acceptable substitute at that point. Further, by the fall of 1975, there were good substitute cements on the market that would have been asbestos free. I know from personal experience that in late 1973 any pipe covering that we would have done at Bath would have been of a non-asbestos material. I believe, although I am not positive, that the same is true of cements--about 1973 non-asbestos cements came about.

On the specifications for Navy vessels in 1965, the pipe covering was specified as Mill Spec. 2781, Grade II, Class C. At that time Unibestos was the only manufacturer that could meet this specification. Further, it was spelled out as standard sectional fibrous or super section fibrous which is in my opinion could only have meant Unibestos. If other asbestos materials would have been involved, it would clearly spell out calcium silicate or 85% magnesium. The very words "standard sectional fibrous" in my

opinion infers Unibestos--amosite. This is further strengthened by the Mil Spec. called out Mil Spec. 2781, Grade 2, Class C only Unibestos met in 1965.

The USS Biddle underwent a major overhaul at the Bath Iron Works in the mid 1970's. The ship arrived at Bath on April 18, 1975 and actually left the April 26, 1976. This was a 1 year overhaul and it is my belief that the turbines would have been overhauled at that time. Further, looking at the dates and knowing that Unibestos felts had been prohibited in 1971 by the U. S. Navy, I firmly believe, as to any new installations, that fiberglass pads and non-asbestos cement was used in those permanently covered areas on the HP turbines. The permanent insulation on the turbines when the ship came into Bath Iron Works would likely have contained asbestos insulating cement. I certainly know that there were portable insulate pads and there was a little bit of permanent insulation on the HP turbines, but not certain of the material. As I indicated earlier, I am not positive whether Bath used fiberglass or amosite on the turbines during the original construction. We do know from the history of the USS Biddle from the Naval Historical Center that it did undergo at least one major overhaul, certainly one major one at Norfolk Naval Ship Yard in 1971 and 1972. What was done during the overhaul relative to the portable insulating pads and the HP turbine and that permanent covering there, I have no way of knowing what work took place at Norfolk. It is my belief that any insulating cement being used in 1971 and 1972 would have had some asbestos content, and that it is my understanding that in

1973 approved products came out that were acceptable and were non-asbestos.

The Biddle did not decommission when it came into Bath Iron Works for its overhaul in 1975. If a crew member arrived on the Biddle, he typically stayed on the Biddle's muster role for that year while the ship was at Bath. There is a good possibility a machinist mate, would have been in the engine room while the turbine pads were being removed during an overhaul. I would say that it would be more likely than not that a machinist mate assigned for a full year would have gone down into the machinery spaces frequently certainly during the overhaul and could well have been there while portable insulating pads were removed, and while the permanent covering was removed any crew member in the area of the turbine repair could have been exposed to the dust created from the removal of the asbestos products from the turbines and the clean up of the same. I do not have, without further research, an exact recollection if the turbines on the Biddle were overhauled, but I think more likely than not the high pressure turbine casing was removed. There is a way of determining whether, in fact, those turbine casings were removed, but right now I do not have that information. I think it more likely than not that they were. In the removal of the turbine casings they would disrupt the asbestos insulating cement that was used on the General Electric turbines.

During the installation of the turbines on the USS Biddle in 1965, a General Electric representative, Sid Shaw, was present. He would have been aware of the ship yard installing asbestos

insulating materials on the General Electric turbines. Asbestos materials were used on these vessels in this time frame for several purposes, including thermal efficiency and protection of the naval crews from the heat generated steam system. For any steam turbine to be functional in the 1966 era, it was necessary that they be insulated with some asbestos materials.

Accompanying the General Electric turbines were General Electric manuals. These manuals were very large and contained extensive information. They described the operation and maintenance of the turbines, including schematic diagrams, and also specified replacement parts. I am not aware of these manuals describing the hazards of the use and/or removal of asbestos materials.

I the undersigned hereby deposes and says that the statements of fact set forth in the foregoing are true and correct to the best of my information, knowledge and belief and are made subject to the penalties of 18 PA. CONS. STAT. ANN. §4904 relating to unsworn falsification to authorities.

DATE: 18 FEB 2001

William A. Lowell II
WILLIAM A. LOWELL, II