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Roger S. Boyd, Assistant Director for BWR's, Division of  
Reactor Licensing

MILLSTONE 1 STACK RELEASES - EFFECT ON ELECTRIC BOAT COMPANY

This memorandum summarizes and updates information obtained from the Naval Reactors group (Groton), at Groton, Connecticut, and from Naval Reactors (NR), Washington, D. C., concerning the detection and measurement of airborne activity at the Electric Boat Company from gaseous effluents from the Millstone 1 facility on August 9, 1971. Previous information concerning this problem was reported in our "Notification of an Incident or Occurrence - Nos. 35 and 38", dated August 10 and August 16, 1971.

In view of the importance of the reported airborne activity concentration at Groton, i.e.,  $1 \times 10^{-7}$  uC/cc, Electric Boat was again contacted on August 27, 1971. We were informed at this time that Electric Boat had made further evaluations and arrived at a concentration in the range of 2.5 to  $5 \times 10^{-9}$  uC/cc. This value is reported to be based on gross beta counting with correction factors applied to account for the observed activity of cesium-138 versus the cobalt-60 standard normally used as the counting reference at Groton. Compliance contacted Mr. Brodsky of NR on September 2, 1971, for verification of these latest reported values because of their importance. Mr. Brodsky informed Compliance on September 8, 1971, that the number (2.5 to  $5 \times 10^{-9}$  uC/cc) was the final result of NR's evaluation and explained that:

1. Electric Boat's emergency procedures specified various responses or actions, including local evacuation, for airborne activity levels in the range of  $1 \times 10^{-9}$  to  $1 \times 10^{-7}$  uCi/cc. Mr. Brodsky stated that Groton properly reacted and invoked their emergency plan. The actual levels that existed, corrected for the isotopes present, were strictly of secondary interest to Electric Boat personnel.
2. NR realized that the indications from continuous air monitors and from other air samples were conservative

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in that they were based on cobalt-60 calibrations. NR stated that their initial report to CO:HQ was that air concentrations observed at Groton were "in the range of  $10^{-7}$  to  $10^{-8}$ ". They also stated that their actual evaluation of the measured concentration was  $1.5 \times 10^{-8}$ , a number that wasn't reported to CO:HQ or to Region I by Electric Boat or NR.

3. The "as evaluated" measured number of  $1.5 \times 10^{-8}$ , corrected by a factor of 3 (the correction factor for the cobalt standard) indicates that the actual air concentration was no higher than  $5 \times 10^{-9}$  uCi/cc. This latter number is firm and is contained in their records of this event.

As you know, since the August 9 occurrence, similar occurrences have taken place at the Electric Boat Company on September 8 and 15, 1971. Whereas the first two occurrences took place following a reactor startup, however, the latest occurrence took place with the reactor operating at steady state conditions. Since the problem results primarily from the sensitivity requirements of the air monitoring equipment at the Electric Boat Company and does not appear to have any health and safety or noncompliance considerations, Compliance plans no further inspection effort on this problem at this time. We will, however, continue to follow the fuel and off-gas performance at Millstone.

*J. H. Engelken for*  
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Original signed by  
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