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March 30, 2012

Mr. Stewart N. Bailey
Chief, Safety Issue Resolution Branch
Division of Safety Systems
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: GSI-191 Dose Estimates

Project Number: 689

Dear Mr. Bailey:

In response to your letter of February 8, 2012, NEI has collected information on occupational radiation exposures that have been, or would be, incurred during insulation removal or modifications associated with Generic Safety Issue (GSI)-191. It is our understanding that the Nuclear Regulatory Commission (NRC) staff would use this information as part of its response to the Commission's Staff Requirements Memorandum (SRM) of SECY-10-0113.

Estimates for insulation replacement or modification to address GSI-191 cover a wide range of person-rem dose expenditures. These estimates are also generally larger than actual person-rem expenditures for insulation modifications or replacement.

Dose estimates for replacing insulation on a steam generator and associated piping on a unit basis ranged from as low as 17 person-rem to as high as 276 person-rem. The most typical estimate was in range of 50-70 person-rem. Actual dose for this scope of work ranged from 21 to 58 person-rem. Dose estimates were also provided for replacing "All" affected insulation on a per unit basis, and those estimates ranged from 80 to 525 person-rem.

There are a number of reasons for the variability of estimates and why estimates for replacement or modifications differ from actual dose expenditures.

- PWR designs, configurations, and radiological environments vary significantly from station to station, thus making it difficult to establish a uniform physical basis for comparison.
- Many replacements and modifications performed to date, were engineered or "targeted" for selected materials, avoiding work in areas/regions that are high in dose, or where difficulties presented by installation or location would require additional time, increasing dose exposure.
- Dose rate is affected by the source term (radioactivity present in plant piping) worker proximity to plant components, and contamination levels in the work area. Time of exposure is a function of the work scope. Several factors affect the scope, including number of work hours required by maintenance and support staff (e.g. Radiation Protection Technicians) within the work area, the need for support functions like scaffold erection, component/piping cleaning and/or decontamination, and the variations in size and shape of the impacted components. The presence of hazardous materials, such as asbestos, will require specialized support, thus increasing personnel exposure and total dose associated with the work scope.

If you require additional information or wish to discuss this further, please contact me at (202) 739-8106; mar@nei.org.

Sincerely,

A handwritten signature in black ink that reads "Mark A. Richter". The signature is written in a cursive, slightly slanted style.

Mark A. Richter