

October 26, 2011

Neil Wilmshurst, Vice President, Nuclear Sector
Electric Power Research Institute
1300 West W. T. Harris Blvd
Charlotte, NC 28262-8550

Dear Mr. Wilmshurst:

The Electric Power Research Institute's (EPRI's) Non-Destructive Examination (NDE) Center and the Office of Nuclear Regulatory Research (RES) signed an Addendum to the U.S. Nuclear Regulatory Commission (NRC)/EPRI Memorandum of Understanding (MOU) on March 22, 2011. This MOU allows and encourages cooperation in nuclear safety research that provides benefits for both NRC and industry. Specific areas of collaboration were identified in Attachments 1 through 5 to the Addendum (1. visual testing; 2. cast austenitic stainless steel; 3. ultrasonic testing in lieu of radiographic testing for repairs, replacements, and modifications; 4. documentation of the basis for ASME Section XI, Appendix VIII; and 5. root mean square error – inner diameter pipe examinations depth sizing). Attached for your signature is a sixth statement of work (SOW) addressing high-density polyethylene (HDPE) piping. Representatives from EPRI and RES developed the tasks listed in the SOW.

The NDE Addendum to the NRC/EPRI MOU acknowledges that emerging degradation issues at existing plants or issues regarding new plant designs related to the areas of NDE and inservice inspection (ISI) will be of interest to both organizations and, therefore, candidates for future inclusion under the Addendum. Moreover, the Addendum states, "... additional SOWs may be added to this Addendum without having to revise the Addendum provided: i) the provisions of the Addendum are not modified; ii) new SOWs are subjected to the same organizational approval process as the original Addendum; and iii) new SOWs are signed by the designated officials."

Steel and metal alloys used in underground piping are susceptible to fouling, corrosion, and microbiological growths. These degradation mechanisms can be addressed or minimized using HDPE piping. However, before HDPE piping can be generically approved, structural integrity issues related to mechanical/material properties, joining, and NDE need to be addressed. These issues are of greater concern in nuclear applications where temperatures can be in excess of 175°F, potentially for several months. In contrast, most nonnuclear HDPE applications operate at ambient temperatures. Slow crack growth and failure of the piping becomes a primary concern at elevated temperatures.

Several industry organizations have initiated research to investigate issues related to mechanics/materials, joining, and NDE. EPRI is conducting a 2-year study to investigate existing HDPE NDE technology in other industries and to assist in integrating new technology and techniques into the nuclear industry. NRC is conducting confirmatory research in response to a joint user need request from the Offices of Nuclear Reactor Regulation and New Reactors to provide recommendations to be used in decision making when applicants and licensees request authorization to use HDPE piping in new and replacement applications.

N. Wilmshurst

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I am pleased to sign this agreement that will allow EPRI and RES to cooperate on issues related to the use of HDPE piping. The information will be shared on a basis that is consistent with the procedures outlined in the Addendum, and none of the activities will be co-funded. NRC will maintain its independence consistent with its regulatory function.

Our two organizations continue to work well together, and I believe the cooperation has been very beneficial for the industry as well as NRC. Toward that end, attached are two copies of the proposed SOW. Please return one executed copy at your earliest convenience. If you have any questions, please feel free to contact Mr. Wallace Norris at (301) 251-7650. We look forward to many more years of successful partnership.

Sincerely,

/RA/

Brian W. Sheron, Director
Office of Nuclear Regulatory Research

Enclosure:
As stated

N. Wilmshurst

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Enclosure:
As stated

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