February 8, 2008

MEMORANDUM TO: Jack Foster, Branch Chief
Operating Experience and Generic Issues Branch
Division of Risk Assessment
Office of Nuclear Regulatory Research

FROM: Gary M. DeMoss */RA/*
Operating Experience and Generic Issues Branch
Division of Risk Assessment
Office of Nuclear Regulatory Research

SUBJECT: SUMMARY OF FEBRUARY 6, 2008, CATEGORY 2 PUBLIC MEETING WITH THE PUBLIC AND INDUSTRY TO DISCUSS GENERIC ISSUE 199, "IMPLICATIONS OF UPDATED SEISMIC HAZARD ESTIMATES IN CENTRAL AND EASTERN UNITED STATES ON EXISTING PLANTS"

On February 6, 2008, the Nuclear Regulatory Commission (NRC) staff met with the public and stakeholders to discuss the results of the Screening Stage of Generic Issue 199. The meeting took place at NRC headquarters located in Rockville, MD. The presentation handouts and attendance list are provided as Enclosures.

A public meeting notice was issued on January 16, 2008, and was posted on the NRC's external public web page Agencywide Document Access Management System (ADAMS) Accession Number ML080160146. The notice included the meeting agenda, which was also available as a handout at the meeting. The discussions included (1) overview of the Generic Issue (GI) screening and analysis process, (2) recent seismic analysis, (3) the assessment approach being considered for the Safety/Risk Assessment Stage of GI-199 and associated data needs.

Presentations

Dr. Brian Sheron, RES Office Director, started the meeting by welcoming the attendees. In his opening remarks, Dr. Sheron explained that the main purposes of the meeting were to engage stakeholders and explore the framework and extent of industry involvement and support in the Safety/Risk Assessment Stage for GI-199. Dr. Sheron provided some history of "industry initiatives," including challenges to their successful implementation. Dr. Sheron stated some NRC expectations for a successful industry initiative, including openness, timeliness, a plan, and NRC acceptance and monitoring of progress.

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Dr. Sheron also discussed some of the recent Generic Issues Program (GIP) initiatives to improve timeliness, internal and external coordination, screening, and definition of roles and responsibilities. Dr. Sheron concluded his remarks with a brief discussion of the history of GI-199.

After Dr. Sheron's presentation, Gary DeMoss, Project Manager for GI-199, gave an overview presentation of GI-199, including its status within the GIP. Mr. DeMoss provided a brief background and description of the issue. He described the screening process and criteria and explained the screening analysis results (ADAMS ML073400477). The screening panel concluded that the seismic designs of affected plants still provide adequate safety margins and that the issue would proceed to the Safety/Risk Assessment Stage. Mr. DeMoss explained that this meeting was the first step in the Safety Assessment Stage (engaging stakeholders), and that the next step would be to develop an Action Plan for performing the assessment. Mr. DeMoss explained that the outcome of the Safety/Risk Assessment Stage is a determination whether the risk associated with the issue warrants its continuation in the GIP and that a panel would make recommendations regarding whether the issue could merit additional regulatory action, and if so, whether that action should be pursued within the GIP or through another regulatory process. Mr. DeMoss concluded by emphasizing that the issue is being handled in the GIP, that the process will be open to the public and coordinated with industry.

Mr. Alex Marion of the Nuclear Energy Institute (NEI) spoke next. Mr. Marion stated that industry wants to collaborate on the effort to address GI-199, and that consideration should be given to identifying an appropriate mechanism for this collaboration. He suggested that using the existing Memorandum of Understanding (MOU) between the Electric Power Research Institute (EPRI) and RES, or a similar arrangement, should be explored. Dr. Robert Kassawara of EPRI then discussed ongoing activities in the seismic area. He stated that EPRI had calculated mean seismic spectra for the 28 sites used in Reg. Guide 1.165, and that results for the remaining sites would be available in late April or early May, and that with these results, EPRI would have an up-to-date understanding of the seismic spectra at each site.

Dr. Jon Ake, Senior Seismologist, working on GI-199, then described the recent developments in the seismic area that led to GI-199. Results from two areas, seismic source characterization and revised ground motion predictive equations, suggest that estimates of seismic hazard in the central and eastern U.S. (CEUS) may have increased relative to previous estimates. In particular, current estimates of the occurrence rate of large earthquakes for some areas are several times larger than values used in the 1980s. In addition, revised ground motion predictive equations (GMPEs) predict generally higher estimates of uncertainty than previous GMPEs, and would result in different hazard estimates at virtually all CEUS nuclear plant sites. Mr. Ake then briefly describe the Individual Plant Examination of External Events (IPEEE) Program that was conducted in the 1990s, and how it relied on existing Safe Shutdown Earthquakes, EPRI, and Lawrence Livermore National Laboratory hazard estimates to perform evaluations. Dr. Ake then explained that Safety Assessment Stage would first assess those plants that have 1) a higher seismic hazard, 2) a higher seismic response uncertainty, and 3) lower seismic margins/higher seismic core damage frequency. The second priority would be to assess plants with two of the three factors listed above.

Mr. Martin Stutzke, Senior Level Advisor, then described the challenges in estimating the change in risk associated with the perceived increase in seismic hazard. Mr. Stutzke started by discussing the IPEEE background, in particular he noted that some plants performed seismic probabilistic risk assessments (PRA), while most performed seismic margins analyses (SMA). Mr. Stutzke noted that SMAs provide a sound basis for developing a seismic PRA, but that much work would need to be done to develop a PRA. In addition, plant modifications and PRA updates have occurred since the IPEEEs were completed. Mr. Stutzke then described and explained a number of issues including the appropriate sources of seismic information, risk assessment methods, possible approaches to streamline the assessment by possibly focusing on those "most affected" plants or using simplified methods, uncertainty, stakeholder involvement, and means to achieve "finality," i.e. eliminate the need to revisit this topic each time new seismic data is available, or have a way to promptly assess the new data. Mr. Stutzke concluded by discussing the path forward, suggesting a near-term meeting to discuss details of the technical approach.

Discussions

During and after the NRC staff presentations several discussions were raised by the industry representatives.

There was technical discussion that seismic PRAs use peak ground acceleration, but that it may more appropriate to use spectral acceleration. Dr. Goutam Bagchi of NRO suggested that an industry study or White Paper would be useful. Mr. Greg Hardy (Ares) indicated a willingness to share thoughts on how the use of spectral acceleration reduces uncertainty.

Mr. Marion stated NEIs willingness to support a collaborative approach and suggested that there should be a meeting in March to get the framework in place for cooperation on this issue and that EPRI would evaluate the need to update or create an addendum to the EPRI/RES MOU. It was also suggested another meeting be held after EPRI results are available (April/May). There was general agreement that such meetings would be useful, and Jack Foster, Generic Issues Program Manager, stated that we would begin preparations for the meetings.

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