MITSUBISHI BRIEFING TO THE NRC COMMISSIONERS ON INSTRUMENTATION AND CONTROLS

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- **Early 2006**   Mitsubishi's first meeting with the NRC to discuss DCD regulatory review

- **November 2006**   First Mitsubishi I & C presentation to the NRC Staff

- **March 2007**   I & C Topical Reports submitted
    - System Design & Design Process
    - Platform Design
    - Defense-in-Depth & Diversity & HIS/HFE

- **December 2007**   Software Program Manual

- **December 2007**   US-APWR Design Control Document

- **February 2009**   First DCD RAIs received

NRC REVIEW SUMMARY AND STATUS

1. The NRC review of the Mitsubishi Digital I & C started out slowly. Early schedule impacts were caused by:

   A. Mitsubishi's position in the NRC priority ranking
   B. Change/Availability of reviewers

   <u>Status</u>

   Substantial improvement in resources and priority have occurred within the last six months. Several Public Meetings and conference calls have been held to deal with critical areas that have been identified as requiring focused attention.

2. **Current issues impacting the pace of Mitsubishi's I & C review:**

   A. **The regulatory "template" to be required for the Software Program Manuals (SPMs) has been evolving for several years. In general, Mitsubishi's initial documents were completed during this time period.**

   NRC reviews of the Mitsubishi SPMs content identified additional information was necessary.

   Status
   Several supplier reviews have identified an accepted form and content for SPMs. Mitsubishi has resubmitted the SPMs following the content accepted by the NRC.

B. The NRC staff identified that the review time required to assure the Mitsubishi data communication interactions complies with ISG-04, Highly Integrated Control Rooms Communication Issues, would be significant.

Status

Mitsubishi has proposed three modifications that will assure operation of the safety functions even if non-safety signals are assumed present. These modifications should reduce the Technical Staff review time.

LESSONS LEARNED

- **Digital I & C designs for control and protection systems has been under review in the U.S. for more than 20 years. ISG documents were developed with industry support to provide a regulatory process that would "fast-track" the review time. Key areas addressed were:**

  1. **Interdivision Data Communication – (ISG-04)**
  2. **Defense in Depth and Diversity, PRA – (ISG 2 & 3)**
  3. **Licensing Process – (ISG 6)**

- **The ISG efforts to "fast track" the regulatory review of digital I & C provided a good start, but has not yet met all its objectives.**

LESSONS LEARNED CONTINUED

- Suppliers have simplified their designs to achieve reductions in the I & C regulatory acceptance review period thereby not considering the benefits of the original design.

- Availability of NRC technical staff limits the pace of current and future the reviews.

MITSUBISHI'S I & C DESIGN CAN ENHANCE THE NRC GENERIC REVIEW

- **Mitsubishi has already implemented Digital I & C Safety and Protection Systems in Japanese Plants and has complete design information.**

- **Japanese Regulatory Requirements follow very closely those required by U.S. Regulations.**

- **Availability of complete design information can compliment and expedite the evolving regulatory review process.**

RE-FAST TRACKING DIGITAL I & C REVIEWS

- **Rekindle the ISG efforts for New Plants and Operating Plants.**

- **Where possible, use risk informed decision-making to determine measurable cost/benefits decisions.**

- **Use I & C designs that have completed advanced stages of engineering to support additional ISG efforts.**

- **Prudently expand NRC technical staff to reduce review times, and support ISG updates including related risk informed decisions.**

- **Based on industry commitments, focus independently, but collaboratively on new and operating plants.**

- **Reconsider operating plant upgrade requirements to focus on front- loaded risk.**