

Uribe, Juan

108
127

MYC
From: Tsirigotis, Alexander
Sent: Monday, September 12, 2011 9:24 AM
To: Khanna, Meena; Farzam, Farhad; Hoang, Dan; Jessup, William; Uribe, Juan
Cc: Manoly, Kamal; Li, Yong
Subject: RE: North Anna NPP Seismic Event - Issues for Restart

Importance: High

Meena,

Per your request I took a shot at it and here is a partial list of items that I have to offer. This list is mainly concentrated on pipng.

The rest of the EMCB engineers can add to this list as see fit.

-Alexander-

North Anna pre-restart Requirements (Partial list)

Problem definition:

The current OBE and DBE utilized in the existing plant design basis calculations of piping, pipe supports and various seismic qualified SSCs have been exceeded by the recent earthquake of August, 2011.

Actions required

- 1) Develop new and updated OBE and DBE spectrum and static seismic inputs and submit for NRC approval.
- 2) Reanalyze all piping, pipe supports and various seismic qualified SSCs with the new approved spectrum or seismic inputs. 100% expectance required.
- 3) for locations of SSCs where the stresses (from action 2) have reached values above licensing and design basis (CLB and DB) allowable values, the licensee should use the ASME Appendix F criteria to establish operability in accordance with the NRC Inspection Manual Part 9900: Technical Guidance, "Operability Determinations & Functionality Assessments for Resolution of Degraded or Nonconforming Conditions Adverse To Quality or Safety". The licensee should continue to use these criteria until CLB and or DB criteria can be satisfied (normally the next forced outage of sufficient duration or the next refueling outage). For SSCs that do not meet the above criteria but are otherwise determined to be operable, licensees should treat the SSCs as if inoperable until NRC approval is obtained to use any additional criteria or evaluation methods to determine operability. Where a piping support is determined to be inoperable, the licensee should determine the operability of the associated piping system. Specific guidance and requirements are given in NRC RIS 2005-20 and NRC Inspection Manual Part 9900 (guidance formerly contained in GL 91-18).
- 4) for locations where the stresses (from action 2) have reached values above ASME Section III Appendix F allowable values, perform ultrasonic testing.
- 5.a) for location with identified flaw indications from Action 4, employ the ASME Section XI Code requirements for flaw acceptability or an NRC Approved Alternative method (see below 5.b). Once a flaw is determined to be unacceptable, regardless of whether the degraded component is degraded but operable, or inoperable, the component must be restored to meet ASME Code or construction code requirements, requirements of an NRC endorsed ASME Code Case, or an NRC approved alternative (evaluation, repair or scheduled inspections).
- 5.b) Methods available to evaluate flaws for structural integrity are:
For High Energy (HE) and Moderate Energy (ME) class 1, 3, 3 piping use ASME Code Section XI/Construction Code or NRC Approved Alternative such as a RG approved Code Case. GL 90-05 can also be used for class 3 HE and ME piping. Code case N-513 can also be used for class 2 and 3 ME piping.

9/107