## PMTurkeyCOLPEm Resource

**From:** Comar, Manny
**Sent:** Saturday, December 04, 2010 12:13 PM
**To:** Steingass, Timothy
**Cc:** Maria Morell; Russell Shearer; Comar, Manny; TurkeyCOL Resource; cmarks@islinc.com
**Subject:** PSER for Section 6.6 Inservice Inspection of Class 2, 3, and MC Components for Turkey Point Units 6 and 7
**Attachments:** 6.6 FSAR ASME NON-IBR PTN_Phase A1_PSER_Rev0.doc

Dear Mr. Steingass

Attached is a copy of the PSER Section 6.6 related to Turkey Point application that was prepared as part of the contract with Information System Laboratories (ISL)

In case you did not know, the review of the Turkey Point is a part of a pilot project that the NRO has undertaken where the entire review of the combined license application (COLA) has been contracted out. The work performed by the contractor is no different than any other contractor (for example, Sandia Laboratory, Oak Ridge National Laboratory, United States Army Corps of Engineers, Pacific National laboratory,) that works for NRC and does the majority of the work but you as the NRC employee is to ensure that the work does meet your expectation and that you concur with their technical work and evaluation.

You have been assigned as the point of contact (POC) by your Branch Chief for review and acceptance of this section of the Turkey Point COLA. Please review the PSER/SER completed by the ISL contractor in accordance with applicable acceptance criteria stated in SRP. .

Please provide your comments to me in the next 15 days (12/23/2010) related to this PSER/SER with a copy to those on this e-mail for tracking purpose and to the technical lead of ISL identified below and who was also copied on this e-mail. The technical lead for this work from ISL is: Clifford Marks, Email: cmarks@islinc.com , Voice: (302) 478-9471

If you are unable to complete your concurrence or overview by the proposed date, please let me know a reasonable alternative date for completion. This will help me in assessing the impact of the delayed review on the schedule completion of Turkey Point COLA.

If you think that the work does not meet your expectation and requires substantial changes or if the contractor has missed the mark and has overlooked certain areas, please let me know through a telephone or an e-mail so that I can set up a face to face meeting to convey your dissatisfaction to the contractor so the work can be modified to your satisfaction. If there are minor modifications and comments that you have, feel free to send them to me so that they can be incorporated and there may not be a need for a face to face meeting . The choice is entirely yours and I will be happy to work with you to resolve any issues that you may have.

The TAC no. for the task related to Turkey Point was provided to you by me through an e-mail dated October 20, 2010 at 2:07 PM. You can also use TAC no RN8053

Please feel free to contact me if you have any questions and I will be happy to discuss with you on the phone or meet with you at your convenience.

Manny Comar
Senior Project Manager
NRO/DNRL/NWE1
Nuclear Regulatory Commission

301-415-3863
mailto:manny.comar@nrc.gov

**Hearing Identifier:** TurkeyPoint_COL_Public
**Email Number:** 5

**Mail Envelope Properties** (377CB97DD54F0F4FAAC7E9FD88BCA6D02BE88FDECB)

**Subject:** PSER for Section 6.6 Inservice Inspection of Class 2, 3, and MC Components for Turkey Point Units 6 and 7
**Sent Date:** 12/4/2010 12:13:19 PM
**Received Date:** 12/4/2010 12:13:20 PM
**From:** Comar, Manny

**Created By:** Manny.Comar@nrc.gov

**Recipients:**
"Maria Morell" <mmorell@islinc.com>
Tracking Status: None
"Russell Shearer" <rshearer@islinc.com>
Tracking Status: None
"Comar, Manny" <Manny.Comar@nrc.gov>
Tracking Status: None
"TurkeyCOL Resource" <TurkeyCOL.Resource@nrc.gov>
Tracking Status: None
"cmarks@islinc.com" <cmarks@islinc.com>
Tracking Status: None
"Steingass, Timothy" <Timothy.Steingass@nrc.gov>
Tracking Status: None

**Post Office:** HQCLSTR01.nrc.gov

| **Files** | **Size** | **Date & Time** |
|---|---|---|
| MESSAGE | 2930 | 12/4/2010 12:13:20 PM |
| 6.6 FSAR ASME NON-IBR PTN_Phase A1_PSER_Rev0.doc | 67578 | |

**Options**
**Priority:** Standard
**Return Notification:** No
**Reply Requested:** No
**Sensitivity:** Normal
**Expiration Date:**
**Recipients Received:**

## 6.6 Inservice Inspection of Class 2, 3, and MC Components (Related to RG 1.206, Section C.III.1, Chapter 6, C.I.6.6, "Inservice Inspection of Class 2 and 3 Components")

### 6.6.1 Introduction

Inservice inspection (ISI) programs must meet requirements of 10 CFR 50.55a, "Codes and Standards," in which Section XI of the ASME Boiler and Pressure Vessel Code (ASME Code) is incorporated by reference. This section addresses the ISI of ASME Code Class 2 and 3 components. ASME Code Class 2 and 3 components must meet the applicable inspection requirements set forth in Subsections IWC and IWD of Section XI of the ASME Code, "Rules for Inservice Inspection (ISI) of Nuclear Power Plant Components." Subsection IWC and IWD also include requirements for preservice examinations prior to initial plant startup as provided in Subarticles IWC 2200 and IWD 2200.

### 6.6.2 Summary of Application

Section 6.6 of the PTN COL FSAR, Revision 1, incorporates by reference Section 6.6 of the AP1000 DCD, Revision 17.

In addition, in PTN COL FSAR Section 6.6, the applicant provided the following:

*AP1000 COL Information Items*

- STD COL 6.6-1

The applicant provided additional information in STD COL 6.6-1 to address COL Information Item 6.6-1. The information relates to plant specific preservice inspection (PSI) and ISI programs.

- STD COL 6.6-2

The applicant provided additional information in STD COL 6.6-2 to address COL Information Item 6.6-2. The information relates to preservation of component accessibility design considerations during the construction phase.

*Supplemental Information*

- STD SUP 6.6-1

The applicant provided supplemental information to add additional text to AP1000 DCD Section 6.6.1. The information relates to the design stage consideration of component accessibility to enable the performance of ISI examinations.

*License Condition*

- Part 10, License Condition 6

This license condition states that the COL holder shall provide an operational program schedule to support NRC inspections.

### 6.6.3 Regulatory Basis

The regulatory basis of the information incorporated by reference is addressed in the FSER related to the DCD.

In addition, the acceptance criteria associated with the relevant requirements of the Commission regulations for ISI of Class 2 and 3 components are given in Section 6.6 of NUREG-0800.

The applicable regulatory requirements for acceptance of the resolution of COL information items and supplementary information on ISI and testing of Class 2 and 3 components are established in GDC 45 found in 10 CFR Part 50, Appendix A, as it relates to periodic inspection of important components, such as heat exchangers and piping to assure the integrity and capability of the system.

The applicable policy for acceptance of COL information items, as it relates to fully describing an operational program, is found in SECY-05-0197.

### 6.6.4 Technical Evaluation

The NRC staff reviewed Section 6.6 of the PTN COL FSAR and checked the referenced DCD to ensure that the combination of the DCD and the COL application represents the complete scope of information relating to this review topic.[1] The NRC staff's review confirmed that the information in the application and incorporated by reference addresses the required information relating to the ISI of Class 2 and 3 components. The results of the NRC staff's evaluation of the information incorporated by reference in the PTN COL application are documented in NUREG-1793 and its supplements.

Section 1.2.3 of this SER provides a discussion of the strategy used by the NRC to perform one technical review for each standard issue outside the scope of the DC and use this review in evaluating subsequent COL applications. To ensure that the staff's findings on standard content that were documented in the SER for the reference COL application (Vogtle Electric Generating Plant [VEGP], Units 3 and 4) were equally applicable to the PTN Units 6 and 7 COL application, the staff undertook the following reviews:

- The staff compared the VEGP COL FSAR, Revision 3 to the PTN COL FSAR. In performing this comparison, the staff considered changes made to the PTN COL FSAR (and other parts of the COL application, as applicable) resulting from requests for additional information (RAIs).

- The staff confirmed that all responses to RAIs identified in the corresponding standard content evaluation were endorsed.

- The staff verified that the site specific differences were not relevant.

The staff has completed its review and found the evaluation performed for the standard content to be directly applicable to the PTN COL application. This standard content material is identified in this SER by use of italicized, double indented formatting. Section 1.2.3 of this SER provides an explanation of why the standard content material from the SER for the reference COL application (VEGP) contains evaluation materials from the SER for the Bellefonte Nuclear Plant (BLN), Units 3 and 4 COL application.

The following portion of this technical evaluation section is reproduced from Section 6.6.4 of the VEGP SER.

*AP1000 COL Information Items*

- *STD COL 6.6-1*

*In Section 6.6 of the NRC staff FSER (NUREG 1793, dated September 2004), the staff concluded that the AP1000 ISI program for ASME Code Class 2 and 3 components is acceptable and meets the requirements of 10 CFR 50.55a with regard to the preservice and inservice inspectability of these components. The specific version of the ASME Code, Section XI used as the baseline Code in the AP1000 certified design, is the 1998 Edition up to and including the 2000 Addenda. It should be noted that the staff did not identify any portions of the AP1000 ISI program for Class 1, 2 and 3 components that were excluded from the scope of the staff's review of the AP1000 DC (as the staff did for inservice testing of valves in AP1000 FSER Section 3.9.6.4). Therefore, the staff's conclusions regarding the acceptability of the AP1000 ISI program based on the 1998 Edition up to and including the 2000 Addenda of the ASME Code, Section XI with regard to preservice and inservice inspectability of Class 2 and 3 components remains unchanged. The staff's evaluation of the operational program aspects of the ASME Code Class 2 and 3 ISI program is addressed with Class 1 ISI in Section 5.2.4 of this SER. The review of the COL applicant's supplemental information also includes the adequacy of the ISI program for reactor containment (Class MC [metal containment]). In Revision 17 of the AP1000 DCD, Class MC components were added to the DCD, Section 6.6, as being within the scope of the ISI Program. The COL applicant incorporated DCD Section 6.6 in its entirety under Revision 1 of its FSAR. Accordingly, the staff's evaluation of this section focused on the acceptability of the COL applicant's supplemental information and responses to AP1000 COL information items and action items as they relate to ISI of ASME Code Class 2, 3, and MC components.*

*As part of STD COL 6.6-1, the COL applicant added to the end of DCD Section 6.6.2 words to state that the initial ISI program will incorporate the latest Edition and Addenda of the ASME Code (Section XI) approved in 10 CFR 50.55a(b) on the date 12 months before initial fuel load. The COL applicant stated that successive 120 month inspection intervals must comply with the requirements of the latest Edition and Addenda of the Code incorporated by reference in 10 CFR 50.55a(b) 12 months before the start of the 120 month interval, subject to the limitations and modifications listed in 10 CFR 50.55a(b). 10 CFR 50.55a(g) requires that inservice examinations of components and system pressure tests conducted during the initial 120 month inspection interval must comply with the requirements in the latest Edition and Addenda of the Code incorporated by reference in paragraph (b) of 10 CFR 50.55a on the date 12 months before the date scheduled for initial loading of fuel under a COL under 10 CFR Part 52. The staff concludes that the supplemental information provided by the COL applicant meets the NRC's regulations and is, therefore, acceptable.*

Note: For PTN the above discussion is for words added ahead of the DCD subsection 6.6.1 heading, not at the end of DCD Section 6.6.2.

*As part of STD COL 6.6-1, the COL applicant added to the end of DCD Section 6.6.1 words to state that Class 2 and 3 components are included in the equipment designation list contained in the ISI program. 10 CFR 50.55a(g)(3)(ii) in part, requires that Class 2 and 3 components be designed and provided with access to enable the performance of ISI examinations. In addition, the inclusion of Class 2 and 3 components is consistent with the*

*requirements of an ISI program as defined under ASME Section XI, and is, therefore, acceptable. The staff concludes that the supplemental information provided by the COL applicant meets the NRC's regulations and is, therefore, acceptable.*

*In Section 6.6 of the FSER (NUREG-1793), the staff identified COL Action Item 6.6-1 in which the COL applicant will prepare a PSI program and an ISI program for ASME Code, Class 2 and 3 systems, components and supports. The PSI and ISI programs will address the equipment and techniques used. As part of STD COL 6.6-1, the COL applicant describes the use of visual, surface, ultrasonic, alternative examination techniques, and the use of automated equipment to perform the examinations. The COL applicant referenced the relevant portions of the ASME Code, Section XI to describe the nondestructive examination techniques and alternative examinations. The COL applicant also added information to describe the 120-month inspection interval as defined by IW- 2400 for Inspection Program B and the evaluation of examination results as defined by the ASME Code, Section XI, paragraphs IWC-, IWD-, IWE-, or IWF-3400 acceptance criteria. In addition, the COL applicant appropriately referenced 10 CFR 50.55a(b)(2)(xix) and IWA-2240 as described in the 1997 Addenda of the ASME Code, Section XI when applying alternative examination provisions. The supplemental information provided by the COL applicant meets the requirements in 10 CFR 50.55a, the ASME Code, Section XI, and the guidelines in RG 1.206, Section C.III.1, Chapter 6, C.I.6.6.3, and is, therefore, acceptable. Based on the discussion above, the staff concludes that the supplemental information under STD COL 6.6-1 is acceptable.*

- *STD COL 6.6-2*

*As part of STD COL 6.6-2, the COL applicant states that during the construction phase of the project, anomalies and construction issues are addressed using change control procedures. Modifications reviewed following DC will adhere to the same level of review as the certified design, thus, control of accessibility is maintained during post-DC activities. Control of accessibility for inspectablility and testing during post- DC activities is provided via procedures for design control and plant modifications. In the NRC staff's FSER (NUREG-1793), the staff identified COL Action Item 6.6-2, which recommends COL applicants referencing the AP1000 certified design address the controls to preserve accessibility and inspectability for ASME Code, Section III, Class 2 and 3 components and piping during construction or other post-DC activities. The NRC staff reviewed the applicant's proposed resolution of COL Action Item 6.6-2 using NUREG-0800, Section 6.6. The staff finds that the accessibility needed to perform PSI/ISI examinations is maintained during the design, construction and operational phases, which satisfies NUREG-0800, Section 6.6 recommendations for accessibility. In addition, the supplemental information meets the regulations under 10 CFR 50.55a(g)(3)(ii), which requires that Class 1, 2, and 3 components be designed and provided with access that enables the performance of ISI examinations, and the requirements under ASME Code, Section XI, IWA-1500. Based on the discussion above, the staff concludes that STD COL 6.6-2 is acceptable.*

<u>*Supplemental Information*</u>

- *STD SUP 6.6-1*

*As part of STD SUP 6.6-1, the COL applicant added supplemental information to the AP1000 DCD, Section 6.6.2, to address accessibility of Class 2, 3, and Class MC pressure retaining components to permit preservice and inservice examinations. Factors considered,*

*such as examination requirements, techniques, accessibility, geometry, and material selections, are used in establishing the designs with the goals being to eliminate uninspectable components,* reduce occupational radiation exposure, reduce inspection *times, allow state-of-the-art inspection systems, and enhance detection and the reliability of flaw characterization.*

*10 CFR 50.55a(g)(3)(ii), in part, requires that Class 2 and 3 components be designed and provided with access to enable the performance of ISI examinations. ASME Code, Section XI, IWA-1500 requires that access be provided to enable the performance of ISI examinations, along with design considerations to render ISI practical. The staff finds that the supplemental information under STD SUP 6.6-1 meets the requirements of 10 CFR 50.55a and ASME Code, Section XI, and is, therefore, acceptable.*

*License Condition*

- *Part 10, License Condition 6*

*The COL applicant proposed a license condition for BLN for all operational programs requiring that the licensee shall submit to the appropriate Director of the NRC a schedule, no later than 12 months after issuance of the COL, that supports planning for and conduct of NRC inspections of operational programs. The schedule shall be updated every 6 months until 12 months before scheduled fuel loading, and every month thereafter until either the operational program has been implemented or the plant has been placed into commercial service. A separate license condition for PSI and ISI program implementation requirements is not necessary in the BLN COL FSAR since it is a requirement under 10 CFR 50.55a. However, submittal of the schedule for the PSI and ISI program development is necessary to plan for and conduct NRC inspections during construction. The staff finds that this schedule will enable the staff to adequately plan and schedule inspections of the PSI and ISI programs during the construction phase. This proposed license condition is consistent with the policy established in SECY-05-0197, and is acceptable.*

### 6.6.5 Post Combined License Activities

For the reasons discussed in the technical evaluation section above, the staff proposes to include the following license condition:

- License Condition (6-5) - The licensee shall develop a schedule that supports planning for and conduct of NRC inspections of the operational programs (specifically, the PSI and ISI programs) listed in PTN COL FSAR Table 13.4-201, “Operational Programs Required by NRC Regulations.” This schedule must be available to the NRC staff no later than 12 months after issuance of the COL. The condition will also require that the schedule be updated every 6 months until 12 months before scheduled fuel load, and every month thereafter until either the operational programs listed in PTN COL FSAR Table 13.4-201 have been fully implemented or the plant has been placed in commercial service, whichever comes first.

### 6.6.6 Conclusion

The NRC staff reviewed the application and checked the referenced DCD. The NRC staff’s review confirmed that the applicant addressed the required information relating to ISI of ASME Code Class 2 and 3 components, and there is no outstanding information expected to be

addressed in the PTN COL FSAR related to this section. The results of the NRC staff's technical evaluation of the information incorporated by reference in the PTN COL application are documented in NUREG-1793 and its supplements.

In addition, the staff concludes that the relevant information presented in the PTN COL FSAR is acceptable and meets the requirements of GDC 45 and 10 CFR 50.55a. The staff based its conclusion on the following:

- STD COL 6.6-1 is acceptable because the staff concluded that the applicant's AP1000 ISI program for ASME Code Class 2, 3, and MC components is acceptable and meets the requirements of 10 CFR 50.55a with regard to the preservice and inservice inspectability of these components.

- STD COL 6.6-2 is acceptable because the staff concluded that the accessibility needed to perform PSI/ISI examinations is maintained during the design, construction and operational phases, and satisfies NUREG-0800, Section 6.6 acceptance criteria for accessibility.

- STD SUP 6.6-1 is acceptable because the staff concluded that accessibility to perform ISI examinations would be incorporated into the design, and satisfies the regulations under 10 CFR 50.55a(g)(3)(ii).