

NON-CONCURRENCE PROCESS COVER PAGE

The U.S. Nuclear Regulatory Commission (NRC) strives to establish and maintain an environment that encourages all employees to promptly raise concerns and differing views without fear of reprisal and to promote methods for raising concerns that will enhance a strong safety culture and support the agency's mission.

Employees are expected to discuss their views and concerns with their immediate supervisors on a regular, ongoing basis. If informal discussions do not resolve concerns, employees have various mechanisms for expressing and having their concerns and differing views heard and considered by management.

Management Directive, MD 10.158, "NRC Non-Concurrence Process," describes the Non-Concurrence Process (NCP), <http://nrcweb.nrc.gov:8600/policy/directives/catalog/md10.158.pdf>.

The NCP allows employees to document their differing views and concerns early in the decision-making process, have them responded to (if requested), and attach them to proposed documents moving through the management approval chain to support the decision-making process.

NRC Form 757, "Non-Concurrence Process" is used to document the process.

Section A of the form includes the personal opinions, views, and concerns of a non-concurring NRC employee.

Section B of the form includes the personal opinions and views of the non-concurring employee's immediate supervisor.

Section C of the form includes the agency's evaluation of the concerns and the agency's final position and outcome.

NOTE: Content in Sections A and B reflects personal opinions and views and does not represent official factual representation of the issues, nor official rationale for the agency decision. Section C includes the agency's official position on the facts, issues, and rationale for the final decision.

At the end of the process, the non-concurring employee(s):

☐ Concurred

☐ Continued to non-concur

1/27/15 ☒ Agreed with some of the changes to the subject document, but continued to non-concur

☐ Requested that the process be discontinued

☐ The non-concurring employee(s) requested that the record be non-public.

1/27/15 ☒ The non-concurring employee(s) requested that the record be public.

☐ This record is non-public and for official use only.

☐ This record has been reviewed and approved for public dissemination.



NON-CONCURRENCE PROCESS

SECTION A - TO BE COMPLETED BY NON-CONCURRING EMPLOYEE

TITLE OF SUBJECT DOCUMENT
SAFETY EVALUATION REGARDING CRYSTAL RIVER UNIT 3 LICENSE AMENDMENT REQUE

ADAMS ACCESSION NO.
ML15132A736

DOCUMENT SIGNER
Christopher P. Jackson

SIGNER TELEPHONE NO.
(301) 415-3456

TITLE
Branch Chief

ORGANIZATION
NRR/DSS/SRXB

NAME OF NON-CONCURRING EMPLOYEE(S)
Kent A. L. Wood

TELEPHONE NUMBER
(301) 415-4120

TITLE
Team Leader

ORGANIZATION
NRR/DSS/SRXB/SFT

☐ DOCUMENT AUTHOR ☐ DOCUMENT CONTRIBUTOR ☐ DOCUMENT REVIEWER ☒ ON CONCURRENCE

NON-CONCURRING EMPLOYEE'S SUPERVISOR

Christopher P. Jackson

TITLE
Branch Chief

ORGANIZATION
NRR/DSS/SRXB

☒ I WOULD LIKE MY NON-CONCURRENCE CONSIDERED AND WOULD LIKE A WRITTEN EVALUATION IN SECTION B AND C.

☐ I WOULD LIKE MY NON-CONCURRENCE CONSIDERED, BUT A WRITTEN EVALUATION IN SECTIONS B AND C IS NOT NECESSARY.

WHEN THE PROCESS IS COMPLETE, I WOULD LIKE THE NCP FORM: ☒ PUBLIC ☐ NON-PUBLIC

REASONS FOR NON-CONCURRENCE AND PROPOSED ALTERNATIVES (use continuation pages or attach Word document)

The proposed subject document "SAFETY EVALUATION REGARDING CRYSTAL RIVER UNIT 3 LICENSE AMENDMENT REQUEST FOR PERMANENTLY FUELED LICNESE AND TECHNICAL SPECIFICATIONS" ML15131A736 makes a regulatory finding regarding a license amendment request based on a licensee commitment. Since licensee commitments are not legally binding upon the licensee they are not appropriate basis for a regulatory finding regarding a license amendment request. The licensee's commitment should be escalated to an obligation. See attached for further details.

SIGNATURE

DATE
6/3/14

- Crystal River was obligated to comply with 10CFR70.24, “*Criticality accident requirements*” in order to be granted a license to possess a sufficient quantity of special nuclear material to operate the reactor. Therefore the potential for a criticality accident would have been part of Crystal River’s design basis since the beginning.
- Current Crystal River is currently licensed to 10CFR50.68 “*Criticality accident requirements*” in lieu of 10CFR70.24.
- In order to comply with 10CFR50.68 Crystal River has technical specifications for spent fuel pool (SFP) soluble boron (3.7.14), for spent fuel assembly storage (3.7.15), maximum U-235 enrichment (4.3.1.1.a), and SFP storage cell pitch (4.3.1.1.c and 4.3.1.1.d). The Crystal River SFP neutron-absorbing material (NAM) is as important as any of those as an initial condition of a design basis accident or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier or as a primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.
- 10CFR50.36, *Technical specifications*, regulates the content of licensees technical specifications. The Crystal River SFP NAM meets the criteria listed in paragraphs (B) and (C) of 10CFR50.36(c)(2)(ii) for inclusion in the technical specifications.
- Pursuant to 10 CFR 50.82, *Termination of license*, Crystal River sent a letter to the NRC on March 13, 2013 stating its permanent cessation of operation and permanent removal of fuel from the reactor (ML13058A380).
- Per 10 CFR 50.82(a)(3), the licensee has 60 years from the time it permanently ceased operation to complete decommissioning activities, essentially extending the period of operation of Crystal River’s spent fuel pool to March 2073. Additionally, 10 CFR 50.82(a)(3) allows for extensions to complete decommissioning activities.
- Crystal River submitted a license amendment request to the NRC on September 4, 2013 to transition to permanently defueled technical specifications (ML13316C083).
- As stated in LIC-101, the NRC must make the following findings in order to issue an amendment:
 - “The application for amendment filed by [licensee] dated [insert date] complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - There is reasonable assurance: (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;”

- In order to make those findings, the passive, long lived components used to support the spent fuel pool, including the NAM, must be able to perform their safety function for as long as the SFP is used to store fuel.
- Absent a licensee obligation to the contrary, it must be assumed that the SFP will be in operation during the full decommissioning period, in this case March 2073, or beyond.
- Crystal River responded to a March 6, 2015 RAI, with a commitment stating that all fuel assemblies would be removed from the SFP by December 31, 2019, or a license amendment request will be submitted to incorporate their NAM monitoring programs into the technical specifications.
- While the commitment appears to limit the timeframe over which the SFP would be in operation, the NRC staff cannot make a safety finding from a licensee commitment.
 - LIC-105, Managing Regulatory Commitments Made by Licensees to the NRC, Rev 5 states that, "Since commitments made by a licensee in support of a license action, such as a license amendment request, are not legally binding, the staff's safety evaluation (SE) should not rely on commitments as a basis for any part of the staff's approval of a proposed licensing action. Therefore, if the NRC staff needs to rely on a regulatory commitment in an SE, then the staff must escalate the commitment to an obligation, or incorporate it into a mandated licensing basis document."
- The question then becomes whether to escalate the commitment to an obligation, i.e., license condition or technical specification, or incorporate it into a mandated licensing basis document i.e., the UFSAR.
 - LIC-100, Control of Licensing Bases for Operating Reactors, Revision 1 defines obligations as "conditions or actions that are legally binding requirements imposed on licensees through applicable rules, regulations, orders, and licenses (including technical specifications and license conditions). The imposition of obligations (sometimes referred to as regulatory requirements) during routine interactions with licensees should be reserved for matters that satisfy the criteria of 10 CFR 50.36 or are otherwise found to be of high safety or regulatory significance. The major distinction between obligations and other parts of the licensing bases is that changes generally cannot be made without prior NRC approval."
 - LIC-100, defines mandated licensing basis document as "documents, such as the updated FSAR, the quality assurance program, the security plan, and the emergency plan, for which the NRC has established requirements for content, change control and reporting. What information should be included in these documents is specified in applicable regulations and regulatory guides. The change control mechanisms and reporting requirements are defined by regulations such as 10 CFR 50.59, 50.54, and 50.71."
- As it was shown above that the Crystal River SFP NAM meets one or more criteria of 10CFR50.36 it is appropriate to escalate the licensee's commitment into an obligation.

NON-CONCURRENCE PROCESS

NCP-2015-007

SECTION B - TO BE COMPLETED BY NON-CONCURRING EMPLOYEE'S SUPERVISOR

TITLE OF SUBJECT DOCUMENT

Safety Evaluation Regarding Crystal River Unit 3 License Amendment Request

ADAMS ACCESSION NO.

ML15132A736

NAME

Christopher Jackson

TITLE

Chief

TELEPHONE NUMBER

415-3456

ORGANIZATION

Reactor Systems Branch, Office of Nuclear Reactor Regulation

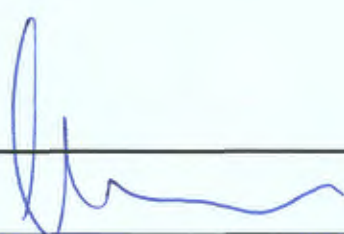
COMMENTS FOR THE NCP REVIEWER TO CONSIDER (use continuation pages or attach Word document)

Based on the applicant's response to the Request for Additional Information, the licensee does not intend to continue to monitor the aging of the neutron absorbing material in the pool. Instead the licensee intends to remove the fuel from the pool before 2020. This approach is acceptable from both a safety perspective and a regulatory perspective. Because the applicant will take actions necessary to maintain the facility in a safe condition, in accordance with 10 CFR 50.51(b), SRXB finds the request acceptable. These actions are necessary because the two types of neutron absorbing material currently in the pool require age monitoring. The carborundum in the pool is degrading based on previous testing and additional testing would be necessary if the material were kept in service long-term. Additionally, the Boral in the pool has been there for approximately 14 years and would need to be tested eventually. Although the licensee demonstrated that testing would not be needed prior to 2020, the typical monitoring frequency for Boral is 10 years.

With regard to elevating the licensee's commitment to an enforceable requirement, I agree with Kent. A direct reading of both LIC-101 and LIC-105 suggests that this type of commitment should be elevated in some way. The staff drafted a request for additional information (ML1510A126), in accordance with both office instructions. However, DORL has taken the position that a license condition related to this review is not required. DORL is the responsible organization for both office instructions.

Given that the licensee's commitment adequately addresses the safety issue and satisfies the requirements, I am comfortable with completing the safety review and allowing DORL to interpret LIC-101 and LIC-105 with regard to commitments.

SIGNATURE



DATE

6/10/2015

NON-CONCURRENCE PROCESS

NCP-2015-007

SECTION C - TO BE COMPLETED BY NCP COORDINATOR

TITLE OF SUBJECT DOCUMENT

Safety Evaluation Regarding CR-3 Defueled Technical Specifications

ADAMS ACCESSION NO.

ML15132A736

NAME

Meena K. Khanna

TITLE

Chief, Plant Licensing 4-2 and Decommissioning Transition Branch

TELEPHONE NUMBER

415-2150

ORGANIZATION

Division of Operating Reactor Licensing, Office of Nuclear Reactor Regulation

AGREED UPON SUMMARY OF ISSUES (use continuation pages or attach Word document)

See Attachment 1.

EVALUATION OF NON-CONCURRENCE AND RATIONALE FOR DECISION (use continuation pages or attach Word document)

See Attachment 2.

TYPED NAME OF NCP COORDINATOR

Meena K. Khanna

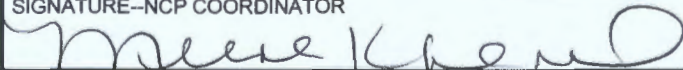
TITLE

Chief, Plant Licensing 4-2 and Decommissioning Transn. Branch

ORGANIZATION

Division of Operating Reactor Licensing, Office of Nuclear Reactor Regulation

SIGNATURE--NCP COORDINATOR



DATE

7/15/15

TYPED NAME OF NCP APPROVER

Robert Taylor

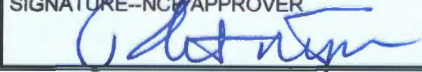
TITLE

Deputy Division Director

ORGANIZATION

Division of Safety Systems, Office of Nuclear Reactor Regulation

SIGNATURE--NCP APPROVER



DATE

7/24/15

SECTION C – TO BE COMPLETED BY DOCUMENT SPONSOR

ATTACHMENT 1

NAME: Meena Khanna

TITLE: Branch Chief, Plant Licensing Branch LPL4-2 and Decommissioning Transition Branch,
Division of Operating Reactor Licensing

ORGANIZATION: Office of Nuclear Reactor Regulation

Summary of Requested Action and Non-Concurrence Issue (As Documented in the June 3, 2015 Non-Concurrence and Updated in an Email Dated June 16, 2015, from the Non-Concurring Staff Member):

During the concurrence review of the technical branch safety evaluation input regarding the Crystal River Unit 3 (CR-3) License Amendment Request for Permanently Defueled Technical Specifications (TSs), a technical staff member submitted a non-concurrence related to the aging management of neutron absorbing components in the spent fuel pool (SFP). A description of the background and summary of the issues raised in the non-concurrence is provided below.

- *Background of Non-concurring Staff Member's Issue:*
 - Passive, long lived components used to support the spent fuel pool (SFP), including the neutron absorbing material (NAM), must be able to perform their safety function for as long as the SFP is used to store fuel.
 - These materials meet the criteria in 10 CFR 50.36(c)(2)(ii)(B) and (C) for inclusion in the TSs.
 - 10 CFR 50.82(a)(3) authorizes the licensee, 60 years from the time it permanently ceased operation, to complete decommissioning activities, essentially extending the period of operation of Crystal River's spent fuel pool to March 2073. This regulation also allows for extensions to complete decommissioning activities.
 - In response to the staff's Request for Additional Information (RAI), dated March 6, 2015, the licensee submitted a commitment stating that all fuel assemblies would be removed from the SFP by December 31, 2019, or a license amendment request would be submitted to incorporate their NAM monitoring programs into the TSs.
- *Non-concurring Staff Member's Issue:*
 - A license commitment is not legally binding, and therefore cannot be used as the basis for the staff's regulatory finding in the safety evaluation. Because the Crystal River SFP NAM meets one or more criteria of 10 CFR 50.36, it is appropriate to escalate the licensee's commitment into an obligation. The non-concurring staff member indicated that his issue raised in the non-concurrence was based on guidance provided in the NRC's Office of Nuclear Reactor Regulation's Office Instructions LIC-105, Rev. 5, "Managing Regulatory Commitments Made by Licensees to the NRC" and LIC-100, Rev. 1, "Control of Licensing Bases for Operating Reactors."

ATTACHMENT 2

BACKGROUND AND ACTIONS TAKEN TO ADDRESS NON-CONCURRENCE

By letter dated October 29, 2013, Duke Energy Florida, Inc. (the licensee) submitted a license amendment request (LAR) for Crystal River Unit 3 (CR-3), which is available in the Agencywide Documents Access and Management System (ADAMS) under Accession No. ML13316C083, proposing to remove or revise certain license conditions that are no longer applicable to CR-3 in the permanently shutdown and defueled condition. In addition, the licensee proposes to extensively revise the CR-3 Improved Technical Specifications in order to create the CR-3 Permanently Defueled Technical Specifications (PDTS). The licensee provided supplemental information to the LAR by letters dated May 7, 2014 (ML14139A006), June 17, 2014 (ML14178B284), and March 6, 2015 (ML15076A035).

The regulations in Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50.51(b) address the continuation of license for facilities that have permanently ceased operations. In an effort to obtain further information to support a staff position, the staff issued a request for additional information (RAI) on January 7, 2015 (ADAMS Accession No. ML14274A139). The staff's RAI requested information on how the licensee monitors structures, systems, and components of the spent fuel pool, fire protection program, and radiation protection program to demonstrate compliance with the provisions of 10 CFR Part 50.51(b). The RAI specifically requested that the licensee provide how it intends to monitor and maintain the spent fuel pool (SFP) neutron absorbing material (NAM) since they are integral to demonstrating compliance with the NRC regulations.

The licensee's response, dated March 6, 2015, provided a technical rationale for not needing an aging management program prior to December 31, 2019. The licensee indicated that extrapolated past coupon tests show that the neutron poison weight loss in the Carborundum NAM are expected to remain well within acceptable limits through 2023. For the Boral NAM, the licensee cited industry operating experience that suggests that the fuel can be stored safely past 2020. The staff finds this acceptable because the projected degradation of the NAM, coupled with TS requirements governing SFP subcriticality that the licensee has proposed to retain during decommissioning, provide reasonable assurance that public health and safety will be protected until at least the end of 2019.

Additionally, the licensee submitted a regulatory commitment stating that if all spent fuel assemblies have not been removed from the spent fuel pool by December 31, 2019, the licensee would submit a license amendment request, prior to that date, to incorporate Boral and Carborundum surveillance programs into the CR3 Technical Specifications. By adding and then fulfilling the commitment, the licensee will have added additional assurance to that addressed above, in that any potential NAM degradation would be identified before safety margins are challenged.

On June 3, 2015, during the concurrence process of the safety evaluation (SE) input, a staff member in the Reactor Systems Branch (SRXB) of the Division of Safety Systems (DSS) submitted a non-concurrence. The non-concurring staff member expressed a concern that a license commitment is not legally binding, and therefore cannot be used as the basis for the staff's regulatory finding in the safety evaluation, in accordance with staff guidance. He further stated that because the Crystal River SFP NAM meets one or more criteria of 10 CFR 50.36, it is appropriate to escalate the licensee's commitment into an obligation.

The staff agrees that commitments made by a licensee in support of a license amendment request are not legally binding and that the staff's SE should not rely on commitments as a basis for any part of the staff's approval of a proposed amendment. However, the NRC may rely on a commitment if it is escalated to an obligation or subsequently incorporated into a mandated licensing basis document (i.e., placed in the Updated Final Safety Analysis Report (UFSAR)).¹

In response to the non-concurrence, the staff requested that the licensee document the commitment in the facility's UFSAR. The licensee agreed to the request, thereby ensuring that the provisions of 10 CFR 50.59 would apply to any commitment modification. The SE has been updated to reflect that the licensee will include the commitment in its UFSAR. Therefore, based on the inclusion of the commitment in the UFSAR, the staff has additional assurance that the licensee will take adequate action, in the event that it does not remove the fuel from the spent fuel pool by 2019. This information was communicated to the non-concurring staff member on June 11, 2015.

After informing the non-concurring staff member that the licensee agreed to include the commitment in the UFSAR, the non-concurring staff member sent an email (dated June 16, 2015), which stated that he did not believe that this adequately addressed his issue and added the following additional information: "since these materials meet the criteria for inclusion in the TSs, incorporating the commitment into the UFSAR is insufficient."

The staff disagrees that the information being relied upon in the licensee's submittal, i.e., that the licensee committed to remove all fuel from the SFP by December 31, 2019, to provide reasonable assurance of safety, meets the criteria in 10 CFR 50.36(c)(2)(ii)(B) and (C), for what is required to be included in the CR-3 TSs. Specifically, the licensee submitted information, which provides reasonable assurance to the staff that the NAM will continue to perform its safety function through 2019. In addition, the licensee has agreed to include its commitment in the UFSAR, which will become part of its licensing basis to remove fuel or alternatively submit a license amendment request. The staff agrees that it is inappropriate to rely upon a licensee commitment to make a regulatory finding. However, since the licensee has agreed to incorporate this commitment into its UFSAR, the staff finds this consistent with its current guidance in NRC's Office of Nuclear Reactor Regulation Office Instruction LIC-101, "License Amendment Review Procedures." Therefore, the staff finds that neither of these actions are consistent with the criteria stipulated in 10 CFR 50.36.

Discussion of Staff Response to Non-Concurrence Issue:

Reasonable Assurance of Public Health and Safety

The staff's technical and safety evaluation concludes that the NAM in the CR-3 SFP can perform its safety function through the end of 2019. In making its determination, the staff considered the following:

- The licensee has provided information that any degradation of the Boral and Carborundum neutron absorbing material in the CR-3 SFP will not challenge the plant's TS subcriticality safety limits or NRC regulations through the end of 2019;

¹ The guidance for escalation of a licensee commitment to an obligation or incorporation into a mandated licensing basis document is provided in Section 4.4 of NRR Office Instruction LIC-101 (ML113200053).

- The licensee has incorporated a regulatory commitment into its UFSAR that requires it to remove the spent fuel from the SFP by December 31, 2019, or submit a license amendment to incorporate NAM surveillance programs into the CR-3 TSs and;
- The licensee's proposed changes retain the TS and systems for the SFP needed to keep the fuel in a subcritical condition. For example, TS 4.3.1, "Criticality," which provides a description and requirements regarding prevention of criticality of spent fuel, is being retained in the permanently defueled TS for CR-3.

Based on the above, the staff has sufficient information, on the docket, to conclude with reasonable assurance, that the licensee has an adequate plan to remove the fuel from the SFP by 2019, or take appropriate actions (e.g., by amending its license).

Oversight Activities and Applicable Regulatory Framework

In addition to ensuring safety through the review of licensing activities, the NRC also relies on its oversight activities to ensure plant safety at operating and decommissioned nuclear power plants. The routine oversight process periodically looks at the status of commitments as well as the 50.59 evaluations. Further, regional inspectors conduct inspections of decommissioned and permanently shutdown plants to ensure compliance with governing regulations. Licensees undergoing decommissioning are required to comply with the Maintenance Rule (10 CFR 50.65). Therefore, the NRC's continued regulatory oversight will ensure public health and safety.

The Maintenance Rule requires that "licensees shall monitor the performance or condition of structures, systems, or components, against licensee-established goals, in a manner sufficient to provide reasonable assurance that such structures, systems, and components, are capable of fulfilling their intended functions. Such goals shall be established commensurate with safety and, where practical, take into account industry-wide operating experience. When the performance or condition of a structure, system, or component does not meet established goals, appropriate corrective action shall be taken. For a nuclear power plant for which the licensee has submitted the certifications specified in Sec. 50.82(a)(1), this section only shall apply to the extent that the licensee shall monitor the performance or condition of all structures, systems, or components associated with the storage, control, and maintenance of spent fuel in a safe condition, in a manner sufficient to provide reasonable assurance that such structures, systems, and components are capable of fulfilling their intended functions." Further, the regional inspectors conduct inspections of the decommissioned and permanently shutdown plants, to ensure compliance in this area.

It is further noted that the staff issued a draft Generic Letter (GL), "Monitoring of Neutron-Absorbing Materials in Spent Fuel Pools," on June 4, 2015, and is seeking public comment on the burden to licensees, via the Office of Management and Budget process. The Draft GL is available in ADAMS under Accession No. ML14181B123. Upon final issuance, the GL will apply to all nuclear power reactors, including Crystal River, with a license issued under 10 CFR Part 50, except those that have permanently ceased operations with all reactor fuel removed from on-site spent fuel pool storage. The GL is intended to gather information about programs to monitor boron degradation at licensed facilities, or the lack thereof. At that time, if the results of the information collection reveal a safety issue, the staff could issue an Order, rulemaking or other regulatory action deemed appropriate to resolve the safety concern.

Conclusion

In summary, there is evidence that the limited degradation to the neutron absorbing material in the CR-3 SFP will not challenge the plant's TS subcriticality safety limits or NRC regulations through the end of 2019; the licensee has agreed to include its commitment to remove all fuel assemblies from the SFP by December 31, 2019, in its UFSAR, or submit a license amendment request to incorporate its NAM monitoring programs into the TSs; and CR-3 will retain the TS and systems for the SFP needed to keep the fuel in a subcritical condition. In addition, NRC oversight activities, including inspections performed to verify the licensee's compliance with the Maintenance Rule, will provide further assurance that the CR-3 SFP is safely operated and maintained during the period of decommissioning. Therefore, the staff concludes, with reasonable assurance, that the CR-3 neutron absorbing material will function, in accordance with the licensing basis, until the fuel is removed from the SFP in 2019 or the license is amended.

A meeting was held with the non-concurring individual to convey the staff's conclusions and its intent to issue the safety evaluation, which has been revised to address the issue that was raised in the non-concurrence. NRR appreciates the thoughtful consideration provided on the issue of this non-concurrence.