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
- ☑ 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.
  - ☑ 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.

NRC FORM 757
NRC MD 10.158
(11-2014)

U. S. NUCLEAR REGULATORY COMMISSION

NON-CONCURRENCE PROCESS

NCP TRACKING NUMBER: NCP-2015-001

SECTION A - TO BE COMPLETED BY NON-CONCURRING EMPLOYEE

TITLE OF SUBJECT DOCUMENT	ADAMS ACCESSION NO.
Incorporation by Reference of Institute of Electrical and Electronics Engineers Standard 603-2009	ML113191306

DOCUMENT SIGNER	SIGNER TELEPHONE NO.
William Dean	(301) 415-1270

TITLE	ORGANIZATION
Director	NRR

NAME OF NON-CONCURRING EMPLOYEE(S)	TELEPHONE NUMBER
Terry Jackson, Deanna Zhang	(301) 415-7313

TITLE	ORGANIZATION
Branch Chief; Senior Electronics Engineer	NRO/DE/ICE1

☐ DOCUMENT AUTHOR ☐ DOCUMENT CONTRIBUTOR ☐ DOCUMENT REVIEWER ☑ ON CONCURRENCE

NON-CONCURRING EMPLOYEE'S SUPERVISOR: John Tappert

TITLE	ORGANIZATION
Director	NRO/DE

☑ 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)

This non-concurrence is being generated to address the following issue with "Incorporation by Reference – Institute of Electrical and Electronics Engineers Standard 603-2009 (ADAMS Accession No. ML113191306):"

1. The rule language, associated guidance, and statements of consideration regarding defense-in-depth and diversity, that was originally proposed by the rulemaking working group, should be re-introduced into the proposed rule to provide clear regulatory requirements for the future.

Attachment A amplifies the issue and provides recommendations to address the non-concurrence.

SIGNATURE	DATE
Terry W. Jackson	28 Jan 2015

Attachment A: Basis for NCP-2015-001

Statement of Issues

The rule language, associated guidance, and statements of consideration regarding defense-in-depth and diversity, that was originally proposed by the rulemaking working group, should be re-introduced into the proposed rule to provide clear regulatory requirements for the future.

While evaluation of the current defense-in-depth and diversity criteria is supported, the criteria should remain in the proposed rule for the following reasons.

1. Removal of the defense-in-depth and diversity criteria leaves a regulatory gap and creates ambiguity regarding the requirements for that technical area. Unlike IEEE Std. 603-1991, the 2009 version of the standard contains a clause addressing common-cause failure. However, this clause does not contain any requirements, but points to guidance in another standard. The draft rulemaking package addresses the current defense-in-depth and diversity criteria as guidance. Therefore, it is unclear what requirements would be in place and provide sufficient criteria until such time a future defense-in-depth and diversity rulemaking is completed. Having a clear set of requirements in place is important, particularly for new reactor applications as it requires one of the few systematic analysis in the instrumentation and control (I&C) area. The defense-in-depth and diversity analysis helps both applicants and regulators better understand the proposed I&C designs, including safety margin and interface with other plant systems. This is a particular benefit for plants having little to no operating experience. It is better to have defense-in-depth and diversity requirements, which have been used for the past 20+ years in place, and then replace it with new defense-in-depth and diversity requirements as needed, than to remove the requirements and replace them at an uncertain future date.

2. Fundamentally, there is not a clear identification of the problems/issues with the current defense-in-depth and diversity criteria or a plan to address these problems. To date, there has been little to no intra-agency interaction to discuss the issues with the defense-in-depth and diversity criteria and how to best address them. The draft SECY identifies three examples of potential issues with the current defense-in-depth and diversity criteria: complex programmable logic, consideration to include hardware common-cause failure within the scope of a defense-in-depth and diversity analysis, and integration with risk-informed processes. However, it appears these issues either (a) could be addressed in guidance, (b) require a significant policy change, or (c) require significant development of technical bases. Without a clear vision, a high priority rulemaking in a short timeframe could result in the placement of inadequate/incorrect criteria with little technical basis, or a protracted rulemaking requiring significant staff resources. Rather, the agency should (1) take time to identify the problem and create a

roadmap to address it; (2) develop the necessary technical basis; and (3) pursue rulemaking, as needed. In the meantime, the original proposed defense-in-depth and diversity criteria should be included in the current rulemaking to provide the necessary requirements for this important topic.

Discussion and Recommendations

Defense-in-depth and diversity are two fundamental safety principles that are foundational for nuclear safety. Embodied in these principles is the notion that a single layer of defense, although designed, constructed, operated, and maintained in a quality manner, could potentially fail with significant consequences. Therefore, multiple, diverse layers of defense are used to reduce the likelihood of such failures and consequences. In SECY-93-087, the NRC staff addressed a need for defense-in-depth and diversity requirements when using digital instrumentation and controls. Digital systems, while they provide a significant advantage in processing power, diagnostics, and information display, are significantly more complex than their analog predecessors, and it is generally agreed by experts that it is not possible to fully test such systems for the absence of design errors. Typically, digital safety systems have the same software (logic) across redundant divisions such that a software failure could disable a safety function. As a result of the common-cause failure concern, the staff proposed that defense-in-depth and diversity be utilized. In the SRM to SECY-93-087, the Commission approved the following four basic principles for requiring defense-in-depth and diversity.

1. The applicant shall assess the defense-in-depth and diversity of the proposed instrumentation and control system to demonstrate that vulnerabilities to common-mode failure have been adequately addressed.

2. If performing the assessment, the vendor or applicant shall analyze each postulated common-mode failure for each event that is evaluated in the accident analysis section of the safety analysis report using best-estimate methods. The vendor or applicant shall demonstrate adequate diversity within the design for each of these events.

3. If a postulated common-mode failure could disable a safety function, then a diverse means, with a documented basis that the diverse means is unlikely to be subject to the same common-mode failure, shall be required to perform either the same function or a different function. The diverse or different function may be performed by a non-safety system if the system is of sufficient quality to perform the necessary function under the associated event conditions.

4. A set of displays and controls located in the main control room shall be provided for manual, system-level actuation of critical safety functions and monitoring of parameters that support the safety functions. The displays and controls shall be independent and diverse from the safety computer system identified in Items 1 and 3 above.

These criteria are consistent with similar criteria and positions used by other nuclear regulators, as noted through the Multinational Design Evaluation Program common position, "Common Position on the Treatment of Common Cause Failure by Software Within Digital Safety Systems." *See http://www.oecd-nea.org/mdep/common-positions/dicwg-01.pdf.*

Safety Reasons for Defense-in-Depth and Diversity Criteria for Digital I&C Safety Systems

The need for defense-in-depth and diversity in digital I&C systems remains present today. While advances have been made in tools and techniques to develop digital I&C systems, the potential for software defects still exists as a credible failure mechanism. While the U.S. nuclear industry has incorporated digital I&C systems into some applications, significant use of digital technology has not been achieved to date. In areas where digital I&C technology has been utilized (namely non-safety-related applications), the performance of such systems has been mixed with some applications suffering a number of performance issues, particularly at their initial operation.

The proposed rule language from the rulemaking working group included the four defense-in-depth and diversity criteria found in the SRM to SECY-93-087. Revisions to the rulemaking package to address a non-concurrence removed the criteria from the rule language, but still discuss the criteria as guidance in the statements of consideration. However, statements of consideration are not regulatory requirements. The current statements of consideration also mention that GDC 22 requires a defense-in-depth and diversity analysis. GDC 22 is not specific to require a defense-in-depth and diversity analysis and only states "Design techniques, such as functional diversity or diversity in component design and principles of operation, shall be used to the extent practical to prevent the loss of the protective function." Furthermore, many operating reactors are pre-GDC plants and therefore would not be subject to this requirement.

If the current rule language is used, the only regulatory requirement in 10 CFR 50.55a(h) for defense-in-depth and diversity for I&C systems is the title of the IEEE Std 603-2009, Clause 5.16, itself – "Common-cause failure." The original proposed rule language from the rulemaking working group specifies that licensees and applicants are to assess the potential for common-cause failure, identify means to mitigate it (if necessary), and analyze the effectiveness of the mitigation features. These criteria for defense-in-depth and diversity are at the appropriate level of specificity for requirements in 10 CFR 50.55a(h), and they are in line with other criteria provided for similar technical issues, such as single-failure protection. The draft SECY for the proposed IEEE 603 rulemaking states that the staff will continue to use the current guidance (e.g., the SRM to SECY-93-087 and Standard Review Plan Branch Technical Position 7-19) until the high priority rulemaking is completed. While this may seem to be an amenable interim solution, it poses two problems:

- There would still be a lack of solid defense-in-depth and diversity requirement from which to base the current guidance and future licensing decisions upon (the SRM to SECY-93-087 is now discussed as guidance versus a requirement).

- In the draft SECY for the proposed rulemaking, the staff establishes the notion that criteria for the SRM to SECY-93-087 are somewhat flawed or outdated without providing specifics. As a result, the validity of all the criteria may be questioned during licensing proceedings; particularly if the staff attempts to hold these at the same level of requirements as in the past 20+ years. As such, this would lead to greater ambiguity of regulatory requirements during the interim period. Coupled with lack of clarity in the purpose and outcome of the proposed rulemaking on defense-in-depth and diversity, the interim period could exist for an extended period of time.

From experience with licensing new reactors, the defense-in-depth and diversity criteria require one of the few systematic analysis in the I&C area. The analysis has benefited both the applicant and the regulator by helping to identify the level of safety margin and understanding the integration of the I&C systems with other plant systems. As new reactors are being constructed, a number of design changes are expected. The triggering criteria in the proposed rule identifies a change in the diversity strategy as one element that would require a licensee to use the newer I&C requirements in 10 CFR 50.55a(h). Some of the designs, such as the AP1000 design, were designed to older standards which did not specify performance of a defense-in-depth and diversity analysis. Such plants would benefit from the combination of the triggering criteria and defense-in-depth and diversity requirements to ensure potential safety concerns continue to be adequately addressed. The current rule language leaves a significant gap in how to address this important technical issue, would hamper the staff in future licensing reviews to ensure adequate safety, and is not consistent with the NRC's Principles of Good Regulation; particularly with regards to clarity.

Non-Concurrence Response Associated With Defense-in-Depth and Diversity

The rule language for defense-in-depth and diversity was removed to address a staff member's non-concurrence. In the non-concurrence, the staff member identified issues with the level of technological and architectural complexity for current and future I&C systems. In his concern, the staff member recommended that the agency require a minimum of two separate, diverse paths from sensor output to final actuating device for all safety system functions to address system-level CCFs. In addition to this recommendation, the staff member also requested that the agency limit the level of complexity in I&C safety systems and require a systems-based hazard analysis to address architectural complexity. The first recommendation that requests two separate, diverse paths be required from sensor to final actuation device, does not conflict with the four defense-in-depth and diversity criteria that was in the SRM to SECY-93-087. The recommendation could be implemented as guidance with those criteria in place as requirements. However, the response to the non-concurrence removed all the defense-in-depth and diversity requirements from the proposed rule. As a result, a larger safety issue was created with removal of the criteria and the action still does not address the staff member's concern.

Prevailing Staff Viewpoint

The comment to maintain the defense-in-depth and diversity criteria within the proposed rulemaking package was made on two occasions. As the document sponsor for the non-concurrence mentioned above, NRR solicited NRO input on removing the criteria as part of addressing the non-concurrence. Similar comments as those presented here were provided at that time. When the rulemaking package came to NRO for concurrence, these comments were again provided. From the discussions that followed these comments, it is understood that the defense-in-depth and diversity criteria would remain out of the current rulemaking package for the following reasons:

1. Significant technical evolution including the use of field-programmable gate arrays and similar technology, new methods and tools for developing digital systems, operating experience, the probability of common cause failures, and the safety significance of such failures.

2. A high-priority rulemaking would be pursued to replace or confirm the criteria in the SRM to SECY-93-087 within 2 to 3 years.

3. While the high-priority rulemaking is taking place, the agency will continue to require the criteria in the SRM to be met by applicants and licensees.

The current SECY requesting Commission approval to issue the proposed IEEE 603 rulemaking for public comment states that the defense-in-depth and diversity criteria from the SRM to SECY-93-087 should be updated in light of the significant technical evolution that has occurred in the past 20 years, including expanded use of field-programmable gate arrays and similar technologies, new methods and tools for the development of digital systems, operating experience, the probability of common cause failure, and safety significance of the failures. The SECY fails to adequately identify the problem with the current defense-in-depth criteria in the SRM to SECY-93-087, how the areas of significant technical evolution impact and relate to those criteria, and a vision for how to address those problems. Even if there were agreement of the vision for the SECY and future rulemaking, at this point in time, the timeline for the SECY and eventual rulemaking would take at a minimum several years to complete and not support a high priority rulemaking effort. The draft SECY identifies three examples for removing the original defense-in-depth and diversity criteria and pursuing a high priority, separate rulemaking. The first example noted that the current criteria do not address software related to development of complex logic, such as the logic for a field-programmable gate array. The staff currently has guidance in the Standard Review Plan to identify that such programmable logic is considered software for licensing purposes (Branch Technical Position 7-19). In a second example, the proposed rulemaking includes the question of incorporating hardware common-cause failures within the scope of defense-in-depth and diversity evaluations. The inclusion of hardware common-cause failures would be a significant impact on the industry and be a major policy decision by the Commission. The third example identifies issues with risk-informing defense-in-depth and diversity evaluations for digital I&C systems. As described in Digital I&C Interim Staff

Guidance ISG-06, "The uncertainties associated with [digital] I&C system risk assessments currently are large enough to reinforce the need for diversity, defense-in-depth, and adequate safety margins, and the retention of deterministic requirements designed to assure their continued existence." It is generally agreed among the staff and experts, such as the Advisory Committee on Reactor Safeguards, that the state of the art for digital I&C probabilistic risk assessment still needs further development. Therefore, risk-informing defense-in-depth and diversity evaluations, and other I&C criteria, would require significant development of the technical basis that cannot be completed in the timeline for a high priority rulemaking.

It is always a good practice to review the regulatory framework to ensure that it is adequate and up-to-date and the effort to re-visit the topic of defense-in-depth and diversity is supported. However, there is not a clear identification of the problem associated with the defense-in-depth and diversity criteria or a clear vision on how to address the problem. For the problem aspects that were mentioned, it appears these either (1) may be addressed through guidance, (2) require significant development of a technical basis, or (3) require significant policy changes. As such, it is not expected that such rulemaking could be accomplished in a short timeframe consistent with a high priority rulemaking. The agency should not leave a gap in the regulations for defense-in-depth and diversity for years into the future. Rather, if there are specific technical issues with the four defense-in-depth and diversity criteria, then those issues should be addressed in the current rulemaking package. Complete removal of the four criteria without addressing the specific inadequacies of each criterion should not be done.

Recommended Changes to Address the Defense-in-Depth and Diversity Issues

As stated above, the initiative to revisit defense-in-depth and diversity for I&C systems is supported. It is an important area and will require considerable coordination, both internal and external to the agency. Therefore, the SECY should discuss future efforts to revisit defense-in-depth and diversity. Specifically, a research user need should be developed to establish any technical basis for proposing changes to the current defense-in-depth and diversity criteria. Once the technical basis for changes is established, then subsequent rulemaking can be pursued. It is anticipated that the next version of IEEE Std. 603 will be developed by 2019. At that time, rulemaking can be pursued to both incorporate the newest version of IEEE Std. 603 and make any subsequent updates to the defense-in-depth and diversity criteria for which the supporting technical basis should be available. It is recognized that the basis to remove the defense-in-depth and diversity criteria was due in part to address a non-concurrence. As an alternative, the issues raised by the non-concurrence should be included as questions to the public to solicit comments. Input from the public will help inform the current proposed rule, as well as any future activities associated with defense-in-depth and diversity. Furthermore, by proposing questions in the federal register notice, the agency can better address the non-concurrence technical issues by soliciting broader input on them. The following are suggested questions that could be added to the Federal Register Notice to address the prior staff non-concurrence:

- What modifications could be made to the proposed criteria for common-cause failure that would provide a more effective and efficient means to ensure adequate defense-in-depth and diversity for I&C systems?

- What changes are needed to the proposed criteria for common-cause failure to address new I&C technologies, architectures, and development methods?

- Should additional criteria be included that requires, as a minimum, two separate, diverse paths from sensor to final actuation device for all I&C safety system functions (e.g. ESF functions) whose failure to actuate, or actuate when plant conditions do not require it, would cause the plant to exceed its design limit? What are the pros and cons of such criteria?

- Should additional criteria be included that requires I&C safety systems to be only as complex as necessary; that is, to perform their functional and regulatory requirements to initiate and complete its safety function only? What are the pros and cons of such criteria?

- Should additional criteria be included to require a system-level hazard analysis to address potential I&C hazards including common-cause failure? What are the pros and cons of including such criteria?

If it is determined that keeping the defense-in-depth and diversity criteria in the proposed rule would create complications for operating reactors, then this portion of the rule could be bifurcated, as was done with the data communication independence criteria. This would allow new reactors to continue to benefit from the criteria. There are several reasons to support bifurcation of these criteria.

- The SRM to SECY-93-087 was written to address advanced reactors (i.e., new reactors – design certifications under review at that time), although the NRC has applied them to operating reactors in the past.

- New and operating reactors face different issues when it comes to defense-in-depth and diversity. For example, new reactors don't face the challenges of analog-to-digital replacements since new reactors largely utilize digital technology.

- The defense-in-depth and diversity criteria promote a better understanding of the design and its vulnerabilities. This is particularly important for new reactor designs that are first-of-a-kind and potentially have little to no operating history.

NRC FORM 757
NRC MD 10.158
(11-2014)

U. S. NUCLEAR REGULATORY COMMISSION

NON-CONCURRENCE PROCESS

NCP TRACKING NUMBER: NCP-2015-001

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

TITLE OF SUBJECT DOCUMENT	ADAMS ACCESSION NO.
Incorporation by Reference Institute of Electrical and Electronics Engineers Standards, 603-2009	ML113191306

NAME: John R. Tappert

TITLE	TELEPHONE NUMBER
Division Director	415-7192

ORGANIZATION: NRO/DE

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

First, I appreciate the non-concurring staff exercising this process as it will ensure that senior decision makers will have ready access to a variety of perspectives associated with the proposed rulemaking.

The non-concurring staff propose that the current defense-in-depth and diversity criteria be re-introduced into this proposed rule.

I believe that the current criteria could be added to the current rule as proposed by the non-concurring staff and this would have some benefits from a regulatory clarity perspective. In fact, this was the staff position in an earlier draft of the proposed rule. However, in the process of responding to another non-concurrence on this proposed rule, the document sponsor removed the defense-in-depth and diversity criteria from the proposed rule in order to allow for a more effective reexamination of the criteria in the context of a subsequent separate rulemaking. This approach has been adopted as the current staff position and, in my opinion, also represents a pragmatic and viable path forward.

I note that the current defense-in-depth and diversity criteria were provided in the Commission's Staff Requirement Memorandum to SECY-93-087 and have been used for many years. The criteria are incorporated into the Standard Review Plan Branch Technical Position 7-19, "Guidance for Evaluation of Diversity and Defense-in-Depth in Digital Computer-Based Instrumentation and Control Systems." This guidance will continue to govern licensing reviews until new regulatory criteria are developed and adopted.

I also note that in response to issues raised in other non-concurrences on this rulemaking, we have added additional questions to the rulemaking package to elicit specific stakeholder input and inform the ultimate agency decision. The staff also plans to hold one or more public workshops to help ensure robust stakeholder dialogue and engagement. In that spirit, I believe additional questions should be added to the Federal Register Notice to solicit input:

IEEE Std 603-2009, Clause 5.16, "Common-cause failure criteria," does not provide specific requirements for addressing common-cause failure, and the proposed rule does not provide requirements in this area, should the NRC provide requirements within the final rule addressing common-cause failure? Specifically, the Commission provided defense-in-depth and diversity criteria to address potential common-cause failures in the Staff Requirement Memorandum to SECY-93-087. These criteria are used by the staff in their licensing reviews in accordance with Branch Technical Position 7-19, "Guidance for Evaluation of Diversity and Defense-in-Depth in Digital Computer-Based Instrumentation and Control Systems," of NUREG-0800, "Standard Review Plan." Should these criteria be included in this rulemaking?

If the common-cause failure criteria from the SRM to SECY-93-087 are included in the rule, should these criteria only be applicable to new reactors given that (1) the Staff Requirements Memorandum to SECY-93-087 was originally written to address advance reactors (i.e., design certifications under review at that time); (2) new and operating reactors face different I&C challenges such as analog-to-digital upgrades; and (3) defense-in-depth and diversity analyses promote better understanding, particularly for new and first-of-a-kind reactor designs having little to no operating history?

SIGNATURE	DATE
JRTappert	1/28/15

NRC FORM 757
NRC MD 10.158
(11-2014)

U. S. NUCLEAR REGULATORY COMMISSION

NON-CONCURRENCE PROCESS

NCP TRACKING NUMBER: NCP-2015-001

SECTION C - TO BE COMPLETED BY NCP COORDINATOR

TITLE OF SUBJECT DOCUMENT	ADAMS ACCESSION NO.
Incorporation by Reference Institute of Electrical and Electronics Engineers Standards, 603-2009	113191306

NAME: John W. Lubinski

TITLE	TELEPHONE NUMBER
Director, Division of Engineering	415-3298

ORGANIZATION: Division of Engineering, NRR

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

The submitters of the non-concurrence request that the proposed rule language, and supporting guidance and statements of consideration, include the four defense-in-depth and diversity criteria found in the SRM to SECY-93-087. If is it determined that this would create complications for operating reactors, the submitters request that this portion of the rule be bifurcated so that these criteria specifically apply to new reactor applications.

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

See attached Word File

TYPED NAME OF NCP COORDINATOR	TITLE
John W. Lubinski	Director, Division of Engineering

ORGANIZATION: Division of Engineering, NRR

SIGNATURE--NCP COORDINATOR	DATE
	6/22/15

TYPED NAME OF NCP APPROVER	TITLE
Bill Dean	Director

ORGANIZATION: Office of Nuclear Reactor Regulation

SIGNATURE--NCP APPROVER	DATE
	6/23/15

Use ADAMS Template NRC-006 (ML063120159)

Section C NCP Tracking Number: NCP-2015-001

EVALUATION OF THE NON-CONCURRENCE AND RATIONALE FOR THE DECISION:

I appreciate the staff using the non-concurrence process to raise issues and recommendations regarding Defense-in-Depth and Diversity Criteria. Also, I appreciate the open discussions that occurred during the rulemaking development and concurrence process related to this issue. I have reviewed the information presented in the non-concurrence and decided no changes are needed to rule language. However, as recommended in Section B, I will incorporate questions related to this issue into the Federal Register Notice for this rulemaking.

As part of development of the current rulemaking, several options were considered for addressing Defense-in-Depth and Diversity Criteria, including continuing to use the existing guidance and processes, developing a separate rulemaking to address Defense-in-Depth and Diversity Criteria, and, as recommended in this non-concurrence, including Defense-in-Depth and Diversity Criteria requirements in this rulemaking.

After careful consideration, I believe continuing to use existing guidance and processes while developing a separate, high-priority rulemaking to address Defense-in-Depth and Diversity Criteria is the most effective and efficient manner for addressing Defense-in-Depth and Diversity Criteria for the following reasons:

- It will allow for a more thorough review of the existing guidance and processes, including determination of which aspects of the existing guidance and processes should be part of rule language.
- In the interim, the current process has been demonstrated to be effective at addressing Defense-in-Depth and Diversity Criteria.
- NRC will continue to following existing guidance and processes. This has and will continue to ensure adequate protection of public health and safety.

The recommendation to bifurcate the Defense-in-Depth and Diversity Criteria was not proposed during the rulemaking process and is new as part of this non-concurrence. While I believe there is sufficient justification to bifurcate certain aspects of the rule, I do not believe there is sufficient justification to bifurcate the Defense-in-Depth and Diversity Criteria. Specifically, the current processes for addressing Defense-in-Depth and Diversity Criteria have been similar for new and operating reactors and have been effective for both. I believe this issue should be considered as part of the separate rulemaking.

Given the importance of the Defense-in-Depth and Diversity Criteria, and that the recommendation to the Commission is to address a Defense-in-Depth and Diversity Criteria rulemaking as a high priority, I included slightly modified versions of the questions related to Defense-in-Depth and Diversity Criteria recommended in Section B as part of the Federal Register Notice for this rulemaking package.