

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 *Arlon Costa*
- ☒ Continued to non-concur *Donald Carlson, James Shea*
- ☐ 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.

NON-CONCURRENCE PROCESS

NCP TRACKING NUMBER

NCP-2013-015

SECTION A - TO BE COMPLETED BY NON-CONCURRING INDIVIDUAL

TITLE OF SUBJECT DOCUMENT		ADAMS ACCESSION NO.
Next Generation Nuclear Plant - Assessment of Key Licensing Issues		ML13220A176
DOCUMENT SIGNER		SIGNER PHONE NO.
Glenn M. Tracy		(301) 415-1897
TITLE	ORGANIZATION	
Office Director	Office of New Reactors (NRO)	
NAME OF NON-CONCURRING INDIVIDUAL(S)		PHONE NO.
Donald E. Carlson, James J. Shea, Arlon D. Costa		(301) 415-0109
TITLE	ORGANIZATION	
Senior Project Managers	NRO/DARR/SMRLB2	

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

REASONS FOR NON-CONCURRENCE AND PROPOSED ALTERNATIVES

REASONS FOR NON-CONCURRENCE

As further discussed below, we now believe that issuing the subject assessment package without adding some key clarifying statements would unduly undermine its credibility with future readers among the NRC staff, the Commission, and the ACRS.

PROPOSED ALTERNATIVES

Add the following opening paragraphs to "History of Pertinent NRC Staff and Commission Positions" on page 3 of Enclosure 1 (13220A208):

"DOE/INL's LBE white paper includes a discussion of NRC requirements, policies, and guidance identified as relevant to the selection and treatment of NGNP licensing basis events. That discussion appropriately identifies the limited LBE-related guidance that has been developed or proposed specifically for modular HTGRs and other non-LWR designs. However, DOE/INL's discussion also includes some less relevant and potentially confusing assertions in reference to the core damage frequency (CDF) goal that was established by the Commission in the staff requirements memorandum (SRM) dated June 26, 1990, to SECY-90-16, "Evolutionary LWR Certification Issues and their Relationships to Current Regulatory Requirements."

"As a point of clarification, the staff notes that a CDF below 10⁻⁴ per reactor-year can only be achieved if each accident that contributes to the total CDF has a frequency well below 10⁻⁴ per reactor-year. This clarification is consistent with related guidance on design basis accidents for LWRs, including the guidance on initiating event frequencies that the Commission later provided in the SRM dated July 1, 2004, to SECY-04-0037, "Issues Related to Proposed Rulemaking to Risk-Inform Requirements Related to Large Break Loss-of-Coolant Accident (LOCA) Break Size and Plans for Rulemaking on LOCA with Coincident Loss-of-Offsite Power."

"As further discussed elsewhere in this document and the staff's FQ-MST and RIPB assessment reports for NGNP, the staff acknowledges the limited applicability of such LWR-specific guidance to modular HTGRs. Accordingly, the staff's assessment of DOE/INL's approach to LBE selection for NGNP builds mainly upon the more clearly relevant NRC policy and guidance considerations noted in the paragraphs and subsections that follow."

We recognize that the final content and placement of such clarifying statements may be subject to refinement. Further discussions to that end are anticipated and welcome.

DISCUSSION AND RATIONALE
(See Section D)

☒ CONTINUED IN SECTION D

SIGNATURE

DATE
12/12/13

SEE SECTION E FOR IMPLEMENTATION GUIDANCE

NON-CONCURRENCE PROCESS

NCP TRACKING NUMBER

NCP-2013-015

T. / SUBJECT DOCUMENT

ADAMS ACCESSION NO.

ML13220A176

Next Generation Nuclear Plant - Assessment of Key Licensing Issues

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

NAME

Anna Bradford

TITLE

Branch Chief

PHONE NO

301-415-1560

ORGANIZATION

NRO/DARR/SMRLB2

COMMENTS FOR THE NCP REVIEWER TO CONSIDER

See attachment.

CONTINUED IN SECTION D

URE

Anna Bradford

DATE

5/2/14

SEE SECTION E FOR IMPLEMENTATION GUIDANCE

Section BComments for the NCP Reviewer to Consider

The non-concurring staff would like to add three paragraphs of clarifying statements to the Assessment of Key Licensing Issues document for the Next Generation Nuclear Power Plant. This document was generated in response to information submitted for review by the Department of Energy (DOE) regarding its proposed approach for a future modular high-temperature gas reactor (HTGR). The DOE's plan for the HTGR are still in a very preliminary stage, with no finalized design available for NRC review, and the discussions between NRC and DOE on licensing issues were conducted at a high level regarding what possible approaches could be taken. The document reflects the staff's view only (not the agency as a whole) and does not constitute any commitment as to how such a plant should or could be licensed by the NRC in the future.

The document as it currently stands provides an excellent and thorough discussion of the NRC's policies, positions, and feedback on the possible approaches raised by DOE regarding licensing basis event selection. The non-concurring staff would like to add clarifying statements that certain publicly-available NRC information related to light-water reactors may not be able to be appropriately applied to HTGRs. I think this has already been made clear in the document, which has undergone significant review and approval and which is essentially complete and ready to be issued. In my opinion, the document does not need to be delayed in order to be tweaked to be made even clearer when it is already clear enough.

(Note that this section of the non-concurrence form was written before the document was delayed due to other significant revisions, as discussed in Section C of this form.)

NON-CONCURRENCE PROCESS

NCP TRACKING NUMBER

NCP-2013-0155

F SUBJECT DOCUMENT

Next Generation Nuclear Plant - Assessment of Key Licensing Issues

ADAMS ACCESSION NO.

ML13220A176

SECTION C - TO BE COMPLETED BY DOCUMENT SPONSOR

NAME

Anna Bradford

TITLE

Branch Chief

PHONE NO.

301-415-1560

ORGANIZATION

NRO/DARR/SMRLB2

SUMMARY OF ISSUES

See attachment

ACTIONS TAKEN TO ADDRESS NON-CONCURRENCE

See attachment

SIGNATURE--DOCUMENT SPONSOR

Anna Bradford

TITLE

Branch Chief

ORGANIZATION

NRO/DARR/SMRLB2

DATE

5/2/14

SIGNATURE--NCP REVIEWER

Jim Holah

TITLE

Deputy Director NRO

ORGANIZATION

NRO

DATE

7/23/14

NCP OUTCOME

See cover page

Non-Concurring Individual:

CONCURS

NON-CONCURS

WITHDRAWS NON-CONCURRENCE (i.e., discontinues process)

AVAILABILITY OF NCP FORM

concurring Individual:

WANTS NCP FORM PUBLIC

WANTS NCP FORM NON-PUBLIC

CONTINUED IN SECTION D

SEE SECTION E FOR IMPLEMENTATION GUIDANCE

Section C

Summary of Issues:

- Some publicly-available NRC documents that relate to the selection of licensing basis events for light-water reactor designs may be misunderstood to also apply to modular HTGRs.
- DOE's NGNP white paper on licensing basis events refers to one of these NRC documents but not to a newer one viewed as providing more explicit guidance.
- Therefore, the staff document under consideration should be clarified to state that both of these NRC documents may not, in fact, apply to modular HTGRs, and that the staff has therefore given them little consideration in assessing DOE's proposed approach to NGNP licensing basis events.
- This clarification will ensure that: 1) the authors of the NGNP white papers are aware of the limited applicability of the NRC reference that they cite; and 2) future NRC readers have increased confidence of the credibility of this staff document.

Actions Taken to Address Non-Concurrence:

After the time that this non-concurrence was filed and as the document went through the normal concurrence process, significant changes were made to the document due to management conclusions that some of the technical issues discussed in the document were overtaken by other events occurring within the agency (e.g., activities related to recommendations from the Fukushima Task Force and the Risk Management Task Force). Therefore, major sections of the document have been revised due to matters separate from this non-concurrence. However, those revisions do not affect the section under discussion in this non-concurrence. That section is titled "History of Pertinent NRC Staff and Commission Positions" and contains mainly information about past NRC activities and documents.

As discussed in Section B (Comments for the NCP Reviewer to Consider) on this form, management in the Division of Advanced Reactors and Rulemaking decided not to add the three paragraphs suggested by the non-concurrence because management believed that the proposed text added simple clarification that was not needed and that did not warrant delaying the issuance of the document. Now that the issuance of the document has ended up being delayed due to other circumstances, the main reason for not adding the clarifying paragraphs has been overcome by events. Therefore, the document will be revised to add the first two paragraphs as proposed by the non-concurrence and the third paragraph as revised to be consistent with the other changes made to the document.

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TITLE OF SUBJECT DOCUMENT

Next Generation Nuclear Plant - Assessment of Key Licensing Issues

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SECTION D: CONTINUATION PAGE

CONTINUATION OF SECTION



A

B

C

We initially concurred on the three enclosed assessment reports in our respective capacities as lead project manager and assessment coauthors for the subject NRC pre-application interactions with the Department of Energy and Idaho National Laboratory (DOE/INL) on DOE/INL's Next Generation Nuclear Plant (NGNP) project. Since then, we have further considered the perspectives that key NRC readers will likely bring to future work in this area. We can expect such NRC readers to be very familiar with existing and proposed LWRs and associated risk-informed guidance. Many such readers may also have little or no prior knowledge of modular HTGRs. Experience suggests in particular that such readers initially tend to overestimate the applicability of LWR-centric guidance.

DOE/INL's questionable assertions in reference to the $<1\text{E-4/yr}$ CDF goal that was established by the Commission in its SRM to SECY-90-16 appear in Chapter 2 of the submitted LBE white paper (ML102630246). We did in fact highlight the questionable logic of those assertions and briefly discussed the issue with DOE/INL during our final assessment interactions. However, based on our understanding of its negligible technical relevance to modular HTGRs, we ultimately decided to ignore the point in our assessment reports. The resulting omission was our own judgment call at the time and one that we now believe was shortsighted.

New insights in this regard came to us recently while perusing NUREG/CP-0302, "Proceedings of the Workshop on Probabilistic Flood Hazard Assessment," and associated workshop materials. In his presentation at the workshop, Commissioner Apostolakis quoted from the SRM to SECY-04-0037 and concluded that: "This statement indicates that the Commission considers the frequency of 10-5 per reactor year as an appropriate lower bound for the initiating events that should be included in the design basis." On reading this, it struck us that many future NRC readers would be likely to initially view the quoted SRM to SECY-04-0037 as historically noteworthy in this policy context and also recognize its apparent conflict with DOE/INL's questionable assertions in reference to the SRM to SECY-90-16. (Note that the staff's proposal in SECY-90-16 was for a CDF goal of $<1\text{E-5/yr}$, which the Commission's SRM then rejected in favor of $<1\text{E-4/yr}$.) Our assessment summary report's failure to mention the SRM to SECY-04-0037 and clarify DOE/INL's confusing logic regarding the SRM to SECY-90-16 could thus undermine the future credibility of our NGNP assessment reports among key members of the NRC staff, the Commission, and the ACRS.

We then drafted the three additional paragraphs and discussed them with other coauthors and DARR management before proposing them for insertion in Enclosure 1. By e-mail dated 11/07/13, the lead PM's branch chief quoted the following rationale for the division director's rejection of the proposed addition: "I don't think this warrants further revision of our assessment. While the INL/DOE paper has the weaknesses Don notes, it is our assessment paper that provides the staff's perspective, not the INL/Report. I think we have done a more than adequate job of stating our case. If an applicant were to be confused by the INL/DOE report, we would no doubt remedy the situation during the pre-application and licensing review interactions. Thus, I do not support further revision to the assessment paper based on this additional information." We note that our rationale differs in that it targets NRC readers.

We have come to the shared view that neither SRM-SECY-90-16 nor SRM-SECY-04-0037 provides guidance that is directly relevant to modular HTGRs. This view is based on our current understanding of the defining safety features of the modular HTGR design concept, a concept exemplified by the conceptual designs considered for NGNP and also by the MHTGR preliminary design that the NRC staff reviewed in the late 1980s and early 1990s and evaluated in NUREG-1338. In particular, we note that prospective applicants have conveyed their intent to show that their proposed modular HTGR designs can preclude extensive core damage of the kind that occurs rapidly in all LWR accidents that uncover the core more than briefly. Even in extreme bounding accidents far beyond the design basis, future applicants intend to show that any resulting core degradation in modular HTGRs would be very limited and incremental and evolve very slowly in relation to the extensive and rapid core damage that can occur in today's LWRs in accidents only moderately beyond the design basis.

The limited relevance of such LWR-centric guidance to modular HTGRs notwithstanding, we now believe that the fact that DOE/INL's LBE white paper refers to SRM-SECY-90-016 and does so in a potentially misleading manner necessitates that we include clarifying references to both SRMs in our assessment summary report of Enclosure 1. By addressing this need, the added clarifying comments will significantly enhance the credibility of our NGNP assessment reports with future NRC readers.

SEE SECTION E FOR IMPLEMENTATION GUIDANCE

NON-CONCURRENCE PROCESS**SECTION E - Implementation Guidance****Part 1 - Initiation of Non-Concurrence**

Individual non-concurs on subject document and completes Section A, including identifying name and ADAMS accession number of document being non-concurred on, name of the subject document signer, and reasons for non-concurrence and proposed alternatives.

If more than one individual non-concurs, Section A should reflect the additional names and signatures.

Individual must request NCP tracking number prior to submitting NCP Form by emailing NCPPM.Resource@nrc.gov or calling (301) 415-2741.

Individual sends NCP Form to immediate supervisor, document signer, NCP PM, and OCWE Champion. (See Contacts on OCWE Web site.)

Part 2 - Staff Review of Non-Concurrence

Document Signer identifies Document Sponsor and forwards NCP Form to Document Sponsor to coordinate staff review. Document Signer may choose to act as Document Sponsor.

Individual's immediate supervisor completes Section B, including views of issues and proposed alternatives and any other information for management consideration and forwards to Document Sponsor.

Document Sponsor documents Summary of Issues (SOI) and emails to individual for comment and consensus. SOI ensures a common understanding of issues and should be agreed upon before NCP Form is evaluated by staff.

Document Sponsor serves to coordinate and document staff's review of the non-concurrence. Non-concurring individual should be included in discussions, when warranted, to maximize understanding and improve decision-making.

Document Sponsor completes Section C to reflect staff's review of issues and actions (if applicable), that were taken to address concerns. Documentation should be complete, on-point, factual, and focused on issues (not individuals).

Document Sponsor puts completed NCP Form in document package and returns package to concurrence.

Document Sponsor updates Section C, as necessary, to reflect any additional changes made during process to address issues.

Part 3 - Management Review of Non-Concurrence

Document Signer reviews NCP Form, may discuss with interested parties (including non-concurring individual), and may return NCP Form and subject document for additional action, prior to signing Section C as the NCP Reviewer and prior to issuance of subject document.

If Document Signer is Document Sponsor, NCP Reviewer is next level manager. Document Signer continues to sign subject document and NCP Reviewer is added to subject document concurrence.

If Document Signer is not SES manager, NCP Reviewer is first SES manager in organizational chain. Document Signer continues to sign subject document and NCP Reviewer is added to subject document concurrence.

Part 4 - NCP Outcome and Record-Keeping

Document Sponsor records outcome of NCP when process is complete (i.e., when subject document is issued) in Section C.

Document Sponsor gets input from non-concurring individual on interest of availability of NCP Form.

If individual wants NCP Form public, Document Sponsor assists in releasability review in accordance with the NRC Policy For Handling, Marking, and Protecting Sensitive Unclassified Non-Safeguards Information (SUNSI) and MD 3.4, "Release of Information to the Public."

NCP Form should be profiled in ADAMS using ADAMS Template NRC-006.

Document Sponsor will email NCP PM and OCWE Champion when process is complete.

NCP PM will post NCP Form and issued subject document on internal Web site and OCWE Champion will highlight to staff, as warranted.