

RulemakingComments Resource

From: Newell, Brian
Sent: Wednesday, March 20, 2013 4:06 PM
To: RulemakingComments Resource
Subject: FW: Docket ID NRC-2012-031; 10 CFR Part 50 and 52, Onsite Emergency Response Capabilities; Draft Regulatory Basis (78 Fed. Reg. 1154)
Attachments: 03-19-13_NRC_10 CFR Parts 50 and 52, Docket ID NRC-2012-031.pdf; 03-19-13_NRC_10 CFR Parts 50 and 52, Docket ID NRC-2012-031_Attachment 1.pdf; 03-19-13_NRC_10 CFR Parts 50 and 52, Docket ID NRC-2012-031_Attachment 2.pdf

From: PIETRANGELO, Tony [<mailto:arp@nei.org>]
Sent: Tuesday, March 19, 2013 5:59 PM
Subject: Docket ID NRC-2012-031; 10 CFR Part 50 and 52, Onsite Emergency Response Capabilities; Draft Regulatory Basis (78 Fed. Reg. 1154)

The attachment contains complete contents of the letter.

March 19, 2013

**DOCKETED
USNRC**

March 20, 2013 (12:00 p.m.)

Ms. Annette L. Vietti-Cook
Secretary
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
ATTN: Rulemakings and Adjudications Staff

OFFICE OF THE SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

Subject: Docket ID NRC-2012-031; 10 CFR Part 50 and 52, Onsite Emergency Response Capabilities; Draft Regulatory Basis (*78 Fed. Reg. 1154*)

Project Number: 689

Dear Ms. Vietti-Cook:

On behalf of the nuclear energy industry, the Nuclear Energy Institute (NEI) submits comments on the draft regulatory basis, "Onsite Emergency Response Capabilities: Regulatory Basis to address Nuclear Regulatory Commission Near-Term Task Force Recommendation 8" published in the *Federal Register* on January 8, 2013. The draft regulatory basis recommends development of a proposed rule that would require integrated accident mitigation procedures and associated severe accident exercises; identify requirements for severe accident command and control; and amend current training requirements applicable to plant personnel. NEI previously commented on an April 2012 Advance Notice of Proposed Rulemaking (ANPR) on this topic (*77 Fed. Reg. 23161*). We appreciate the opportunity to provide comments on the draft regulatory basis and look forward to continued dialogue with the NRC on this important issue.

Anthony R. Pietrangelo
Senior Vice President and Chief Nuclear Officer

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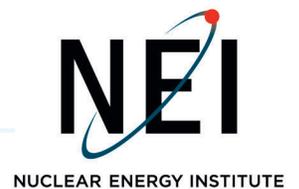
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U.S. Nuclear Regulatory Commission
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As articulated in our ANPR comments, any new requirements developed in response to Recommendation 8 must be carefully coordinated with other post-Fukushima regulatory actions. For example, proposed revisions to the Station Blackout Rule (10 CFR 50.63); development and implementation of FLEX support guidelines

¹ The Nuclear Energy Institute (NEI) is the organization responsible for establishing unified industry policy on matters affecting the nuclear energy industry, including the regulatory aspects of generic operational and technical issues. NEI's members include all entities licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect/engineering firms, fuel cycle facilities, nuclear materials licensees, and other organizations and entities involved in the nuclear energy industry.

² Letter from A. Pietrangelo (NEI) to A.L. Vietti-Cook (NRC), "Docket ID NRC-2012-031; 10 CFR Part 50 and 52, Onsite Emergency Response Capabilities; Advance Notice of Proposed Rulemaking (*77 Fed. Reg. 23161*)," June 18, 2012 (ANPR Comments).

(FSGs); proposed revisions to emergency preparedness drills and training promulgated by NTTB Recommendation 9.3 actions; and the ongoing consideration of containment performance during severe accidents (e.g., filtered vents), could substantially influence the outcome of any rulemaking designed to address Recommendation 8. Further, industry (in conjunction with the Institute of Nuclear Power Operations) is currently developing enhanced training programs in the area of severe accident management. This activity could also inform or influence the outcome of the rulemaking contemplated in the draft regulatory basis.

NEI does not necessarily oppose development of a reasonable, performance-based rule to address Recommendation 8; however, we do not believe that the NRC should proceed with a Recommendation 8 rulemaking at this time. While we recognize that the integration of onsite emergency planning activities for severe accidents can be improved, the nuclear industry has decades of experience in developing and implementing successful programs governing onsite emergency response capabilities. Further, the U.S. nuclear power fleet has established substantial severe accident mitigation capability and this capability is currently integrated into the overall emergency response structure in a manner that provides adequate protection of public health and safety. Thus, although improvements are possible, there is no pressing health and safety concern that requires the NRC to undertake this rulemaking now – without the benefit of the information that will be yielded through implementation of the other, higher-priority post-Fukushima activities that are currently underway.

For example, deferral of this rulemaking would in no way slow industry efforts to develop and implement improvements to the Severe Accident Mitigation Guidelines (SAMGs). In turn, the lessons learned from development and implementation of these improvements would inform any rulemaking designed to address Recommendation 8. Deferral of this rulemaking will result not only in a more well-informed, effective rule, but will also prevent the diversion of resources from higher priority post-Fukushima activities. Simply put, deferral of the Recommendation 8 rulemaking will result in a better final rule, while reducing the cumulative effects of the post-Fukushima activities.

Although we believe that the Recommendation 8 rulemaking effort should be deferred, we offer the following specific comments on the draft regulatory basis.

Scope of NRC's Preferred Option 1

NRC's preferred Option 1: "New Accident Mitigating Procedures Rulemaking with Amendments to Training and Exercise Requirements" follows the general concept of high level rule language with accompanying guidance development, which is appropriate. But the scope of the rulemaking envisioned, particularly regarding operator training requirements, simulator modeling of severe accident scenarios, and extensive expectations for qualifications for emergency response personnel, is not warranted and could add significantly to burden while diluting operator training needed to address more likely and risk-significant scenarios.

With respect to backfitting, the draft regulatory basis states:

A final rule under Options 1, 2 or 4, if applied to existing holders of nuclear power reactor operating licenses under Part 50, would likely constitute backfitting as defined in 10 CFR 50.109(a)(1). None of these options would appear to satisfy any of the exceptions from the requirement to conduct a backfit analysis. Therefore, the staff would need to perform a backfit analysis to determine whether the applicable option would result in a substantial increase in the overall protection of the public health and safety or the common defense and security and that the costs of implementing that option would be justified in view of this increased protection.

We agree that a cost-justified, substantial increase analysis would be required by the agency's backfit rule. In our view, the scope of Option 1 (to include operator training and requalification requirements, simulator fidelity, etc.) will add to the regulatory burden without providing measurable safety benefit. This, in turn, will make it more difficult for a rule resembling Option 1 to pass muster under a meaningful backfit analysis. The cost information provided in Attachment 1 to NEI's ANPR comments would need to be revised to reflect the scope of Option 1 and accurately communicate resultant cost increase. Attachment 1 to this letter provides some updated cost information on implementation of Option 1; however, these are preliminary estimates and will likely need to be refined once a more detailed proposed rule is developed.

Integration of Procedures and Guidelines Used to Respond to Beyond Design-Basis Events

- a. The draft regulatory basis states that there is a "lack of comprehensive strategy to address events as they progress beyond design basis assumptions." We believe that US plants have developed comprehensive strategies in this regard and are well prepared to respond to a severe accident. Attachment 4 to NEI's ANPR comments depicted a progression typical of the existing operating procedure hierarchy. As an event progresses to beyond design-basis, the Emergency Operating Procedures (EOPs) will direct the operator to guidelines such as the FLEX Support Guidelines (FSGs) for additional strategies to address the beyond design-basis nature of the event for the purposes of maintaining or restoring key safety functions of core cooling, containment function and spent fuel pool cooling. If the event progresses such that core damage cannot be prevented (i.e., the event becomes a severe accident), the EOPs will direct the operator to SAMGs. If the event begins as a large area fire or explosion, the Extensive Damage Mitigation Guidelines (EDMG) would provide guidance for the response and comprise actions and equipment very similar to the strategies in the FSGs.

As noted in Attachment 1 to NEI's ANPR comments, the SAMG changes in progress will incorporate the FLEX and EDMG equipment to further integrate the response capabilities.

- b. The proposed wording for 10 CFR 50.54(ii) should refer to "an integrated strategy for beyond design-basis event response" as opposed to severe accident mitigation. Severe accident mitigation refers to a core damage scenario and is just one part of the beyond design-basis capabilities.

- c. The terms "procedures" and "guidance" need to be carefully differentiated. Responding to severe accidents requires the exercise of professional judgment and expertise, which is aided by appropriate guidance and the availability of necessary equipment. Severe accident response cannot be mechanistically prescribed in detailed procedures. The transition from emergency operating "procedures" to FLEX support and severe accident "guidance" is deliberate and necessary to preserve the capability to address accident scenarios with necessary flexibility to deal with uncertainties in accident progression. The regulatory approach, training expectations, and other aspects potentially subject to regulation need to recognize this distinction.

Command and Control during Beyond Design-Basis Events

- a. The NRC states in the draft regulatory basis that "there are no current regulatory requirements for command and control structure" to respond to beyond design-basis events. As noted in NEI's ANPR comments, licensees already have in place emergency response command and control structures that reflect the emergency preparedness planning standards of 10 CFR 50.47(b), the requirements of 10 CFR 50, Appendix E, and related guidance (e.g., NUREG-0654). These structures also incorporate the decision-making capabilities necessary to implement SAMGs as recommended by the appropriate Owners Group. Separate, event-based command and control structures would unnecessarily complicate response efforts, and potentially introduce confusion among licensee and offsite authority responders. Any potential improvements in this area should be considered within the context of existing command and control structures. Furthermore, in Attachment 3 of the same letter there is a description of a longstanding command and control structure for the SAMGs. There has been extensive experience in the industry with the existing command and control structures developed in response to the aforementioned requirements and guidance and major changes would have a significant impact on the sites.
- b. Each licensee currently has a command and control structure in place to support implementation of EDMGs. This structure was developed in accordance with NEI 06-12, Section 3.2, and is designed to interface with the site ERO. In addition, a command and control structure for implementation strategies developed in response to NTTF 4.2 will be in place in accordance with the requirements of NRC Order EA-12-049 and related guidance documents.

Training and Qualification Requirements

- a. The industry has a training program that addresses responses to beyond design-basis events. Before significant changes are proposed to the structure and content of these programs, a thorough gap analysis should be performed to identify essential changes. Adding a significant capability to address an extended loss of AC power through the mitigating strategies Order further reduces the likelihood of a core damaging event. Therefore, any proposed changes to SAMG training requirements needs to take this into account.

- b. The operator training and qualification expectations need to be carefully considered and balanced with respect to the very remote likelihood of a beyond design-basis event versus the potential dilution of operator focus from more risk significant plant transients and accidents. In particular, licensed operator training should primarily remain focused on responding to design-basis events. This core training provides the operators with the fundamental knowledge that is used to implement strategies for post core damage response. The implementation of SAMGs and EDMGs are appropriately considered job tasks of licensed and non-licensed operators and, as such, are trained in a manner consistent with the difficulty, importance and frequency determined from a systematic approach to this training. FSGs will be similarly evaluated prior to implementation.

In addition, the draft regulatory basis proposes changes to the knowledge and abilities (K/A) catalog for licensed operators. The K/A catalog currently addresses integration of EOPs with other guidelines in an appropriate manner in K/A 2.4.16: "Knowledge of EOP implementation hierarchy and coordination with other support procedures or guidelines such as, operating procedures, abnormal operating procedures, and severe accident management guidelines."

Therefore, industry does not recommend changing 10 CFR 55.41, 55.43 and 55.45 as suggested since it is already a component of existing operator initial and continuing training programs.

- c. The NRC expectation for plant simulators to model use of FLEX and severe accident scenarios is not warranted. Neither 10 CFR 55.46 nor ANSI-3.5-2009 as endorsed by RG-1.149, Rev. 4, requires severe accident modeling in plant referenced control room simulators. Current estimates to add full severe accident modeling capability range from \$1M to \$1.5M per simulator depending on the existing simulator's modeling. As stated in Attachment 3 to NEI's ANPR comments, simulation tools are sufficient to provide inputs for a table-top drill.
- d. The NRC has proposed adding Technical Support Center personnel responsible for implementation of severe accident mitigation strategies to 10 CFR 50.120. This action would result in an additional accredited training program. The individuals who fill these positions typically come from either operations or engineering which have their own accredited training programs. Before proposing a new accredited program, the gap analysis suggested above should address any additional training requirements needed in this area.

Drills and Exercises

NTTF Report Recommendation 9.3 contains the following element.

"Conduct periodic training and exercises for multiunit and prolonged SBO scenarios. Practice (simulate) the identification and acquisition of offsite resources, to the extent possible."

The NRC staff and industry are currently engaged in discussions concerning resolution of this recommendation element. As stated in NEI Letter, *Tier 2 Recommended Emergency Preparedness Enhancements from the NRC Fukushima Near-Term Task Force Report*, dated November 6, 2012:

“Pursuant to our discussions in recent public meetings, this letter is to confirm NEI’s support for the NRC staff’s proposed approach of addressing the Tier 2 Emergency Preparedness enhancements identified in the Fukushima Near-Term Task Force Report (as described in Recommendation 9.3) through integration with actions underway to respond to NRC Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events.”

The industry believes that any new rule associated with drills and exercises for beyond design-basis events should reflect the approach that will be utilized to address the Mitigating Strategies Order and Recommendation 9.3. Given the anticipated schedule for the development of the guidance necessary to address the staff approach referenced above, we believe it is premature to begin work on drill/exercise-related rule language, relative to Recommendation 8, at this time.

Should the proposed new requirement for “. . . drills or exercises that provide the opportunity for the licensee to demonstrate proficiency in the key skills necessary to respond to a severe accident scenario . . .” [*Section to be determined*] go forward, then the related requirement contained in 10 CFR 50, Appendix E, IV.F.2.j concerning 10 CFR 50.54(hh)(2) is redundant and should be deleted. In addition, as noted in our previous comment letter concerning the Advance Notice of Proposed Rulemaking, any new drill and exercise requirements associated with beyond design-basis events should not be located in 10 CFR 50, Appendix E.

EDMGs

With respect to the various discussions of EDMGs contained in the draft regulatory basis, we believe that several points should be revised and clarified based on the comments below.

- EDMG strategies were developed to address large-area explosions and fires, caused by certain beyond design-basis attack threats, which result in a loss of the Control Room and remote safe shutdown locations. Licensees have commitments and related licensing basis document descriptions that govern EDMG entry criteria and the prevailing conditions under which EDMGs would be implemented. The occurrence of a beyond design-basis external event (such as the tsunami that struck the Fukushima site) would not meet EDMG entry criteria; therefore, to the extent that EDMG strategies were implemented in response to this type of an event, it would be accomplished on an ad hoc basis.
- Implementation of EDMGs would not be required in response to a station blackout unless the blackout was caused by a threat-related event which also resulted in a loss of the Control Room and remote safe shutdown locations. A response to a station blackout (without a threat related event) would be performed in accordance with EOPs and, if prolonged, the new FLEX Support Guidelines (being developed to address

NRC Order EA-12-049) would also be used. Should the strategies contained in these documents prove unsuccessful, additional strategies contained in SAMGs would be implemented. SAMGs are designed to support implementation of accident mitigation strategies without reference to EDMGs. In fact, some licensees reference implementation of SAMG strategies within their EDMGs. The equipment utilized to implement strategies for responding to a beyond design-basis event (e.g., a portable pump) may be referenced in one or more of the governing guideline sets - FLEX Support Guidelines, SAMGs or EDMGs.

To summarize the above, the response to a beyond design-basis external event would be performed in accordance with EOPs, FLEX Support Guidelines and SAMGs. The industry believes that the focus of EDMGs should remain on the governing of a response to a large-area explosion and fire caused by a beyond design-basis attack threat.

Guidance Development

The development of staff and industry guidance for the conduct of emergency response drills and exercises for beyond design-basis external events should include consideration of the following topics.

- The enhanced safety capabilities and margins of advanced and passive reactor designs (e.g., EPR, AP1000, etc.)
- Maintaining realistic/credible scenarios for use in drills and exercises consistent with the expected use of mitigation strategies and equipment
- Potential dilution of organizational focus on practicing responses to more likely events such as those within the plant design and EOP bases
- Recognition of additional demands on licensee (e.g., Work Hour/Fatigue Rule limitations), NRC staff and Offsite Response Organizations resources
- Using different venues, such as tabletop drills and out-of-sequence field demonstrations, to practice and evaluate some aspects of responses to beyond design-basis external events
- Allowances for using non-simulator sources of data in beyond design-basis event response drills

If the current schedule for the rulemaking is followed, draft industry guidance would need to be provided to NRC by the end of 2013. As noted, we believe the overall rulemaking schedule, including guidance development, would benefit from more time to integrate with associated post-Fukushima activities. It is more effective to develop guidance in parallel with the development of final rule language. NRC has provided timely communication of preliminary rule language in the draft regulatory basis, and it will be important to continue stakeholder engagement throughout the rulemaking process. We also support NRC's plan to largely rely on a performance-based approach with regard to inspection and enforcement of the proposed or revised rules.

Ms. Annette L. Vietti-Cook

March 19, 2013

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Specific Comments on Proposed Rule Text

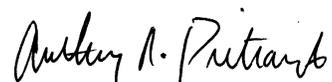
NRC is proposing rulemaking to the following regulations:

1. 10 CFR 50.54, Conditions of licenses
2. 10 CFR 50.120, Training and qualification of nuclear power plant personnel
3. 10 CFR 55.41, Written examination: Operators
4. 10 CFR 55.43, Written examination: Senior operators
5. 10 CFR 55.45, Operating Tests
6. 10 CFR 50.TBD, Drill and exercise requirements

As noted, we do not believe changes to 10 CFR 55 or 10 CFR 50.120 are necessary. Appendix C of the draft regulatory basis provides NRC's preliminary proposed rule language, and Attachment 2 provides our comments on the draft rule language.

In summary, industry will support the rulemaking, but requests consideration of a temporary deferral to allow additional time to integrate this regulatory activity with other ongoing efforts, and to concentrate our resources on timely implementation of tangible safety improvements at the plants. We will commence corresponding industry guidance development, but we reiterate our concerns with respect to scope and impact of the rule exceeding that necessary to ensure safety and proper implementation of onsite emergency procedures and guidance for severe accidents. If you have any questions regarding these comments, please contact me or Sue Perkins-Grew (202.739.8016; spg@nei.org).

Sincerely,



Anthony R. Pietrangelo

Attachments

c: Mr. Jack McHale, NRR/DIRS/IOLB, NRC
Mr. Robert Beall, NRR/DPR/PRB, NRC
Mr. Timothy A. Reed, NRR/DPR/PRB, NRC
NRC Document Control Desk

Updated Cost Information

These implementation costs were not addressed in NEI's response to the ANPR, but would be reflected should NRC pursue the approach discussed in the draft regulatory analysis.

1. Operator training and qualification

As noted in Attachment 3 of the June 18, 2012 letter the cost for the training on the currently in-process improvements to the SAMGs is expected to be \$17M total, or \$275k per unit. Assuming changes being proposed in the draft rule and regulatory analysis are implemented, the cost of changes to the initial and continuing training programs is expected to increase approximately \$250k for each site per year beyond our previous estimate.

2. Simulator modeling of beyond design basis (FLEX, SAMG)

Cost to modify simulators to add severe accident capability would vary, but an approximate value is on the order of \$1.5M per simulator. There are 67 simulators (including Vogtle and Summer new build). The estimated industry-wide cost would be approximately \$100M.

3. Drills and Exercises

Costs would be on the order of \$250,000 per site per exercise over current exercise costs. Assuming 8 year intervals, industry-wide cost would be approximately \$2M per year.

Proposed Rule Language

10 CFR 50.54 Conditions of licenses

(ii)

(1) Each licensee shall develop an integrated strategy for beyond design basis ~~severe~~ accident mitigation that consists of the following sets of procedures and guidance documents:

(i) Emergency Operating Procedures (EOPs)

(ii) Severe Accident Management Guidelines (SAMGs)

(iii) Guidance developed to meet requirements of § 50.54(hh)(2).

(iv) FLEX support guidelines (FSGs) ~~Additional guidelines developed to support EOPs and SAMGs.~~

(v) Emergency procedures for operation in modes not covered by EOPs.

(vi) Guidance for responding to spent fuel pool emergencies.

(2) Each licensee shall develop and define a command and control strategy for beyond design basis events, including ~~severe~~ accidents and, including multiple unit accidents, that establishes the necessary organizational structure for implementation of the strategies developed in accordance with 10 CFR 50.54(ii)(1). This command and control strategy must identify qualification requirements for a position with ultimate decisionmaking authority during implementation of SAMGs, EDMGs, and supporting guidelines.

* * * * *

~~**10 CFR 50.120 Training and qualification of nuclear power plant personnel**~~

~~* * * * *~~

~~**(b) Requirements**~~

~~* * * * *~~

~~(2)(x) Technical Support Center personnel responsible for implementation of severe accident mitigation strategies developed in accordance with § 50.54(ii)(1).~~

10 CFR 50 – Domestic Licensing of Production and Utilization Facilities

* * * * *

[Section to be determined]

* * * * *

At a periodicity not to exceed eight years, each nuclear power reactor licensee shall conduct drills or exercises that provide the opportunity for the licensee to demonstrate proficiency in the key skills necessary to respond to a severe accident scenario. Each nuclear power plant licensee shall demonstrate its implementation of strategies, procedures and guidance developed under § 50.54(ii)(1). These licensees shall use drills or exercises to test the adequacy of emergency equipment, communication networks, and command and control organizations and ensure that onsite emergency response personnel are familiar with their duties.

* * * * *

~~10 CFR 55.41 Written examination: Operators~~

~~*****~~

~~(b)(10) Administrative, normal, abnormal, emergency and severe accident procedures for the facility.~~

~~*****~~

~~10 CFR 55.43 Written examination: Senior operators~~

~~*****~~

~~(b)(5) Assessment of facility conditions and selection of appropriate procedures during normal, abnormal, emergency and severe accident situations.~~

~~*****~~

~~10 CFR 55.45 Operating Tests~~

~~*****~~

~~(a)(6) Perform control manipulations required to obtain desired operating results during normal, abnormal, emergency and severe accident situations.~~

~~*****~~