

BACKGROUND INFORMATION IN SUPPORT  
OF STAFF RECOMMENDATIONS

The following additional information is provided for the Commission's consideration. The staff proposes action in the following areas to enhance emergency preparedness efforts for security-based events:

1. Enhanced Security-Based Emergency Action Levels (EALs)

The staff is working with the Nuclear Energy Institute (NEI) to develop guidance that will provide an enhanced security-based EAL scheme. Consistent with the Commission direction in the staff requirements memorandum (SRM) dated September 10, 2004, "Staff Requirements - Discussion of Security Issues (Closed-EX.1), 9:30 A.M., Wednesday, August 18, 2004, Executive Conference Room, One White Flint North, Rockville, Maryland," the staff is developing guidance that will provide an enhanced security event EAL scheme. The rationale for this classification guidance will be compatible with the current radiological event-focused scheme, with due consideration of the immediate impact of security events on plant personnel safety. This classification scheme will include notification of unusual event (NOUE), alert (A), site area emergency (SAE), and general emergency (GE). The additions to the licensee's EAL scheme are expected to be adopted using the emergency plan change process and do not require prior NRC approval. The staff intends to provide this guidance to licensees in a safeguards advisory for voluntary adoption. Following the implementation period, the staff intends to inform the Commission of the status of licensee adoption of this enhancement.

A recent rule change to Appendix E, Section IV.B, "Assessment Actions," to 10 CFR Part 50 has removed the requirement that changes to the EAL scheme be discussed and agreed on with State and local governmental authorities. The rule retains the requirement that licensees review their EALs on an annual basis with State and local authorities. This change eliminates a perceived regulatory burden on licensees for implementation of this type of change. The staff has taken active steps to minimize the burden of these changes through communicating intent and providing for an agreeable period of implementation.

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Exemption Number 2  
Nuclear Regulatory Commission review required before public release.

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Name and organization of person making determination.

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2. Enhanced Onsite Protective Actions

Due to the immediate threat to life from terrorist activities, guidance is being provided to licensees either to implement onsite protective actions (site assembly/accountability, evacuation, etc.) at lower classification levels (i.e., notification of unusual event or alert), or to defer certain actions in lieu of more effective measures, such as seeking cover. While certain protective actions such as site evacuation of non-emergency response personnel may be appropriate, they must be carried out with consideration of the risk to site personnel. The staff expects licensees to consider constraints to rapid dispersal of site personnel, such as locked gates and radiation monitoring requirements, that limit protective actions. Licensees should consider pre-planned strategies regarding accountability and evacuation to aid decision-makers during outage periods, normal workdays, back shifts, etc. The staff intends to provide this guidance to licensees in a safeguards advisory for voluntary adoption. Following the implementation period, the staff intends to inform the Commission of the status of licensee adoption of this enhancement. If the Commission approves the voluntary adoption of this enhancement it will be further evaluated for rulemaking changes.

3. Abbreviated Notification to the NRC

Notification to the NRC is a significant concern during a security event. The current set of NRC regulations require notification to the NRC for safeguards events under 10 CFR 73.71. The regulation states in part, “ Each licensee subject to the provisions of §§§§ 73.20, 73.37, 73.50, 73.51, 73.55, 73.60, or 73.67 shall notify the NRC Operations Center within 1 hour of discovery of the safeguards events described in paragraph I(a)(1) of appendix G to this part....” Additionally, safeguards events that warrant declaration under the site’s emergency plan would be reported to the NRC as required by 10 CFR 50.72. The current regulation, 10 CFR 50.72(a)(3) states, “The licensee shall notify the NRC immediately after notification of the appropriate State or local agencies and not later than one hour after the time the licensee declares one of the Emergency Classes.” It is important to note that in either case of reporting safeguards events to the NRC, the notification could be delayed up to an hour from discovery or an hour from classification. The staff views this delay as inappropriate in the post-9/11 environment where the potential for coordinated attacks on multiple facilities is a realistic possibility.

Recent interactions with licensees during force-on-force (FOF) activities have shown licensees are clearly aware of the requirements to notify NRC and have indicated that some consider the 1 hour leeway appropriate even under security event scenarios. Specifically, for safeguards events that rise to the level of an imminent threat to the facility, the staff seeks to have licensees notify the NRC on an exigent or expedited basis following notification of the appropriate local law enforcement agencies. This is intended to mean that after or concurrent with the notification to local law enforcement authorities in accordance with 10 CFR 73.55, by the licensees security organization, the NRC Operations Center is the next and immediate notification and should be done from the control room, if possible, using the emergency notification system (ENS). The notification will be abbreviated or brief due to the need for expediency by both the NRC and licensee staff during a response to a security event. The

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information needed by NRC during the initial notification will be identified through discussions with stakeholders. This notification under situations of duress is appropriate to satisfy the requirement for reporting under 10 CFR 73.71. The evaluation of the event for possible emergency classification purposes should proceed subsequent to or in parallel with the Part 73.71 exigent notification action.

The staff view is this approach implements the notification change in a manner that ensures vital security information is conveyed from the licensee's security staff to the control room and that the notification of the NRC not interfere either with the notification of local law enforcement or with the operational safety of the reactor during this time of extreme stress. A likely outcome is the implementation of the site emergency plan which will proceed with the appropriate level of concern. It is the staff view that the declaration of the emergency class and the subsequent notifications will proceed in a timely manner and in accordance with the existing site process established to meet 10 CFR 50.72 reporting requirements.

This notification initiates the alerting mechanism for other nuclear facilities in recognition that the facility under attack may be part of a larger coordinated effort. This notification is a protective measure to initiate Federal response to the affected facility and place other facilities that may be targeted on heightened awareness. In this instance, NRC notification may initiate the Federal response to an "Incident of National Significance" under the National Response Plan (NRP).

The staff intends to provide this guidance to licensees in a safeguards advisory for voluntary adoption. Following the implementation period, the staff intends to inform the Commission of the status of licensee adoption of this enhancement. Consistent with the direction provided by the Commission in SRM M041118, "Discussion of Security Issues, 1:30 P.M. Thursday, November 18, 2004 Executive Conference Room, One White Flint North, Rockville, Maryland (Closed to Public Attendance)," dated December 14, 2004 the staff is considering rulemaking changes for this issue and will pursue that effort in the longer term.

#### 4. Security-Based EP Drill and Exercise Program

In SECY-03-165, the staff advised the Commission of its plan to implement a drill and exercise effort that would require each licensee to conduct site-specific terrorist-based drills and exercises to improve emergency response organization skills. The program endorsed by the staff would have each site conduct a federally observed terrorist-based drill or exercise. This drill effort differs from the EP response during the FOF exercises in that the focus of the FOF is approximately 95% security, and 5% EP/operations/security integrated response. The EP security-based drills will focus 95% on EP/operations mitigative actions and strategies, with about 5% security perspective. Following the demonstration of a security-based drill or exercise at a site, it is expected that licensees will include security event based scenarios in their normal drill and exercise program. The response to security events is considered a principal EP functional area and is expected to be part of the licensee's routine EP drill and exercise program, tested at least every six years, as is done for other principal functional areas.

The staff encourages a voluntary program, conducted in a phased manner, to develop initial key lessons and establish a basic framework with industry. A pilot drill program will be initiated

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and is expected to include 6 drills conducted over a 9 month period. The pilot sites will be selected to test different technologies and scenarios. Following the pilot, the staff will assess the effort and report the results to the Commission with appropriate recommendations on the conduct of future drills and exercises. It is expected that the lesson's learned will be provided to industry for dissemination, as a means to further enhance their integrated response.

After lessons learned from the pilot program are assimilated, the staff intends to implement NRC oversight through the observation of a security scenario based exercise (or drill) at each site. The implementation of this oversight is pending the success of the pilot, a resource analysis, a schedule analysis, and the Commission's approval.

The staff view with respect to requiring each site to demonstrate their response to security events in an evaluated exercise or drill will be provided to the Commission following the pilot program. Additionally, the pilot program will serve to inform the need to expand the scenario response to include offsite response organizations (ORO's) and/or mitigative strategy demonstrations. The staff believes that this level of demonstration should be observed by the agency periodically.

The regulations and the guidance for EP do not provide requirements for specific scenario content of drills and exercises. While the staff has previously reviewed licensee scenarios to ensure appropriateness to meet specified objectives, conducting such reviews is not a current practice and the reviews did not define event initiators. Under existing regulations, licensees have effectively demonstrated principal functional areas of their emergency response plans without using the security based scenarios envisioned under this proposal. Following the pilot program the staff will offer a recommendation to the Commission on whether rulemaking is needed in this area.

There is a distinction between a drill and an exercise consistent with the guidance provided in NUREG-0654 / FEMA -REP 1, Section N, "Exercises and Drills," Items 1 and 2. Specifically, the guidance states that an exercise is an event that tests integrated capability and a major portion of the basic elements within emergency preparedness plans and organizations. The exercise simulates an emergency that results in offsite radiological releases which would require response by offsite authorities. The guidance establishes the need to have a release which ensures that the offsite agencies have the opportunity to demonstrate their activities, usually during the Federal Emergency Management Agency (FEMA) graded biennial exercise. In the biennial exercise instances where a release does not occur or at least the threat of a release is not present, the offsite authorities lack a demonstration opportunity that can affect the graded exercise result. This in turn can affect the FEMA finding of "reasonable assurance" for the exercise.

The guidance indicates that a drill is a supervised instruction period aimed at testing, developing and maintaining skills in a particular operation. A drill is often a component of an exercise. Drills are commonly used as training opportunities to develop new skills, while exercises are a demonstration of abilities. Existing regulations (Appendix E to 10 CFR 50, F.2.g, "Training") requires that "all training, including exercises, shall provide for formal critiques in order to identify weak or deficient areas that need correction. Any weaknesses or deficiencies that are identified shall be corrected." This is currently the regulation used to

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assess EP exercises under the existing reactor oversight process (ROP). Application of this regulation is appropriate to security based drills as a means of oversight. It is the staff view that the goal for the drill program is the development of skills and improvement of response capabilities. The biennial exercise is required by the regulations in 10 CFR 50, Appendix E. In the same section of the regulations licensees are directed to maintain emergency response skills by conducting drills in the interval between biennial exercises. The regulations indicate licensees would have the opportunity to consider accident management strategies, allow for supervised instruction, operating staff would have the opportunity to resolve problems (success paths) rather than have controllers intervene, and the drills could focus on onsite training objectives. The staff believes drills offer the best opportunity for licensees to develop the necessary skills. However, the staff recognizes that licensees will also gain valuable insights and learning through periodic exercises.

The staff intends to provide this guidance to licensees in a safeguards advisory for voluntary adoption. The staff intends to inform the Commission of the actions taken by licensees in this area and provide recommendations on the need for rulemaking following the pilot program.

5. Review of EP Planning Standard Guidance

The emergency planning standards codified in 10 CFR 50.47(b) were adopted by rule in 1980 following the Three Mile Island (TMI) accident. Evaluation criteria for the standards are given in NUREG-0654/FEMA -REP-1, "Criteria for the Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," which was also published in 1980. Since that time the guidance has not been significantly changed, and with the exception of the adoption of potassium iodide (KI) as part of the protective action regimen, the regulations in this area have not seen significant modification. The staff has identified several EP enhancements to address security events and it is appropriate that the guidance should be reviewed to ensure it reflects the current threat environment.

The staff recommends a review of each of the 16 guidance areas of NUREG-0654, considering how each is affected by security events and whether the planning standard strategy should be enhanced. The staff does not recommend undertaking rulemaking at this time, but rather enhancing the guidance to accommodate the new threat environment. While the initial reason for an in-depth review of the guidance is the impact from security events, the opportunity will be taken to improve the guidance in general. The review will be conducted in a manner complimentary to the "top-to-bottom" review being performed by the Emergency Preparedness Directorate (EPD) of EP regulations and requirements contained in 10 CFR 50.47(b) and 10 CFR 50, Appendix E. The staff will provide the Commission with a schedule for completion of the planned "top-to-bottom" review and planned enhancements as directed in SRM-M041214B, issued in response to the staff's briefing of the Commission on EP program initiatives on December 14, 2004. If the review of planning standard guidance indicates rulemaking is necessary, the information will be passed to the team performing the "top-to-bottom" review of EP regulations and requirements.

It is envisioned that the revised guidance will be provided in a supplement to NUREG-0654. In addition, the planning standards guidance will be updated to be consistent with the National Response Plan (NRP) including terminology, operational impacts (Events of National

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Significance, Joint information System, etc) and adoption of the Nuclear Annex of the NRP. This effort would be conducted in cooperation with FEMA and any insights will be shared with the other Federal agencies, State and local authorities, and the licensees through regional workshops and other outreach efforts.

6. Adjustment of EP Inspection Resources

The staff recommends adjusting the EP baseline inspection program to include the proposed enhancements. The staff hours currently applied to existing EP reactor oversight process (ROP) initiatives should be modified to assess implementation of the security-based EP enhancements. The inspection effort should be structured to encourage lessons learned and develop skills in this new area. The benefit of this approach is that existing resources would be applied at the current levels with no appreciable increase in staffing. Although the current level of inspection effort is structured to provide the minimum necessary oversight to maintain safety, a modification to the existing program can significantly benefit the overall EP response as the staff emphasizes EP aspects of security event response. Specifically, the inspection program would be modified to inspect the EP component of FOF exercises, the compensatory measures, the enhancements of this paper, and the EP security-based pilot drills.

EPD support to the FOF activity will be provided during the pre-exercise visit at the same time that Division of Nuclear Security conducts the strategy and timeline tabletop assessments. Conducting the EP tabletop segment during this period has the benefit of all participants performing in the same process (tabletop). This is expected to utilize approximately 0.1 full-time equivalents (FTE) of currently budgeted EPD resources. The observation of the EP segment of the FOF exercise will be provided by revising the EP inspection module for drill evaluation used by the resident inspectors to accommodate this activity. Currently there are up to 20 hours per year at each site to observe EP drill activity. The “smart sample” approach in this regard is to continue to observe the EP drill activity, including the EP portion of FOF exercise during the years that the FOF occurs at that site (triennial basis). This will not result in an increased resource burden for the Regional inspection staff.

Observation of the security event based drills will be conducted by headquarters EP specialists during the pilot phase. This effort has 1 FTE currently in the EPD budget. Regional participation would be requested on an “as available” basis to gain inspector insights, maximize experience, and encourage integration of lessons learned. The staff will inform the Commission regarding lessons learned from the pilot and provide a recommendation for program continuance.

Licensee voluntary adoption of the other EP enhancements is expected to result in EP plan and procedure changes. These will be assessed in two phases:

- Initially, EPD will engage licensees in order to perform a review of the emergency plan changes implemented as a result of the advisory. The advisory would state that implementation of the enhancements is not a decrease in effectiveness and may be implemented without prior NRC approval. Since the advisory permits the enhancements on a voluntary basis compliance issues are not expected. Additionally, workshops or other outreach activities will be

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conducted to assist licensees with proper implementation. It is planned that the review of plan changes would be performed by EPD staff with no impact on the Regional EP inspector staff. If review results indicate that licensees are not implementing the enhancements as expected, additional outreach can be conducted. If necessary, lessons learned from the plan change review process could be shared with industry to assist with effective implementation.

- Implementation of the enhancements will be assessed in an on-going manner as part of the baseline inspection program. This will be accomplished by the adjustment of the existing baseline EP inspection procedures to identify specific sample selections as a “smart sampling” technique. The EPD staff will conduct the initial inspections to determine the appropriate adjustments to the inspection procedures, but the intent is that the samples taken would include changes that impact response to security events. These initial inspections would be integrated with regularly scheduled regional EP inspections as the process matures. This is intended to be conducted in a manner that will not increase the burden on the Regional inspection staff.

These activities will require EPD staff support of approximately 1 FTE over the next year which is currently budgeted.

7. Enhanced Offsite Protective Action Recommendations (PARs)

The staff proposes that licensees revise PAR schemes for security events. Current practice is that licensees issue recommendations only at the GE level. The proposed enhancement for security events would initiate this PAR at the SAE or perhaps the Alert emergency classification level. It is the staff’s current view that the recommendation be limited to in-place sheltering for the general population and evacuation of limited segments of the population such as schools and parks within a 2-mile radius of the nuclear power plant (NPP). This view is consistent with NUREG-0654/FEMA-REP-1, Appendix 1, SAE class regarding State and/or local offsite authority actions. Item 2 of this section states “If sheltering near the site is desirable, activate public notification system within at least two miles of the plant.” Another consideration would be to direct the general public to go indoors and monitor the local emergency alert system for additional information and governmental authority direction.

The current PAR scheme for the GE classification level per Supplement 3 to NUREG-0654/FEMA-REP-1 would also be retained (keyhole evacuation). This approach allows for the implementation of limited protective actions (i.e., sheltering) prior to a GE classification and provides additional time for OROs to mobilize the necessary resources to expand protective actions if plant conditions degrade.

The long standing practice that the licensee recommends protective actions and the governmental authority considers and decides on protective measures would not change. This implementation of the new PAR scheme would be evaluated by licensees and OROs for applicability to each site. Additionally, there are complicating factors such as the potential for the simultaneous use of an abbreviated notification to offsite response organizations. This enhanced PAR concept would be discussed with stakeholders to gather information in

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recognition that there may be other site specific solutions that are more effective. The staff intends that this enhancement be provided in draft form to OROs, in concert with the Federal Emergency Management Agency (FEMA) and licensees, to establish dialogue on the subject. Any advisory developed thereafter would be informed by this input.

8. Abbreviated notification to Offsite Response Organizations

In SECY-03-165, "Evaluation of Nuclear Power Reactor Emergency Preparedness Planning Basis adequacy in the Post -9/11 Threat Environment," the staff noted limitations with the current EP notification process to offsite officials when performed with the control-room under duress. The staff identified this issue to licensees in RIS 2004-15, "Emergency Preparedness Issues: Post-9/11," dated October 18, 2004. The staff indicated that licensees should consider modification of the more common practice of providing a detailed description of the event with supporting information in the initial notification. However, the current notification process has been in effect for over 20 years and emergency responders are very familiar with its implementation. Any change to the process will include outreach to OROs.

The concept of operations in NUREG-0654 was for the initial notification to provide basic information indicating the state of the plant and request aid if necessary. Followup notifications would provide additional details as soon as practicable. However, the NUREG allowed negotiation of the notification content with OROs and this resulted in the more complete notification in practice. Licensees are proficient in initiating the notification within the required 15 minutes and OROs are proficient in receipt, verification and implementing appropriate response thereafter. However, the process of notification itself actually takes several minutes for the licensee to fill out forms, obtain authorization and notify, as well as for OROs, to receive, repeat back and verify the notification. An abbreviated initial notification would enhance emergency response in the case of a rapidly developing security event.

The concept of an abbreviated ORO notification was discussed with stakeholders in outreach meetings and the staff concludes that additional consultation is necessary prior to implementing this change. While the staff feels this enhancement is appropriate for security events it is recognized that it will not be willingly adopted if stakeholder concerns are not adequately addressed. The staff intends that this enhancement be further discussed with licensees and OROs, in concert with FEMA. Any advisory developed thereafter would be informed by the input obtained.

RESOURCES:

The activities addressed in this paper were anticipated during the creation of the Emergency Preparedness Directorate and the staff intends to perform these activities with existing allocated resources of 2.9 FTE in FY 05 and 3.3 FTE in FY 06, as identified below.

- The review of licensee emergency plan changes as a result of the safeguards advisory will utilize approximately 0.5 FTE for the remainder of fiscal year (FY) 05 and 0.5 FTE in FY 06.



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- The review of the 16 planning standards guidance will be a significant undertaking and will utilize approximately two (2) FTE for the remainder of FY 05 and two (2) FTE in FY 06. This review will assess the influence of terrorism on the application of the standard. This review will require close coordination with many stakeholders including FEMA, as the co-authoring agency for the original work, as well as consideration for the impacts on Offsite authorities.
- The recommendation to realign EP inspection assets opens the inspection focus to include areas of integrated response to terrorism. Support for the EP portion of the FOF tabletop effort will utilize approximately 0.1 FTE for the remainder of FY 05 and 0.1 FTE in FY 06.
- The enhanced security based drills will be conducted by headquarters EP specialist during the pilot phase. This effort has 1 FTE currently in the EPD budget under the Emergency Preparedness Licensing Planned Activity.

Item	FY 05 Resources and Planned Activity	FY 06 Resources and Planned Activity
Safeguards Advisory Review	0.5 FTE Homeland Security Mitigating Strategies	0.5 FTE Homeland Security Mitigating Strategies
Planning Standard Review	1.7 FTE Homeland Security Threat Assessment 0.3 FTE Homeland Security Mitigating Strategies	0.8 FTE Homeland Security Threat Assessment 0.4 FTE Homeland Security Regulatory Improvements 0.8 FTE Emergency Preparedness Licensing
FOF Support	0.1 FTE Homeland Security Mitigating Strategies	0.1 FTE Homeland Security Mitigating Strategies
EP Security-based Drills	0.3 FTE Emergency Preparedness Licensing	0.7 FTE Emergency Preparedness Licensing

This utilization of resources allows the staff to assess the incorporation of the response to terrorism initiatives into the emergency preparedness and response programs in a cohesive manner. This effort will be reviewed on an ongoing basis to determine if the alignment of the EP inspection can resort to program maintenance following a determination that licensees have adopted the post-9/11 terror environment in their emergency preparedness and response programs.

CONCLUSION:

Emergency preparedness planning is a dynamic process with flexible plans to allow for response to a wide range of events. Nuclear power plant emergency preparedness has been and continues to be based on the actual or potential health effects from the release of radiation. While it remains vital to be prepared to respond to radiological events caused by equipment malfunctions, operator errors, or other unintentional conditions, nuclear power plant emergency preparedness must also be ready to respond to intentional acts of malevolence where plant equipment challenges may progress more rapidly and have an immediate potential for significant harm and damage. Effective planning for contingencies must address a wide spectrum of events to ensure adequate protection. The staff has determined that, while the EP basis remains valid, implementation of the enhancements identified in this paper are

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appropriate. Recognizing the need for the NRC's emergency preparedness and response program to be congruent with the National Response Plan and acknowledging the role of Federal, State and local governments in responding to security-based events, the staff will continue to engage stakeholders during development and implementation of these enhancements and will continue to keep the Commission informed of its findings.