

THE NRC IS MAKING PUBLICLY AVAILABLE THE STAFF'S DRAFT VERSION OF TABLE B-1 IN NUREG-0654/FEMA-REP-1(REV. 2) TO FACILITATE DISCUSSION DURING THE PUBLIC MEETING BEING HELD ON APRIL 4, 2017. THIS DOCUMENT HAS BEEN PREVIOUSLY PUBLISHED FOR PUBLIC COMMENT. ADDITIONAL PUBLIC COMMENT ON THIS DOCUMENT IS NOT BEING SOUGHT AT THIS TIME. THIS DRAFT DOCUMENT HAS NOT BEEN SUBJECT TO ALL LEVELS NRC MANAGEMENT APPROVAL.

Draft

**Table B-1: Emergency Response Organization (ERO) Staffing and Augmentation Plan**

**NOTES**

- i. The minimum number of personnel assigned emergency preparedness (EP) functions for on-shift and augmented response (henceforth called the ERO staffing plan) is dependent on specific licensee requirements and is as approved by the NRC for the site-specific emergency plan. Augmented response provides (1) relief to the on-shift staff of EP functions (if necessary) and (2) provides support staff for effective emergency plan implementation.
- ii. This table lists the EP functions needed to implement the typical emergency plan. It is intended to provide a model for applicants and licensees to consider in the development of their site-specific emergency plan. The minimum ERO staffing plan of a specific licensee should be described.
- iii. The minimum ERO staffing plan is that which is required to effectively implement the site-specific emergency plan (i.e., the emergency plan cannot be effectively implemented without this staff). The emergency plan should describe the minimum ERO staffing plan, while supporting implementing procedures can describe any other staff response desired by the licensee as long as this staff is not critical to effective emergency plan implementation. The augmentation times listed are intended to provide a model for applicants and licensees to consider in the development of their site-specific emergency plan.
- iv. The titles of the positions are as defined in the site-specific emergency plan.
- v. The locations of these positions are intended to provide a model for applicants and licensees to consider in the development of their site-specific emergency plan. Licensees may choose to have these positions, or functions, at other facilities and/or activated at different emergency classification levels (ECLs).
- vi. Many of these EP functions may be assigned as collateral duties; however, the licensee is required to evaluate if the addition of collateral duties would preclude the performance of EP functions regardless of the other (non-EP) duties assigned to an individual responder.
- vii. The development of an ERO staffing plan should use a performance-based approach to the degree practicable. The licensee will need to demonstrate that the listed EP functions are constantly maintained. Once developed, and approved by the NRC, changes to the minimum ERO staffing plan are evaluated and controlled in accordance with 10 CFR 50.54(q). 10 CFR 50.54(q) would not apply to staff not listed in Table B-1 that are not critical to the effective implementation of the emergency plan.
- viii. The number of operations staff on-shift is controlled by the site-specific Technical Specifications or other licensing documents. However, if a licensee wants to assign an EP function(s) to an operations staff member as a collateral duty (see Note vii above) and perform an analysis in accordance with 10 CFR Part 50, Appendix E, Section IV.A.9.
- ix. The fire brigade is controlled by the site-specific Technical Specifications or other licensing documents. However, if a licensee wants to assign an EP function(s) to a fire brigade member as a collateral duty (see Note vii above) and perform an analysis in accordance with 10 CFR Part 50, Appendix E, Section IV.A.9.

Emergency Preparedness (EP) Functions	On-Shift	Technical Support Center (TSC)/Operations Support Center (OSC)		Emergency Operations Facility (EOF)/ Joint Information Center (JIC)/ Joint Information System (JIS)
		Alert or Greater Augment w/in 60 min. <sup>1,2</sup>	Alert or Greater Augment w/in 90 min. <sup>1,2</sup>	Site Area Emergency (SAE) or Greater Augment w/in 60 min. <sup>3</sup>
<b>Command and Control</b> <ul style="list-style-type: none"> <li>Provide overall ERO command and control, until relieved.</li> <li>Approve emergency action level (EAL) and/ or protective action recommendation (PAR) classifications, until relieved.</li> <li>Authorize personnel dose extensions, until relieved.</li> </ul>	Operations Shift Manager	Emergency Coordinator (1)	Not applicable	Emergency Director (1)
<b>Communications</b> <ul style="list-style-type: none"> <li>Communicate EAL and PAR classifications to offsite response organizations (OROs), including the NRC, until relieved.</li> </ul>	Communicator <sup>1</sup>	Communicators (TSC) (2)  <i>One communicator for the NRC and one communicator for OROs.</i>	As needed.  <i>One communicator staffed for NRC communications if needed.</i>	Communicator (1)
<b>Radiation Protection</b> <ul style="list-style-type: none"> <li>Provide qualified radiation protection coverage for responders accessing potentially unknown radiological environments during emergency conditions.</li> <li>Provide in-plant surveys.</li> <li>Control dosimetry and radiologically controlled area access.</li> </ul>	Radiation Protection Personnel <sup>4</sup>	Additional Radiation Protection Technicians <i>[In addition to personnel on-shift]</i> (OSC) (3)	Additional Radiation Protection Technicians <i>[In addition to personnel on-shift and those responding within 60 min.]</i> (OSC) (3)	Not applicable

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<p><b>Supervision of Radiation Protection Staff and Site Radiation Protection</b></p> <ul style="list-style-type: none"> <li>Evaluate and assess plant and offsite radiological data in the development of onsite protective actions and offsite PARs, until relieved.</li> <li>Recommend onsite protective actions and offsite PARs to the applicable decision-maker, until relieved.</li> <li>Direct all radiation protection activities, including field monitoring team (FMT) direction, until relieved.</li> <li>Provide relevant information to applicable communicators who are communicating offsite PARs to OROs, until relieved.</li> </ul>	Operations Shift Manager	Site Radiation Protection Coordinator (SRPC) (1) (TSC)	Not applicable	Radiation Protection Manager (1) (EOF)
<p><b>Dose Assessments/ Projections</b></p> <ul style="list-style-type: none"> <li>Perform dose assessments/projections and provide input to applicable PAR decision-maker, until relieved.</li> </ul>	Dose Assessment/ Projection Staff <sup>1</sup>	Dose Assessment/ Projection Staff (1) (TSC)	Not applicable	Dose Assessment/ Projection Staff (1) (EOF)

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<b>Emergency Classifications</b> <ul style="list-style-type: none"> <li>Evaluate plant conditions and recommend emergency classifications, until relieved.</li> </ul>	Emergency Classification Advisor <sup>1</sup>	Emergency Classification Advisor (1) (TSC)  <i>Licenses should consider having a liaison between Operations (Control Room) and the TSC to perform this function.</i>	Not applicable	Not applicable
<b>Engineering</b> <ul style="list-style-type: none"> <li>Provide engineering coverage related to the specific discipline of the assigned engineer, until relieved.</li> </ul>	<b>Core/Thermal Hydraulics Engineer<sup>1</sup></b> <ul style="list-style-type: none"> <li>Evaluate reactor conditions.</li> </ul>	<b>TSC Engineering Staff</b> <ul style="list-style-type: none"> <li>(1) Electrical/Instrumentation and Control (I&amp;C): Provide engineering coverage for the ERO related to electrical or I&amp;C equipment.</li> <li>(1) Mechanical: Provide engineering coverage for the ERO related to mechanical equipment.</li> <li>(1) Core/Thermal Hydraulics: Evaluate reactor conditions.</li> </ul>	As needed	Not applicable
<b>Security</b>	Security staffing per the site-specific security plan.	<b>Security Liaison (TSC) (1)</b> <ul style="list-style-type: none"> <li>Coordinate security-related activities and information with the Emergency Coordinator.</li> </ul>	Not applicable	Not applicable

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<b>Repair Team Activities</b> <sup>5</sup>	<p><b>Operations Staff<sup>f</sup></b></p> <ul style="list-style-type: none"> <li>Limited maintenance capability needed on-shift<sup>5</sup>. This is typically limited to minor electrical and/or mechanical work to restore power and/or emergency core cooling system (ECCS) flow.</li> </ul>	<p><b>Maintenance Personnel<sup>5</sup> (OSC) (1 electrician, 1 mechanic)</b></p> <ul style="list-style-type: none"> <li>(1) Electrician: Provide electrical support for ECCS equipment, event mitigation, and equipment repair.</li> <li>(1) Mechanic: Provide mechanical support for ECCS equipment, event mitigation, and equipment repair.</li> </ul>	<p><b>Maintenance Personnel<sup>5</sup> (OSC)</b></p> <ul style="list-style-type: none"> <li>(1) I&amp;C Technician: Provide assistance with logic manipulation, support for event mitigation and equipment repair, and support of digital I&amp;C if applicable. Additional I&amp;C staff may be called out if needed.</li> <li>Electricians – As needed.</li> <li>Mechanics – As needed.</li> </ul>	Not applicable

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		Alert or Greater Augment w/in 60 min. <sup>1,2</sup>	Alert or Greater Augment w/in 90 min. <sup>1,2</sup>	Site Area Emergency (SAE) or Greater Augment w/in 60 min. <sup>3</sup>
Supervision of Repair Team Activities	Repair Team Supervisor <sup>1</sup>	<b>Lead OSC Supervisor (1)</b> <ul style="list-style-type: none"> <li>Supervise OSC activities as directed by Emergency Coordinator.</li> </ul>	<b>OSC Supervisors</b> <ul style="list-style-type: none"> <li>(1) Electrical: Supervise OSC activities related to electrical equipment.</li> <li>(1) Mechanical: Supervise OSC activities related to mechanical equipment.</li> <li>(1) I&amp;C: Supervise OSC activities related to I&amp;C equipment. May be combined with Electrical Supervisor.</li> <li>(1) Radiation Protection: Supervise OSC activities related to radiation protection.</li> </ul>	Not applicable

Emergency Preparedness (EP) Functions	On-Shift	Technical Support Center (TSC)/Operations Support Center (OSC)		Emergency Operations Facility (EOF)/ Joint Information Center (JIC)/ Joint Information System (JIS)
		Alert or Greater Augment w/in 60 min. <sup>1,2</sup>	Alert or Greater Augment w/in 90 min. <sup>1,2</sup>	Site Area Emergency (SAE) or Greater Augment w/in 60 min. <sup>3</sup>
Field Monitoring Teams (FMTs)	Not applicable	<p><b>Onsite FMT</b></p> <ul style="list-style-type: none"> <li>(1) Qualified individual to assess the protected area for radiation and contamination and provide input to the SRPC. Responsible for radiation protection coverage for the FMT as directed by SRPC (TSC) or Radiation Protection Manager (EOF).</li> <li>(1) Driver to provide transportation.</li> </ul> <p><b>Offsite FMT A</b></p> <ul style="list-style-type: none"> <li>(1) Qualified individual to assess the area(s) outside the protected area for radiation and contamination, and for radioactive plume tracking, as directed by, and under the control of, the SRPC (TSC) or Radiation Protection Manager (EOF). Responsible for the radiation protection coverage of the FMT as directed by SRPC (TSC) or Radiation Protection Manager (EOF).</li> <li>(1) Driver to provide transportation.</li> </ul>	<p><b>Offsite FMT B</b></p> <ul style="list-style-type: none"> <li>(1) Qualified individual to assess the area(s) outside the protected area for radiation and contamination, and for radioactive plume tracking, as directed by, and under the control of, the SRPC (TSC) or Radiation Protection Manager (EOF). Responsible for the radiation protection coverage of the FMT as directed by SRPC (TSC) or Radiation Protection Manager (EOF).</li> <li>(1) Driver to provide transportation.</li> </ul>	Not applicable



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		Alert or Greater Augment w/in 60 min. <sup>1,2</sup>	Alert or Greater Augment w/in 90 min. <sup>1,2</sup>	Site Area Emergency (SAE) or Greater Augment w/in 60 min. <sup>3</sup>
<b>Media Information</b> <ul style="list-style-type: none"> <li>Manage and coordinate media information related to the event.</li> </ul>	Not applicable	JIC/JIS staff to address media inquiries. <sup>6</sup>	Not applicable	Staff to perform JIC/JIS-related tasks.
<b>Information Technology (IT)<sup>7</sup></b> <ul style="list-style-type: none"> <li>If emergency plan functions rely on computer-based equipment, provide IT support.</li> </ul>	Not applicable	Not applicable	<b>IT Lead (TSC) (1)<sup>1</sup></b> <ul style="list-style-type: none"> <li>Qualified individual to ensure IT equipment is operable.</li> </ul>	<b>IT Lead (EOF/JIC/JIS) (1)<sup>1</sup></b> <ul style="list-style-type: none"> <li>Qualified individual to ensure IT equipment is operable.</li> </ul>

<sup>1</sup> Other personnel may be assigned this function if no collateral duties are assigned to an individual that are beyond the capability of that individual to perform at any given time. A 10 CFR Part 50, Appendix E on-shift staffing analysis must be performed to support assignment of multiple roles to individual responders on-shift. For augmented ERO positions, a performance-based approach is acceptable for evaluating whether augmented personnel can adequately perform collateral functions without having competing priorities.

<sup>2</sup> Specified TSC/OSC personnel should be capable of performing their required functions within 60(90) minutes of an Alert or higher EAL classification. Emergency response facility activation timing is not the concern; it is whether the facility staff is performing the stated function(s) within the time specified.

<sup>3</sup> Specified EOF/JIC/JIS personnel should be capable of performing their required functions within 60 minutes of a SAE or higher EAL classification. Emergency response facility activation timing is not the concern; it is whether the facility staff is performing the stated function(s) within the time specified. Note: For JIC/JIS, licensees should use whatever term is used for the media support function/program/location as applicable.

<sup>4</sup> Two qualified radiation protection personnel for a single unit site or one per unit for a multi-unit site.

<sup>5</sup> The ability to get ECCS equipment operational is the primary need while on-shift, from an EP perspective. Maintenance staff expertise may be advantageous for licensees to consider for other reasons and at their discretion; however, for the purposes of NUREG-0654/FEMA-REP-1 and emergency plan development, the only area where maintenance availability is immediately necessary is for ECCS designs which have a likelihood of common equipment failures such that the reliability of the system is in question. If licensees can demonstrate that the availability of ECCS is not subject to common equipment failures (i.e., ECCS equipment is diverse and redundant), then consideration for not needing limited maintenance expertise on-shift can be given. However, timely augmentation for an electrician and a mechanic, and for an I&C technician, is still expected. The issue of work planning or implementation of lockout/tagout control is not relevant to this guidance as administrative controls needed to manipulate/repair plant equipment/instrumentation are controlled via other plant procedures.

<sup>6</sup> Does not need to be performed in the TSC/OSC, but needs to be established at this point.

<sup>7</sup> IT staff is only required to be described in the emergency plan if the emergency response is reliant on IT equipment to the extent where failure of IT equipment would prevent the effective implementation of the emergency plan. In other words, if the failure of IT equipment prevents the effective implementation of the emergency plan (i.e., redundant methods/options are unavailable or not timely), then this EP function should be developed as described.