

December 23, 2013

MEMORANDUM TO: Michael J. Case, Director  
Division of Engineering  
Office of Nuclear Regulatory Research

FROM: Scott A. Morris, Deputy Director */RA/*  
Division of Preparedness and Response  
Office of Nuclear Security and Incident Response

SUBJECT: PERIODIC REVIEW OF REGULATORY GUIDE 1.101,  
"EMERGENCY PLANNING AND PREPAREDNESS FOR  
NUCLEAR POWER REACTORS"

The Office of Nuclear Security and Incident Response (NSIR)/Division of Preparedness and Response (DPR) staff has reviewed Regulatory Guide (RG) 1.101 in accordance with the requirement for a periodic review in Management Directive 6.6, "Regulatory Guides." The purpose of the review was to assess whether the guidance was current or if a revision or withdrawal of the guide was needed. The periodic review was coordinated by the Office of Nuclear Regulatory Research's Regulatory Guide Development Branch.

The results of the staff's review of the RG are summarized in the enclosed document. In general terms, NSIR/DPR staff has determined that RG 1.101 is outdated and should be revised to account for several regulatory products that have been issued since the last time the RG was revised. However, the guidance in RG 1.101 is still accurate, and the staff has posted the additional relevant guidance on its external web site for use in licensing and inspection activities until RG 1.101 can be revised.

NSIR/DPR staff concluded that a full revision to RG 1.101 is warranted. However, to maximize the effective use of staff resources, NSIR/DPR plans to coordinate the needed RG revision with the planned revision of NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," as much as possible.

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The revision to this RG is planned to occur as part of the current revision to NUREG-0654/FEMA-REP-1, which is targeted for publication in late 2016/early 2017.

Enclosures:

1. Regulatory Guide Periodic Review Questions
2. List of Emergency Preparedness Regulatory Products to Be Considered as Part of an Update to RG 1.101

The revision to this RG is planned to occur as part of the current revision to NUREG-0654/FEMA-REP-1, which is targeted for publication in late 2016/early 2017.

Enclosures:

1. Regulatory Guide Periodic Review Questions
2. List of Emergency Preparedness Regulatory Products to Be Considered as Part of an Update to RG 1.101

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DATE	11/12/13	11/12/13	11/12/13	12/23/13

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## Regulatory Guide Periodic Review Questions

**Office:** NSIR

**Regulatory Guide Number:** 1.101

**Title:** Emergency Response Planning and Preparedness for Nuclear Power Reactors

**Recommended Staff Action:** Revision

- (1) What are the known technical or regulatory issues with the current version of the Regulatory Guide (RG)?**

  - The RG is not in the current format for RGs.
  - This document has not been updated to reflect the significant number of other emergency preparedness (EP)-related regulatory products generated since 1975. While the information contained in the RG is still accurate, it is outdated and should be revised.
  
- (2) What is the impact on internal and external stakeholders of not updating the RG for the known issues, in terms of numbers of licensing and inspection activities?**

  - There is no impact on current internal and external stakeholders of not updating the RG because the current practice is to refer to the NRC external web site, <http://www.nrc.gov/about-nrc/emerg-preparedness/regs-guidance-comm.html>, for current NRC-issued and endorsed guidance applicable to emergency planning.
  
- (3) What is an estimate of the level of effort needed to address identified issues in terms of Full-Time Estimate (FTE) and contract dollars?**

  - No contract dollars will be used. A specific staff FTE has yet to be determined since staff is proposing to update this RG as part of the planned revision to NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants." Approximately 0.5 FTE is estimated to support RG revision in the 2015-2016 timeframe; however, this estimate may vary based on changes to the timeline and scope of proposed revision to NUREG-0654/FEMA-REP-1.
  
- (4) Based on the answers to the questions above, what is the recommended staff action for this RG (Revise, Acceptable As-Is, Administrative Change, or Withdraw)?**

  - Revise the RG as part of future planned guidance development activities.
  
- (5) If a RG should be revised, provide a conceptual plan and timeframe to accomplish this.**

  - It is anticipated to be completed in early 2016. It will require coordination with other offices responsible for licensee emergency plans. It will also require a review of every regulatory product currently in use. Based upon this review, the information will either be incorporated in the RG, the regulatory product will be referenced or endorsed in the RG, or the regulatory product will be superseded with other documents. This would be a significant revision. Enclosure 2 lists the

regulatory products that would need to be reviewed as part of this effort. Note that there may be more regulatory products than those listed, which will be determined during this effort.

[Note: This review was conducted in November 2013 and reflects the staff's plan as of that date. These plans are tentative and subject to change.]

**List of Emergency Preparedness Regulatory Products to be Considered as Part of an  
Update to RG 1.101**

**NRC-Generated Guidance Documents:**

- Regulatory Guide 1.219, "Guidance on Making Changes to Emergency Response Plans for Nuclear Power Plants"
- NUREG-0396, EPA 520/1-78-016, "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants"
- NUREG-0654/FEMA-REP-1, Rev. 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants"
- NUREG-0654/FEMA-REP-1, Rev. 1 Addenda, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants"
- NUREG-0654/FEMA-REP-1, Rev. 1, Supplement 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants - Criteria for Utility Offsite Planning and Preparedness"
- NUREG-0654/FEMA-REP-1, Rev. 1, Supplement 2, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants - Criteria for Emergency Planning in an Early Site Permit Application"
- NUREG-0654/FEMA-REP-1, Rev. 1, Supplement 3, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants - Guidance for Protective Action Strategies"
- NUREG-0696, "Functional Criteria for Emergency Response Facilities"
- NUREG-0737, Supplement 1, "Clarification of TMI Action Plan Requirements - Requirements for Emergency Response Capability"
- NUREG-0814, "Methodology for Evaluation of Emergency Response Facilities"
- NUREG-1791, "Guidance for Assessing Exemption Requests from the Nuclear Power Plant Licensed Operator Staffing Requirements Specified in 10 CFR 50.54(m)"
- NUREG/CR-4831, "State of the Art in Evacuation Time Estimate Studies for Nuclear Power Plants"
- NUREG/CR-6863, "Development of Evacuation Time Estimate Studies for Nuclear Power Plants"
- NUREG/CR-6864, "Identification and Analysis of Factors Affecting Emergency Evacuations"
- NUREG/CR-6953, Vol. 1, "Review of NUREG-0654, Supplement 3, 'Criteria for Protective Action Recommendations for Severe Accidents"
- NUREG/CR-6953, Vol. 2, "Review of NUREG-0654, Supplement 3, 'Criteria for Protective Action Recommendations for Severe Accidents' - Focus Groups and Telephone Survey"
- NUREG/CR-6981, "Assessment of Emergency Response Planning and Implementation for Large Scale Evacuations"
- NUREG/CR-7002, "Criteria for Development of Evacuation Time Estimate Studies"

- NUREG/CR-7032, “Developing an Emergency Risk Communication (ERC)/Joint Information Center (JIC) Plan for a Radiological Emergency”
- NUREG/CR-7033, “Guidance on Developing Effective Radiological Risk Communication Messages: Effective Message Mapping and Risk Communication with the Public in Nuclear Plant Emergency Planning Zones”
- NSIR/DPR-ISG-01, “Interim Staff Guidance Emergency Planning for Nuclear Power Plants”

**NRC-Endorsed Guidance Documents:**

- NUMARC/NESP-007, “Methodology for Development of Emergency Action Levels”
- NEI 99-01, Rev. 4 & Rev. 5, “Methodology for Development of Emergency Action Levels”
- NEI 99-01, Rev. 6, “Development of Emergency Action levels for Non-Passive Reactors”
- NEI 06-04, Rev. 2, Appendix A, “Drill and Exercise Objectives”
- NEI-07-01, Rev. 0, “Methodology for Development of Emergency Action Levels Advanced Passive Light Water Reactors”
- NEI 10-05, Rev. 0, “Assessment of On-Shift Emergency Response Organization Staffing and Capabilities”

**Administrative Letters (AL):**

<b>File Name</b>	<b>Date</b>	<b>Description</b>
<u>AL 94-04</u>	04/11/94	Change to NRC Operations Center Commercial Telephone and Facsimile Numbers
<u>AL 94-07</u>	05/06/94	Distribution of Site-Specific and State Emergency Planning Information
<u>AL 94-16</u>	11/30/94	Revision of the NRC Core Inspection Program for Annual Emergency Preparedness Exercise
<u>AL 97-03</u>	03/28/97	Plant Restart Discussions Following Natural Disasters

**Bulletins:**

<b>File Name</b>	<b>Date</b>	<b>Description</b>
<u>Bulletin 79-18</u>	08/07/79	Audibility Problems Encountered on Evacuation of Personnel from High-Noise Areas
<u>Bulletin 80-15</u>	06/18/80	Possible Loss of Emergency Notification System (ENS) with Loss of Offsite Power
<u>Bulletin 05-02</u>	07/18/05	Emergency Preparedness and Response Actions for Security-Based Events

**Generic Letters (GL):**

<b>File Name</b>	<b>Date</b>	<b>Description</b>
<u>GL 79-50</u>	10/79	Emergency Plan Submittal Dates
<u>GL 79-67</u>	11/29/79	Estimates for Evacuation of Various Areas Around Nuclear Power Reactors
<u>GL 80-34</u>	04/25/80	Clarification of NRC Requirements for Emergency Response Facilities at Each Site
<u>GL 80-57</u>	06/26/80	Further Commission Guidance for Power Reactor Operating Licenses
<u>GL 80-60</u>	07/02/80	Request for Information Regarding Evacuation Times
<u>GL 80-90</u>	10/31/80	Post TMI Requirements
<u>GL 80-93</u>	11/06/80	Emergency Preparedness
<u>GL 80-94</u>	11/13/80	Emergency Plan
<u>GL 81-10</u>	02/18/81	Post-TMI Requirements for the Emergency Operations Facility
<u>GL 82-33</u>	12/17/82	Supplement 1 to NUREG-0737, Requirements for Emergency Response Capability
<u>GL 89-06</u>	04/12/89	Task Action Plan Item I.D.2 – Safety Parameter Display System – 10 CFR 50.54(f)
<u>GL 89-15</u>	08/21/89	Emergency Response Data System
<u>GL 91-14</u>	09/23/91	Emergency Telecommunications
<u>GL 93-01</u>	03/03/93	Emergency Response Data System Test Program
<u>GL 93-07</u>	12/28/93	Modification of the Technical Specification Administrative Control Requirements for Emergency and Security Plans
<u>GL 96-02</u>	02/13/96	Reconsideration of Nuclear Power Plant Security Requirements Associated with an Internal Threat
<u>GL 03-01</u>	06/12/03	Control Room Habitability

**Information Notices (IN):**

<b>File Name</b>	<b>Date</b>	<b>Description</b>
<u>IN 81-34</u>	11/16/81	Accidental Actuation of Prompt Public Notification System
<u>IN 82-44</u>	11/18/82	Clarification of Emergency Plan Exercise Requirements
<u>IN 83-28</u>	05/04/83	Criteria for Protective Action Recommendations for General Emergencies
<u>IN 83-34</u>	05/26/83	Event Notification Information Worksheet
<u>IN 84-05</u>	01/16/84	Exercise Frequency

<u>IN 84-40</u>	05/30/84	Emergency Worker Doses
<u>IN 85-41</u>	05/24/85	Scheduling of Pre-Licensing Emergency Preparedness Exercises
<u>IN 85-44</u>	05/30/85	Emergency Communication System Monthly Test
<u>IN 85-52</u>	07/10/85	Errors in Dose Assessment Computer Codes and Reporting Requirements Under 10 CFR Part 21
<u>IN 85-55</u>	07/15/85	Revised Emergency Exercise Frequency Rule
<u>IN 85-62</u>	07/23/85	Backup Telephone Numbers to the NRC Operations Center
<u>IN 85-80</u>	10/15/85	Timely Declaration of an Emergency Class, Implementation of an Emergency Plan, and Emergency Notifications
<u>IN 86-18</u>	03/26/86	NRC On-Scene Response During a Major Emergency
<u>IN 86-28</u>	04/24/86	Telephone Numbers to NRC Operations Center and Regional Offices
<u>IN 86-43</u>	06/10/86	Problems with Silver Zeolite Sampling of Airborne Radioiodine
<u>IN 86-55</u>	07/10/86	Delayed Access to Safety-Related Areas and Equipment During Plant Emergencies
<u>IN 86-97</u>	11/28/86	Emergency Communication System Defines Emergency Notification System (ENS) and Health Physics Network (HPN) and provides guidance on operation and testing of the system
<u>IN 86-98</u>	12/02/86	Offsite Medical Services
<u>IN 87-54</u>	10/23/87	Emergency Response Exercises
<u>IN 87-58</u>	11/16/87	Continuous Communications Following Emergency Notification
<u>IN 88-15</u>	04/18/88	Availability of U.S. Food and Drug Administration (FDA) - Approved Potassium Iodide for Use in Emergencies Involving Radioactive Iodine
<u>IN 89-46</u>	05/11/89	Confidentiality of Exercise Scenarios
<u>IN 89-72</u>	10/24/89	Failure of Licensed Senior Operators to Classify Emergency Events Properly
<u>IN 90-34</u>	05/10/90	Response to False Siren Activations
<u>IN 90-74</u>	12/04/90	Information on Precursors to Severe Accidents
<u>IN 91-33</u>	05/31/91	Reactor Safety Information for States During Exercises and Emergencies
<u>IN 91-64</u>	10/09/91	Site Area Emergency Resulting from the Loss of Non-Class 1E Uninterruptible Power Supplies
<u>IN 91-64, Supp. 1</u>	10/07/92	Site Area Emergency Resulting from the Loss of Non-Class 1E Uninterruptible Power Supplies

<u>IN 91-72</u>	11/19/91	Issuance of a Revision to the EPA Manual of Protective Action Guides and Protective Actions for Nuclear Incidents
<u>IN 91-77</u>	11/26/91	Shift Staffing at Nuclear Power Plants
<u>IN 92-08</u>	01/23/92	Revised Protective Action Guidance for Nuclear Incidents
<u>IN 92-32</u>	04/29/92	Problems Identified with Emergency Ventilation Systems for Near-Site (Within 10 Miles) Emergency Operations Facilities and Technical Support Centers
<u>IN 92-38</u>	05/12/92	Implementation Date for the Revision to the EPA Manual of Protective Action Guides and Protective Actions for Nuclear Incidents (EPA 400-R-92-001)
<u>IN 93-47</u>	06/18/93	Unrecognized Loss of Control Room Annunciators
<u>IN 93-53</u>	07/20/93	Effect of Hurricane Andrew on Turkey Point Nuclear Generating Station and Lessons Learned
<u>IN 93-81</u>	10/12/93	Implementation of Engineering Expertise On Shift
<u>IN 93-94</u>	12/09/93	Unauthorized Forced Entry into the Protected Area at Three Mile Island Unit 1 on February 7, 1993
<u>IN 94-27</u>	03/31/94	Facility Operating Concerns Resulting from Local Area Flooding
<u>IN 95-23</u>	04/24/95	Control Room Staffing Below Minimum Regulatory Requirement
<u>IN 95-48</u>	10/10/95	Results of Shift Staffing Study
<u>IN 96-19</u>	04/02/96	Failure of Tone Alert Radios to Activate When Receiving a Shortened Activation Signal
<u>IN 97-05</u>	02/27/97	Offsite Notification Capabilities
<u>IN 97-34</u>	06/12/97	Deficiencies in Licensee Submittals Regarding Terminology for Radiological Emergency Action Levels in Accordance with the New Part 20
<u>IN 97-66</u>	08/20/97	Failure to Provide Special Lenses for Operators Using Respirator or Self-Contained Breathing Apparatus During Emergency Operations
<u>IN 98-20</u>	06/03/98	Problems with Emergency Preparedness Respiratory Programs
<u>IN 02-14</u>	04/08/02	Ensuring a Capability to Evacuate Individuals, Including Members of the Public, from the Owner-Controlled Area
<u>IN 02-25</u>	08/26/02	Challenges to Licensees' Ability to Provide Prompt Public Notification and Information During an Emergency Preparedness Event
<u>IN 04-19</u>	11/04/04	Problems Associated with Back- Up Power Supplies to Emergency Response Facilities and Equipment
<u>IN 05-06</u>	03/30/05	Failure to Maintain Alert and Notification System Tone Alert Radio

		Capability
<u>IN 05-19</u>	07/18/05	Effect of Plant Configuration Changes on the Emergency Plan
<u>IN 06-28</u>	12/22/06	Siren System Failures Due to Erroneous Siren System Signal
<u>IN 07-12</u>	03/15/07	Tactical Communications Interoperability Between Nuclear Power Reactor Licensees and First Responders
<u>IN-08-15</u>	08/12/08	Emergency Response Data System Test Schedule Revised
<u>IN-09-01</u>	01/22/09	National Response Framework
<u>IN-09-19</u>	11/24/09	Hostile Action-Based Emergency Preparedness Drills
<u>IN 09-31</u>	12/10/09	Nonpower Reactor Licensee Notifications to the NRC During an Incident

**Regulatory Issue Summaries (RIS):**

<b>File Name</b>	<b>Date</b>	<b>Description</b>
<u>RIS 00-08</u>	03/28/00	Voluntary Submission of Performance Indicator Data
<u>RIS 00-11</u>	06/30/00	NRC Emergency Telecommunications System
<u>RIS 00-11, Supp. 1</u>	03/22/01	NRC Emergency Telecommunications System – Supplement 1 Informs addressees that the FTS-2001 (ETS) will require them to dial "1" before placing long distance calls and that they will need to update their instructions and procedures accordingly
<u>RIS 01-16</u>	08/01/01	Update of Evacuation Time Estimates
<u>RIS 02-01</u>	01/14/02	Changes to NRC Participation in the International Nuclear Event Scale
<u>RIS 02-12d</u>	10/16/02	Independent Spent Fuel Storage Installations Using Dry Storage - NRC Threat Advisory and Protective Measures System
<u>RIS 02-16</u>	09/13/02	Current Incident Response Issues
<u>RIS 02-21</u>	11/08/02	National Guard and Other Emergency Responders Located in the Licensee's Controlled Area
<u>RIS 03-12</u>	06/24/03	Clarification of NRC Guidance for Modifying Protective Actions
<u>RIS 03-18</u>	10/08/03	Use of NEI 99-01, "Methodology for Development of Emergency Action Levels," Revision 4, dated January 2003
<u>RIS 03-18 Supp. 1</u>	07/13/04	Supplement 1, Use of NEI 99-01, "Methodology for Development of Emergency Action levels," Revision 4, Dated January 2003
<u>RIS 03-18 Supp. 2</u>	12/12/05	Supplement 2, Use of NEI 99-01, "Methodology for Development of Emergency Action levels," Revision 4, Dated January 2003
<u>RIS 04-13</u>	08/02/04	Consideration of Sheltering in Licensee's Range of Protective Action Recommendations

<u>RIS 04-13 Supp. 1</u>	03/10/05	Supplement 1, Consideration of Sheltering in Licensee's Range of Protective Action Recommendations, Dated August 2004
<u>RIS 04-15</u>	10/18/04	Emergency Preparedness Issues: Post 9/11
<u>RIS 04-15 Supp. 1</u>	05/25/06	Emergency Preparedness Issues: Post 9/11
<u>RIS 05-02, Rev. 1</u>	04/19/11	Clarifying the Process for Making Emergency Plan Changes
<u>RIS 05-08</u>	06/06/05	Endorsement of Nuclear Energy Institute (NEI) Guidance "Range of Protective Actions for Nuclear Power Plant Incidents"
<u>RIS 05-013</u>	07/13/05	NRC Incident Response and the National Response Plan
<u>RIS 06-02</u>	02/23/06	Good Practices for Licensee Performance During the Emergency Preparedness Component of Force-On-Force Exercises
<u>RIS 06-03</u>	02/24/06	Guidance On Requesting an Exemption From Biennial Emergency Preparedness Exercise Requirements
<u>RIS 06-12</u>	07/19/06	Endorsement of Nuclear Energy Institute Guidance "Enhancements to Emergency Preparedness Programs for Hostile Action"
<u>RIS 06-21</u>	09/28/06	Improving Response Capabilities Through the Use of an Incident Response Electronic Library
<u>RIS 07-01</u>	01/10/07	Clarification of NRC Guidance for Maintaining a Standard Emergency Action Level Scheme
<u>RIS 07-02</u>	02/02/07	Clarification of NRC Guidance for Emergency Notifications During Quickly Changing Events
<u>RIS 08-08</u>	03/19/08	Endorsement of Revision 1 to Nuclear Energy Institute Guidance Document NEI 06-04, "Conducting a Hostile Action-Based Emergency Response Drill"
<u>RIS 08-26</u>	10/29/08	Clarified Requirements of Title 10 of the Code of Federal Regulations (10 CFR) Section 50.54(Y) When Implementing 10 CFR Section 50.54(X) to Depart from a License Condition or Technical Specification
<u>RIS-09-10</u>	06/19/09	Communications Between the NRC and Reactor Licensees During Emergencies and Significant Incidents
<u>RIS-09-13</u>	09/28/09	Emergency Response Data System Upgrade from Modem to Virtual Private Network Appliance