DUKE ENERGY

McGUIRE NUCLEAR SITE

EMERGENCY PLAN

APPROVED: S D Capps

SITE VICE PRESIDENT

DATE APPROVED: 9/19/17

REVISION 17-1: September, 2017

EFFECTIVE DATE: September, 2017

ORIGINAL DATE: August 25, 1980

DUKE ENERGY COMPANY
McGUIRE NUCLEAR SITE
EMERGENCY PLAN
REVISION LIST

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Change 4, August, 1981
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Revision 2, February, 1982
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Revision 4, April, 1982
Revision 5, June, 1982
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Revision 7, September, 1982
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Revision 10, February, 1983
Revision 11, June, 1983
Revision 12, November, 1983
Revision 13, March, 1984
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Revision 15, January, 1985
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Revision 30, March, 1990
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Revision 32, July, 1991
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Rev. 93-2, June, 1993
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Rev. 94-2, June, 1994
Rev. 94-3, August 1994
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Rev. 16-4, November, 2016
Rev. 16-5, November, 2016
Rev. 17-1, September, 2017

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10 CFR 50.54(q) Screening Evaluation Form

Screening and Evaluation Number	Applicable Sites	
EREG #: 2137325	BNP	☐
	CNS	☐
	CR3	☐
	HNP	☐
5AD #: 2137333	MNS	x
	ONS	☐
	RNP	☐
	GO	☐

Document and Revision

MNS Emergency Plan Section F Emergency Communications Rev. 17-1

Part I. Description of Activity Being Reviewed (event or action, or series of actions that may result in a change to the emergency plan or affect the implementation of the emergency plan):

F.1.b Communications with State/Local Governments

There are three means of contacting states/counties in the 10-mile EPZ. DEMNET is the primary method of communications. Standard telephone lines serve as a backup means of communication. A radio system can be used for communication among counties, the control room, TSC and EOF.

Reason for change:

The referenced radio system is a 48.50 MHz system which when installed, was dedicated for use in communicating with local government Warning Points. This system is obsolete, not functional, and parts are no longer available to repair the system due to obsolescence. This system is being retired and physically removed from station facilities as well as county Warning Points. At least three methods of communication continue to be available to contact Local Government Warning Points.

10 CFR 50.54(q) Screening Evaluation Form

Part II. Activity Previously Reviewed?	Yes		No	X
Is this activity Fully bounded by an NRC approved 10 CFR 50.90 submittal or Alert and Notification System Design Report? If yes, identify bounding source document number or approval reference and ensure the basis for concluding the source document fully bounds the proposed change is documented below: Justification:	10 CFR 50.54(q) Effectiveness Evaluation is not required. Enter justification below and complete Attachment 4, Part V.		Continue to Attachment 4 , 10 CFR 50.54(q) Screening Evaluation Form, Part III	
Bounding document attached (optional)		☐		

Part III. Editorial Change	Yes	☐	No	X
Is this activity an editorial or typographical change only, such as formatting, paragraph numbering, spelling, or punctuation that does not change intent? Justification:	10 CFR 50.54(q) Effectiveness Evaluation is not required. Enter justification and complete Attachment 4, Part V & VI.		Continue to Attachment 4, Part IV and address non editorial changes	

Part IV. Emergency Planning Element and Function Screen (Reference Attachment 1, Considerations for Addressing Screening Criteria)

Does this activity involve any of the following, including program elements from NUREG-0654/FEMA REP-1 Section II? If answer is yes, then check box.

1	10 CFR 50.47(b)(1) Assignment of Responsibility (Organization Control)	
1a	Responsibility for emergency response is assigned.	☐
1b	The response organization has the staff to respond and to augment staff on a continuing basis (24-7 staffing) in accordance with the emergency plan.	☐
2	10 CFR 50.47(b)(2) Onsite Emergency Organization	
2a	Process ensures that onshift emergency response responsibilities are staffed and assigned	☐
2b	The process for timely augmentation of onshift staff is established and maintained.	☐
3	10 CFR 50.47(b)(3) Emergency Response Support and Resources	
3a	Arrangements for requesting and using off site assistance have been made.	☐
3b	State and local staff can be accommodated at the EOF in accordance with the emergency plan. (NA for CR3)	☐
4	10 CFR 50.47(b)(4) Emergency Classification System	
4a	A standard scheme of emergency classification and action levels is in use. (Requires final approval of Screen and Evaluation by EP CFAM.)	☐
5	10 CFR 50.47(b)(5) Notification Methods and Procedures	

10 CFR 50.54(q) Screening Evaluation Form

5a	Procedures for notification of State and local governmental agencies are capable of initiating notification of the declared emergency within 15 minutes (30 minutes for CR3) after declaration of an emergency and providing follow-up notification.	☐
5b	Administrative and physical means have been established for alerting and providing prompt instructions to the public within the plume exposure pathway. (NA for CR3)	☐
5c	The public ANS meets the design requirements of FEMA-REP-10, Guide for Evaluation of Alert and Notification Systems for Nuclear Power Plants, or complies with the licensee's FEMA-approved ANS design report and supporting FEMA approval letter. (NA for CR3)	☐

10 CFR 50.54(q) Screening Evaluation Form

Part IV. Emergency Planning Element and Function Screen (cont.)		
6	10 CFR 50.47(b)(6) Emergency Communications	
6a	Systems are established for prompt communication among principal emergency response organizations.	☐
6b	Systems are established for prompt communication to emergency response personnel.	X
7	10 CFR 50.47(b)(7) Public Education and Information	
7a	Emergency preparedness information is made available to the public on a periodic basis within the plume exposure pathway emergency planning zone (EPZ). (NA for CR3)	☐
7b	Coordinated dissemination of public information during emergencies is established.	☐
8	10 CFR 50.47(b)(8) Emergency Facilities and Equipment	
8a	Adequate facilities are maintained to support emergency response.	☐
8b	Adequate equipment is maintained to support emergency response.	☐
9	10 CFR 50.47(b)(9) Accident Assessment	
9a	Methods, systems, and equipment for assessment of radioactive releases are in use.	☐
10	10 CFR 50.47(b)(10) Protective Response	
10a	A range of public PARs is available for implementation during emergencies. (NA for CR3)	☐
10b	Evacuation time estimates for the population located in the plume exposure pathway EPZ are available to support the formulation of PARs and have been provided to State and local governmental authorities. (NA for CR3)	☐
10c	A range of protective actions is available for plant emergency workers during emergencies, including those for hostile action events.	☐
10d	KI is available for implementation as a protective action recommendation in those jurisdictions that chose to provide KI to the public.	☐
11	10 CFR 50.47(b)(11) Radiological Exposure Control	
11a	The resources for controlling radiological exposures for emergency workers are established.	☐
12	10 CFR 50.47(b)(12) Medical and Public Health Support	
12a	Arrangements are made for medical services for contaminated, injured individuals.	☐
13	10 CFR 50.47(b)(13) Recovery Planning and Post-accident Operations	
13a	Plans for recovery and reentry are developed.	☐
14	10 CFR 50.47(b)(14) Drills and Exercises	
14a	A drill and exercise program (including radiological, medical, health physics and other program areas) is established.	☐
14b	Drills, exercises, and training evolutions that provide performance opportunities to develop, maintain, and demonstrate key skills are assessed via a formal critique process in order to identify weaknesses.	☐
14c	Identified weaknesses are corrected.	☐
15	10 CFR 50.47(b)(15) Emergency Response Training	
15a	Training is provided to emergency responders.	☐

10 CFR 50.54(q) Screening Evaluation Form

Part IV. Emergency Planning Element and Function Screen (cont.)		
16	10 CFR 50.47(b)(16) Emergency Plan Maintenance	
16a	Responsibility for emergency plan development and review is established.	☐
16b	Planners responsible for emergency plan development and maintenance are properly trained.	☐
PART IV. Conclusion If no Part IV criteria are checked, a 10 CFR 50.54(q) Effectiveness Evaluation is not required, then complete Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part V. Go to Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part VI for instructions describing the NRC required 30 day submittal.		
If any Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part IV criteria are checked, then complete Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part V and perform a 10 CFR 50.54(q) Effectiveness Evaluation. Shaded block requires final approval of Screen and Evaluation by EP CFAM.		X

Part V. Signatures:		
Preparer Name (Print): Renard O. Burris	Preparer Signature:	Date: 7/18/17
Reviewer Name (Print): Randy Gibson	Reviewer Signature:	Date: 9/7/17
Approver (EP Manager Name (Print): Kevin L. Murray	Approver Signature:	Date: 9-7-17
Approver (CFAM, as required) Name (Print) N/A	Approver Signature: N/A	Date: N/A

Part VI. NRC Emergency Plan and Implementing Procedure Submittal Actions	
Create two EREG General Assignments. • One for EP to provide the 10 CFR 50.54(q) summary of the analysis, or the completed 10 CFR 50.54(q), to Licensing.	x
• One for Licensing to submit the 10 CFR 50.54(q) information to the NRC within 30 days after the change is put in effect.	x

QA RECORD

<< 10 CFR 50.54(q) Effectiveness Evaluation Form >>

Screening and Evaluation Number	Applicable Sites	
EREG #: 2137325	BNP	☐
	CNS	☐
	CR3	☐
	HNP	☐
5AD #:2137333	MNS	x
	ONS	☐
	RNP	☐
	GO	☐

Document and Revision

MNS Emergency Plan Section F, Emergency Communications, Rev. 17-1

Part I. Description of Proposed Change:

Retire 48.50 MHz radio from MNS Emergency Plan. The 48.50 MHz County Emergency Response Radio in the MNS Emergency Plan is obsolete, not functional, and due to obsolescence, parts are no longer available to repair the radio.

See also attached revised MNS Emergency Plan Figures F-1 and F-2.

Attachment 6, 10 CFR 50.54(q) Initiating Condition (IC) and Emergency Action Level (EAL) and EAL Bases Validation and Verification (V&V) Form , is attached (required for IC or EAL change)	Yes ☐ No ☒

Part II. Description and Review of Licensing Basis Affected by the Proposed Change:

DESCRIPTION

McGuire SER Section 13,
NUREG 0654 FEMA REP-1, Rev. 1

Standard

Provisions exist for prompt communications among principal response organizations and to the public.

Emergency Plan Evaluation

The station's communication system is designed to provide secure, redundant, and diverse communication to all essential onsite and offsite locations during normal operations and under accident conditions. Station systems are comprised of a commercial telephone system, a station telephone system, public address system, and two-way radio systems. A dedicated internet-based telephone system with a backup satellite capability, Duke Emergency Network (DEMNET) is the primary means of communication with local government agencies. Emergency Notification System (ENS), a separate commercial system exists for communications with the NRC.

These systems are located in plant areas that are manned 24-hours per day and provide the capability to

communicate directly with both State and Local Warning Points and/or their Emergency Operations Centers and the NRC.

F.1.a

24-hour Notification Capability exists from the station to these offsite response organizations through multiple means, including:

- DEMNET (Duke Emergency Management Network) to the county and state warning points, county EOCs, state EOC, and EOF.
- Private telephone capability to the county and state warning points and EOCs.
- Dedicated radio network to the county warning points and EOCs and state EOC.

Figure F-4 depicts the various emergency communications links in areas that are manned 24-hours per day from the station to various offsite response organizations and with onsite facilities.

F.1.b

There are three means of contacting states/counties in the 10-mile EPZ Communications with State/local Governments exists using multiple means of communication including:

- DEMNET (Primary Dedicated telephone system to state and local warning points).
- Standard telephone system (backup)
- Radio system for communication among counties, control room, TSC and EOF.

Figure F-4 depicts the various emergency communications links from the station to State/Local Governments.

F.1.c

Communications capability with Federal Organizations exists from the McGuire Control Room, TSC and EOF through NRC Emergency Notification System (ENS) lines, Health Physics Network (HPN) through station and commercial telephone systems. Commercial telephone lines provide backup capability to the station telephone system.

Part III. Description of How the Proposed Change Complies with Regulation and Commitments.
Regulatory Criteria:

10CFR50.47(b)(6)
Provisions exist for prompt communications among principal response organizations and to the public.

10CFR50 Appendix E.IV.E.9
At least one onsite and one offsite communications system; each system shall have a backup power source. All communications plans shall have arrangements for emergencies, including titles and alternates for those in charge at both ends of the communication links and the primary and backup means of communication. Where consistent with the function of the governmental agency, these arrangements will include:

a. Provision for communications with contiguous State/local governments within the plume exposure pathway EPZ. Such communications shall be tested monthly.

b-d.-omitted for brevity

NUREG 0654 Paragraphs F.1, F.1.a, and F.1.b

F.1-The communications plans for emergencies shall include organizational titles and alternates for both ends of the communication links. Each organization shall establish reliable primary and backup means of communication for licensees, local, and State response organizations. Such systems should be selected to be compatible with one another. Each plan shall include

- F.1.a-a provision for 24-hour per day notification to and activation of the State/local emergency response network; and at minimum, a telephone link and alternate, including 24-hour per day manning of communications links that initiate emergency response actions.
- F.1.b-provision for communications with contiguous State/local governments within the emergency Planning zones

As a result of this change provisions will continue to exist for prompt communications among the principal response organizations of the licensee and state/local government warning points, emergency operations facilities, and Federal Organizations. No organizational or title changes occur as a result of this change; no arrangements for response to emergencies occur as a result of this change;

Specifically, multiple reliable primary and backup means of communications continue to be available between the licensee, McGuire Nuclear Station and state and local warning points including:

- DEMNET
  Primary Dedicated telephone system to state and local warning points
  Satellite backup feature
  Battery-backup feature
- Station Telephone System (backup)
- Commercial Telephone System (backup)
- WebEOC
- FAX

Part IV. Description of Emergency Plan Planning Standards, Functions and Program Elements Affected by the Proposed Change (Address each function identified in Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part IV of associated Screen):

The Emergency Planning Standard associated with this change is 6b, Systems are established for prompt communication to emergency response personnel.

The Emergency Planning function associated with this change is Inter-Agency/Organization Communications

Prior to this change the McGuire Emergency Plan described three means of contacting states/counties in the 10-mile EPZ. They are:

- DEMNET (Primary)
- Standard Telephone Lines (Backup)
- County Emergency Response Radio can be used to communicate between the Control Room, TSC, EOF and counties (48.50 MHz Radio).

As a result of this change multiple means of prompt contact with states/counties in 10-mile EPZ continue to exist including:

- DEMNET (Primary Dedicated telephone system to state and local warning points)
- DEMNET-Satellite backup feature with Battery-backup
- Station Telephone System (backup)
- Commercial Telephone System (backup)
- WebEOC
- FAX

Part V. Description of Impact of the Proposed Change on the Effectiveness of Emergency Plan Functions:

The 48.50 MHz County Emergency Response Radio is described in the McGuire Emergency Plan as a system that can be used to communicate between the Control Room, TSC, EOF and counties. This system was installed during the 1980s and is obsolete, not functional and unreliable. Due to obsolescence parts and service are not available for this equipment as it is considered antiquated technology. As a result of this change, the radio system will be removed from the McGuire Emergency Plan and physically removed from McGuire emergency facilities as well as county warning points. This equipment has already been removed from the Emergency Operations Facility.

Redundant and reliable communications systems will continue to be available to perform the function of prompt Inter-Agency /Organization Communications through DEMNET- both primary and backup satellite, a station telephone system, and commercial telephone lines.

Part VI. Evaluation Conclusion. Answer the following questions about the proposed change.			
1	Does the proposed change comply with 10 CFR 50.47(b) and 10 CFR 50 Appendix E?	Yes x	No ☐
2	Does the proposed change maintain the effectiveness of the emergency plan (i.e., no reduction in effectiveness)?	Yes x	No ☐
3	Does the proposed change maintain the current Emergency Action Level (EAL) scheme?	Yes x	No ☐
4	Choose one of the following conclusions:		
a	The activity does continue to comply with the requirements of 10 CFR 50.47(b) and 10 CFR 50, Appendix E, and the activity does not constitute a reduction in effectiveness or change in the current Emergency Action Level (EAL) scheme. Therefore, the activity can be implemented without prior NRC approval.		x
b	The activity does not continue to comply with the requirements of 10 CFR 50.47(b) or 10 CFR 50 Appendix E or the activity does constitute a reduction in effectiveness or EAL scheme change. Therefore, the activity cannot be implemented without prior NRC approval.		☐

Part VII. Disposition of Proposed Change Requiring Prior NRC Approval		
Will the proposed change determined to require prior NRC approval be either revised or rejected?	Yes ☐	No ☐
If No, then initiate a License Amendment Request in accordance 10 CFR 50.90 and AD-LS-ALL-0002, Regulatory Correspondence, and include the tracking number:_____.		

Part VIII. Signatures: EP CFAM Final Approval is required for changes affecting risk significant planning standard 10 CFR 50.47(b)(4).		
Preparer Name (Print): Renard O. Burris	Preparer Signature: R Burris	Date: 7/18/17
Reviewer Name (Print): Randy Gibson	Reviewer Signature:	Date: 9/7/17
Approver (EP Manager) Name (Print): Kevin L. Murray	Approver Signature: K.L. Murray	Date: 9-7-17
Approver (CFAM, as required) Name (Print): N/A	Approver Signature: N/A	Date: N/A

If the proposed activity is a change to the E-Plan or implementing procedures, then create two EREG General Assignments. • One for EP to provide the 10 CFR 50.54(q) summary of the analysis, or the completed 10 CFR 50.54(q), to Licensing. • One for Licensing to submit the 10 CFR 50.54(q) information to the NRC within 30 days after the change is put in effect.	☑ ☑

QA RECORD

F. Emergency Communications

F.1.a. 24 Hour Notification Capability

In the event of an emergency at the McGuire Nuclear Site, 24 hour per day notification to and activation of the state/county emergency response network is established. All state/county warning points are manned 24 hours per day. This communications link consists of the following:

(1) Duke Emergency Management Network (DEMNET) to the county and state warning points, county EOC's, state EOC, and EOF.

(2) Private telephone capability to the county and state warning points and EOCs.

These links are available from the McGuire Control Room, as shown in Figure F-1, the Technical Support Center, as shown in Figure F-2 and the EOF as shown in Figures F-3 and F-4. Backup communication links can be established through the North Carolina State Western Branch Office to the State Warning Point/EOC and by the Duke Energy P&T Frequency to Corporate Headquarters if required.

F.1.b. Communications With State/Local Governments

There are multiple means of contacting state/counties in the 10 mile EPZ.

- DEMNET (Primary Dedicated telephone system to state and local warning points)
- DEMNET - Satellite backup feature with Battery-backup
- Station Telephone System (backup)
- Commercial Telephone System (backup)
- WebEOC

Communications by radio with the state headquarters (i.e. SERT) can be achieved by using the state's Radio Network.

Two telephone lines to N.C. are dedicated for specific tasks.

- EOF Director to the state director at the SERT
- State Public Information Officer (PIO) at the Joint Information Center to the State PIO at the N.C. State Emergency Response Team (SERT).

F.1.c. Communications With Federal Organizations

The McGuire Control Room, TSC and EOF all have NRC Emergency Notification System (ENS), Health Physics Network (HPN), capability through Duke Telecommunications System. Commercial telephone lines provide a backup to Duke Emergency Telecommunications System (ETS).

The Radiological Assessment Manager in the EOF has the capability to contact DOE-Savannah River for assistance through the use of standard telephone circuits.

F.1.d. Communications Between Site, EOF, Local EOC's and Monitoring Teams

Provision for communications between the McGuire Control Room or TSC and the EOF, county and state EOC's is provided by DEMNET. The standard telephone lines as well as satellite phones are the backup. A separate radio system provides for communications between the TSC and/or EOF to the radiological monitoring teams in the field.

F.1.e. Activation of Emergency Personnel

Notification, alerting and activation of emergency response personnel in the TSC, OSC, and EOF is described in Section E.2.

F.1.f. Communications Between NRC, EOF and Monitoring Teams

Communications between McGuire Control Room/TSC/EOF to the NRC Operations Center is via the Duke Telecommunications System ENS phone or private telephone. Communications from the McGuire Control Room/TSC/EOF to the regional office is via the normal private capability. Communications between the TSC/EOF and off-site monitoring teams is via the radio system described in F.1.d.

F.1.g. ERDS Data Transfer

The ERDS (Emergency Response Data System) PC located in the TSC is used to provide data to the NRC as described in NUREG-1394, Rev. 1, Appendix B.

ERDS will be activated at an Alert or higher classification.

F.2 Medical Support Communications

Communications to local medical facilities is via private telephone lines from the site and the EOF. Radio communications are possible through the Mecklenburg County Communications Center to ambulance and hospital facilities.

F.3 Communications System Testing

Communications between the McGuire Nuclear Site/EOF and state/local warning points are tested monthly, communications between the site and Federal emergency response facilities and states within the 50 mile ingestion pathway are conducted quarterly, communications with state/local EOCs and field assessment teams are conducted annually.

FIGURE F-1
MCGUIRE NUCLEAR SITE EMERGENCY COMMUNICATIONS
(Prior to TSC/EOF Activation)

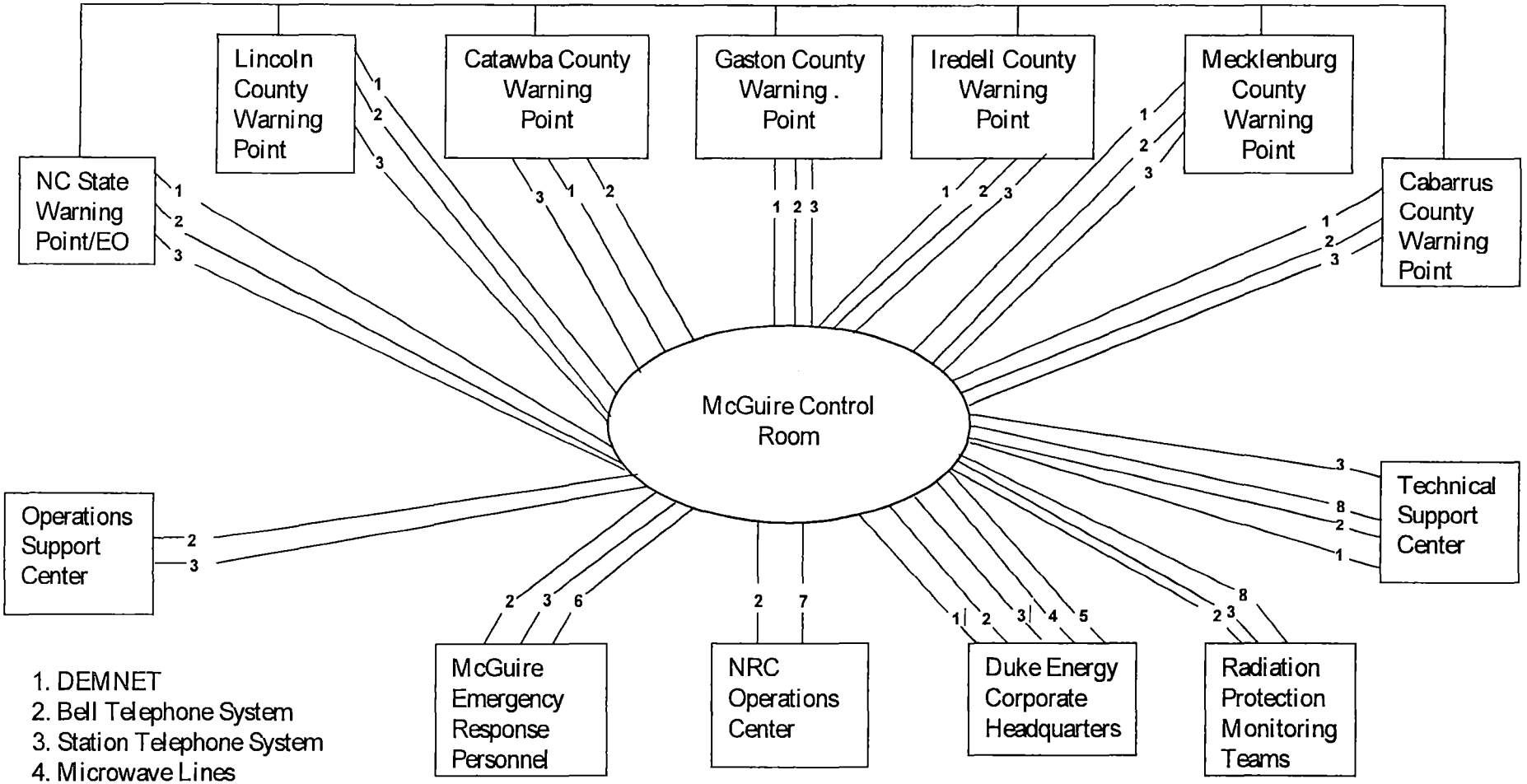


FIGURE F-2
MCGUIRE NUCLEAR SITE EMERGENCY COMMUNICATIONS
(After TSC Activation and During EOF Activation)

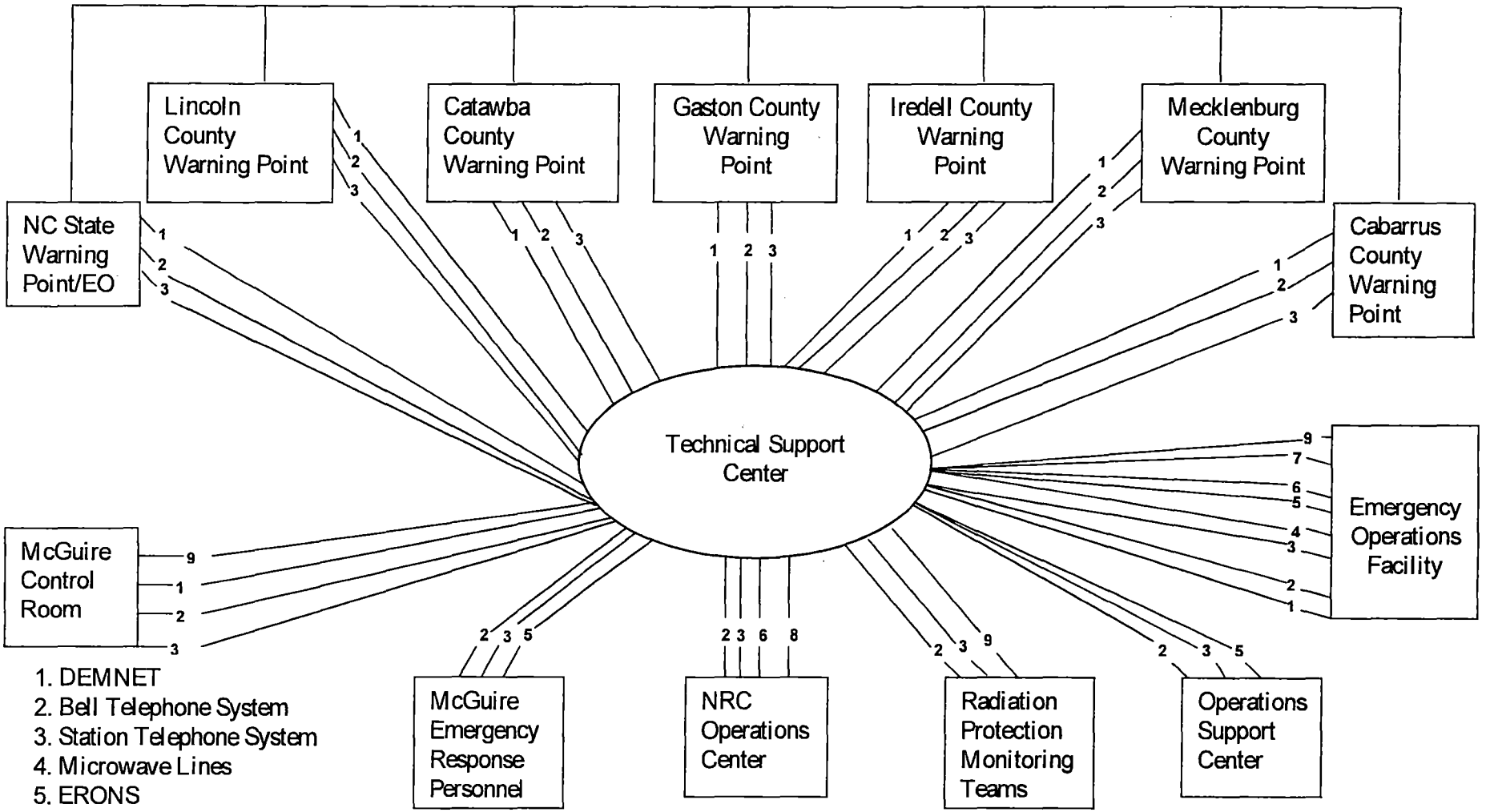


FIGURE F-3
EMERGENCY RESPONSE
RADIO SYSTEM

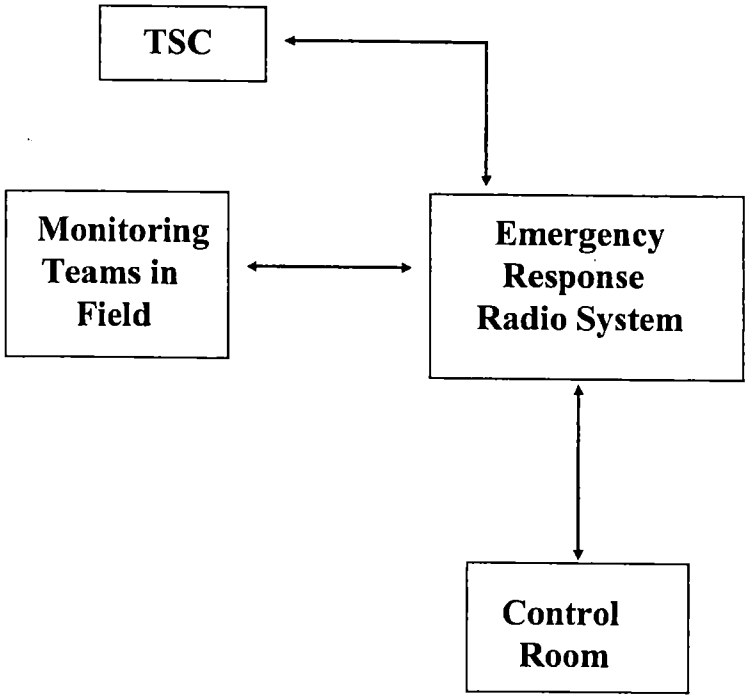
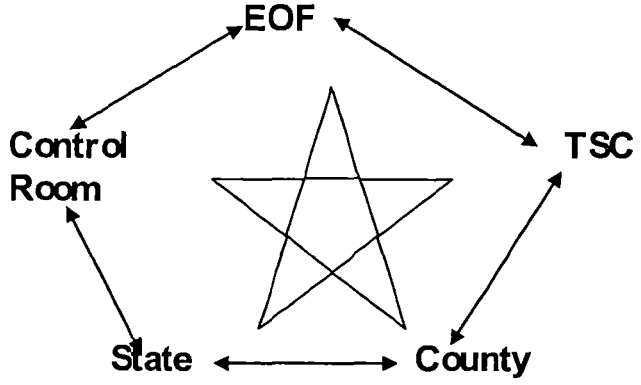
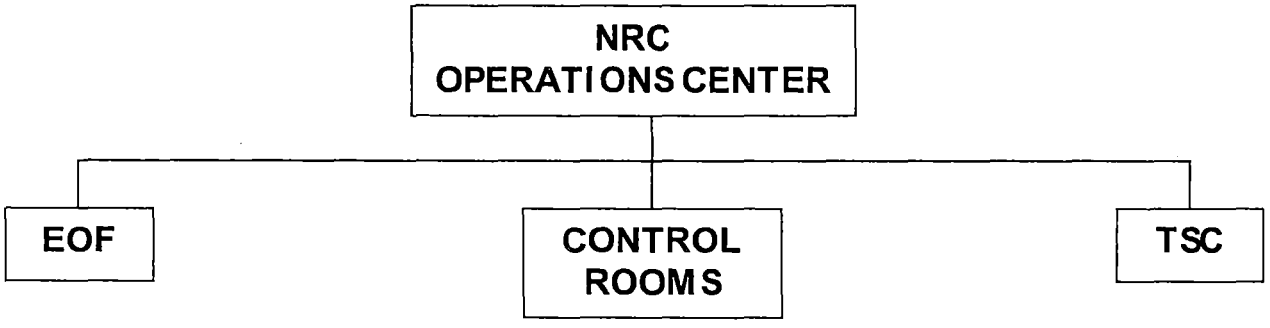


FIGURE F-4
EOF COMMUNICATIONS
DEMNET

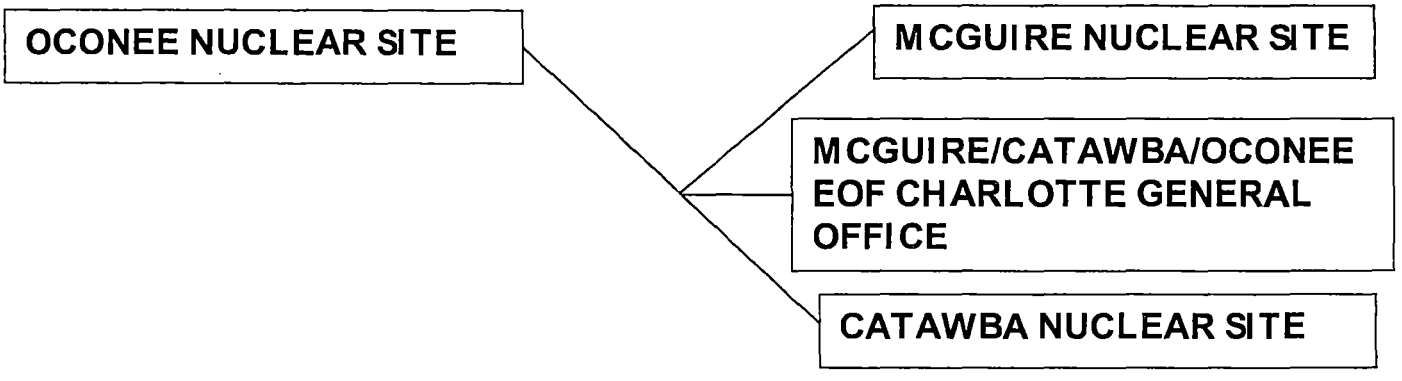


NOTE: County EOC and Warning Point
State SERT (NC) FEOC (SC)

NRC EMERGENCY NOTIFICATION SYSTEM (ENS)



DISPATCH MICROWAVE PHONE SYSTEM



10 CFR 50.54(q) Screening Evaluation Form

Screening and Evaluation Number	Applicable Sites	
EREG #:2137839	BNP	☐
	CNS	☐
	CR3	☐
	HNP	☐
5AD #: 2137866	MNS	x
	ONS	☐
	RNP	☐
	GO	☐

Document and Revision

MNS Emergency Plan Section H, Emergency Facility and Equipment, Figure H-1 Rev. 17-1

Part I. Description of Activity Being Reviewed (event or action, or series of actions that may result in a change to the emergency plan or affect the implementation of the emergency plan):

Figure H-1 Duke Energy McGuire Nuclear Station Technical Support Center

Revise Figure H-1 to reflect current facility layout.

Reason for change:

McGuire Technical Support Center has been renovated. New drawing reflects current facility layout. No facility functions or capabilities have been altered as a result of the renovation.

Part II. Activity Previously Reviewed?	Yes		No	X
Is this activity Fully bounded by an NRC approved 10 CFR 50.90 submittal or Alert and Notification System Design Report? If yes, identify bounding source document number or approval reference and ensure the basis for concluding the source document fully bounds the proposed change is documented below: Justification:	10 CFR 50.54(q) Effectiveness Evaluation is not required. Enter justification below and complete Attachment 4, Part V.		Continue to Attachment 4 , 10 CFR 50.54(q) Screening Evaluation Form, Part III	
Bounding document attached (optional)		☐		

10 CFR 50.54(q) Screening Evaluation Form

Part III. Editorial Change	Yes ☐	No X
Is this activity an editorial or typographical change only, such as formatting, paragraph numbering, spelling, or punctuation that does not change intent? Justification:	10 CFR 50.54(q) Effectiveness Evaluation is not required. Enter justification and complete Attachment 4, Part V & VI.	Continue to Attachment 4, Part IV and address non editorial changes

Part IV. Emergency Planning Element and Function Screen (Reference Attachment 1, Considerations for Addressing Screening Criteria)

Does this activity involve any of the following, including program elements from NUREG-0654/FEMA REP-1 Section II? If answer is yes, then check box.

1	10 CFR 50.47(b)(1) Assignment of Responsibility (Organization Control)	
1a	Responsibility for emergency response is assigned.	☐
1b	The response organization has the staff to respond and to augment staff on a continuing basis (24-7 staffing) in accordance with the emergency plan.	☐
2	10 CFR 50.47(b)(2) Onsite Emergency Organization	
2a	Process ensures that onshift emergency response responsibilities are staffed and assigned	☐
2b	The process for timely augmentation of onshift staff is established and maintained.	☐
3	10 CFR 50.47(b)(3) Emergency Response Support and Resources	
3a	Arrangements for requesting and using off site assistance have been made.	☐
3b	State and local staff can be accommodated at the EOF in accordance with the emergency plan. (NA for CR3)	☐
4	10 CFR 50.47(b)(4) Emergency Classification System	
4a	A standard scheme of emergency classification and action levels is in use. (Requires final approval of Screen and Evaluation by EP CFAM.)	☐
5	10 CFR 50.47(b)(5) Notification Methods and Procedures	
5a	Procedures for notification of State and local governmental agencies are capable of initiating notification of the declared emergency within 15 minutes (30 minutes for CR3) after declaration of an emergency and providing follow-up notification.	☐
5b	Administrative and physical means have been established for alerting and providing prompt instructions to the public within the plume exposure pathway. (NA for CR3)	☐
5c	The public ANS meets the design requirements of FEMA-REP-10, Guide for Evaluation of Alert and Notification Systems for Nuclear Power Plants, or complies with the licensee's FEMA-approved ANS design report and supporting FEMA approval letter. (NA for CR3)	☐

10 CFR 50.54(q) Screening Evaluation Form

Part IV. Emergency Planning Element and Function Screen (cont.)		
6	10 CFR 50.47(b)(6) Emergency Communications	
6a	Systems are established for prompt communication among principal emergency response organizations.	☐
6b	Systems are established for prompt communication to emergency response personnel.	☐
7	10 CFR 50.47(b)(7) Public Education and Information	
7a	Emergency preparedness information is made available to the public on a periodic basis within the plume exposure pathway emergency planning zone (EPZ). (NA for CR3)	☐
7b	Coordinated dissemination of public information during emergencies is established.	☐
8	10 CFR 50.47(b)(8) Emergency Facilities and Equipment	
8a	Adequate facilities are maintained to support emergency response.	☐
8b	Adequate equipment is maintained to support emergency response.	☐
9	10 CFR 50.47(b)(9) Accident Assessment	
9a	Methods, systems, and equipment for assessment of radioactive releases are in use.	☐
10	10 CFR 50.47(b)(10) Protective Response	
10a	A range of public PARs is available for implementation during emergencies. (NA for CR3)	☐
10b	Evacuation time estimates for the population located in the plume exposure pathway EPZ are available to support the formulation of PARs and have been provided to State and local governmental authorities. (NA for CR3)	☐
10c	A range of protective actions is available for plant emergency workers during emergencies, including those for hostile action events.	☐
10d	KI is available for implementation as a protective action recommendation in those jurisdictions that chose to provide KI to the public.	☐
11	10 CFR 50.47(b)(11) Radiological Exposure Control	
11a	The resources for controlling radiological exposures for emergency workers are established.	☐
12	10 CFR 50.47(b)(12) Medical and Public Health Support	
12a	Arrangements are made for medical services for contaminated, injured individuals.	☐
13	10 CFR 50.47(b)(13) Recovery Planning and Post-accident Operations	
13a	Plans for recovery and reentry are developed.	☐
14	10 CFR 50.47(b)(14) Drills and Exercises	
14a	A drill and exercise program (including radiological, medical, health physics and other program areas) is established.	☐
14b	Drills, exercises, and training evolutions that provide performance opportunities to develop, maintain, and demonstrate key skills are assessed via a formal critique process in order to identify weaknesses.	☐
14c	Identified weaknesses are corrected.	☐
15	10 CFR 50.47(b)(15) Emergency Response Training	
15a	Training is provided to emergency responders.	☐

10 CFR 50.54(q) Screening Evaluation Form

Part IV. Emergency Planning Element and Function Screen (cont.)		
16	10 CFR 50.47(b)(16) Emergency Plan Maintenance	
16a	Responsibility for emergency plan development and review is established.	☐
16b	Planners responsible for emergency plan development and maintenance are properly trained.	☐
PART IV. Conclusion If no Part IV criteria are checked, a 10 CFR 50.54(q) Effectiveness Evaluation is not required, then complete Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part V. Go to Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part VI for instructions describing the NRC required 30 day submittal.		X
If any Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part IV criteria are checked, then complete Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part V and perform a 10 CFR 50.54(q) Effectiveness Evaluation. Shaded block requires final approval of Screen and Evaluation by EP CFAM.		

Part V. Signatures:		
Preparer Name (Print): Renard O. Burris	Preparer Signature: R O Burris	Date: 7/18/17
Reviewer Name (Print): Randy Gibson	Reviewer Signature:	Date: 9/7/17
Approver (EP Manager Name (Print): Kevin L. Murray	Approver Signature: K. L. Murray	Date: 9-7-17
Approver (CFAM, as required) Name (Print) N/A	Approver Signature: N/A	Date: N/A

Part VI. NRC Emergency Plan and Implementing Procedure Submittal Actions	
Create two EREG General Assignments. • One for EP to provide the 10 CFR 50.54(q) summary of the analysis, or the completed 10 CFR 50.54(q), to Licensing.	x
• One for Licensing to submit the 10 CFR 50.54(q) information to the NRC within 30 days after the change is put in effect.	x

QA RECORD

H. Emergency Facilities and Equipment

H.1 Technical Support Center (TSC)/Operations Support Center (OSC)

H.1.a Control Room. The Control Room is utilized for evaluation and control of the initial phase of an emergency, including corrective actions and notification and activation of McGuire, Duke Energy, state and local emergency response organizations. The Control Room has redundant (telephone and alternate) two-way communications with emergency centers and off-site agencies. See Figure F-1 for communication scheme.

H.1.b Technical Support Center. (Figure H-1) The Technical Support Center (TSC) is utilized for evaluation of plant status by knowledgeable plant, vendor, NRC and other support groups during an emergency. This center will also be utilized to direct the on-site and initial off-site aspects of an emergency. Anticipated occupants are defined in Emergency Planning Group Manual Section 1.1, On-site Emergency Organization. The TSC has the following capabilities:

1. Redundant two-way communications with the Control Room, the OSC, the Emergency Operations Facility and the Nuclear Regulatory Commission Operations Center. See Figure F-2 for communication scheme.

2. Monitoring for direct radiation and airborne radioactive materials with local readout of radiation level and alarms if levels are exceeded.

3. Display, printout or trend record of comprehensive data necessary to monitor reactor system status and to evaluate plant system abnormalities, in-plant and off-site radiological parameters and meteorological parameters are available. This capability is provided via the operator aid computer. Capabilities to access and display parameters, individually or in groups is provided.

4. Ready access to as-built plant drawings such as general arrangements, flow diagrams, electrical one-lines, instrument details, etc.

5. Radiological habitability during postulated radiological accidents to the same degree as the Control Room.

6. Provisions for staffing by the Station Manager (Emergency Coordinator), advisors and representatives from the site as necessary. Room is also provided for NRC personnel. Space for up to 35 persons plus instrumentation displays are provided.

The TSC is located near the Control Room, on elevation 767, in the Service Building. The TSC is within one (1) minute walking distance from the Control Room. This is a permanent facility.

H.1.c Operations Support Center. (Figure H-2) The Operations Support Center (OSC) is that place designated for Operations, Radiation Protection, Chemistry, Maintenance, IAE, and others as necessary, to report to in an emergency condition. This center will be used to brief and prepare site personnel for work assignments in support of the emergency condition. The OSC is located on the Auxiliary Building roof office, elevation 784'. Workspace and resources are shared with the Outage Control Center (OCC). The OSC shall have priority over the OCC if any emergency is declared during an outage. The OSC has adequate capacity and supplies including provisions for respiratory protection, protective clothing, portable lighting, portable radiation monitoring equipment and communications equipment.

H.1.d Alternate Facilities. (Figures H-9 and H-10) Alternate TSC and OSC facilities have been established in the McGuire Admin Building as a contingency. Communications equipment similar to that provided in the designated TSC and OSC facilities is available but not all regulatory required equipment/capability is provided.

H.2 Emergency Operations Facility (EOF)

The Emergency Operations Facility (EOF) is utilized for direction and control of all emergency and recovery activities with emphasis on the coordination of off-site activities such as communications with local, state and federal agencies, and coordination of corporate and other outside support. Anticipated occupants are the EOF organization and appropriate state and federal agency representatives.

The EOF has the following capabilities:

a. The capability for obtaining and displaying plant data and radiological information for each reactor at a nuclear power reactor site and for each nuclear power reactor site that the facility serves.

b. The capability to analyze plant technical information and provide technical briefings on event conditions and prognosis to licensee and offsite response organizations for each reactor at a nuclear power reactor site and for each nuclear power reactor site that the facility serves.

c. The capability to support response to events occurring simultaneously at more than one nuclear power reactor site if the emergency operations facility serves more than one site.

The Common EOF in Charlotte serves as an alternate facility that would be accessible even if the site is under threat of or experiencing hostile action, to function as a staging area for augmentation of emergency response staff and having the following characteristics required collectively of the alternate facilities for use when onsite emergency facilities cannot be safely accessed during hostile action:

- The capability for communication with the emergency operations facility, control room, and plant security.
- The capability to perform offsite notifications.
- The capability for engineering assessment activities, including damage control team planning and preparation.

The EOF has redundant two-way communications with the Technical Support Center and appropriate off-site support agencies. (See Section F).

The EOF is located at 526 South Church Street, Charlotte, NC in the Energy Center Phase II, third floor (Rooms 0300, 0330, 0331, 0332, 0333, 0334, 0335, 0336, 0337, 0337-A, 0340, 0341, 0342, 0343, 0343-A, 0343-B, 0344 and 0345). The EOF layout and location are shown on Figures H-3 thru H-5.

The Joint Information Center and Media Center are utilized for the origination of news briefings and interviews. Anticipated staffing includes the News Group personnel, industry and government representatives and support personnel. News media personnel can be accommodated for press conferences, etc., in the Media Center. (See Figure H-6 and H-7.)

The Joint Information Center has two-way communications with the Emergency Operations Facility and corporate headquarters.

The Joint Information Center (JIC) is located in Duke's Energy Center, 526 South Church Street, Charlotte, N.C. The JIC is located on the first floor, room ECI-0111.

The facilities and resources in the JIC include:

- Work space
- Telephones
- Facsimile machines
- Copy machines
- Podium and PA system
- Tone alert radio
- TV monitor and VCR for real time viewing of the press conferences and taped review of news broadcasts from all three major networks
- Status board
- Wall charts dealing with nuclear site systems and evacuation zones
- Name tags
- Limited clerical support as needed
- Meals during long term activation
- Security escort to other JIC facilities as needed

The media center is located in Duke's Energy Center, 526 South Church Street, Charlotte, N.C. The center is located on the first floor in the O.J. Miller Auditorium.

The facilities and resources in the Media Center include:

- PA system and direct access to recording
- 18 telephones for news media
- Court recorders for prompt press conference transcripts
- Charts dealing with nuclear site systems and evacuation zones
- Modem/computer connections for the news media
- Overhead projector
- Slide projector
- Screen
- Press kits
- News releases
- Technical resources
- Security, registration and badging

H.3 State and Local Government Emergency Operations Centers

See County and State Plans.

H.4 Activation and Staffing

McGuire emergency centers (TSC, OSC) are activated as required by the appropriate Emergency Response Procedure. Activation of the TSC and OSC is required for Alert and above emergency conditions. Timely activation and staffing of the Emergency Operations Facility is important to allow the Nuclear Site staff the ability to correct the situation with minimal interference from outside organizations. The Emergency Coordinator will perform the role and function of the EOF Director until activation of the EOF has taken place. The EOF Organization will be alerted and staffed for Alert and higher emergency classifications. The EOF will be staffed using 75 minutes as a goal for the minimum staff to be in place and operational.

H.5 Assessment Actions

Onsite monitoring systems used to initiate emergency measures are defined in Section I. Those used for conducting assessment evaluations during any emergency condition are listed below:

H.5.a Meteorological. A description of the primary meteorological measurement facility is found in Appendix 2. These basic meteorological parameters are displayed in the Control Room, see Figure H-8, Generalized Meteorological System.

1. During periods of primary system unavailability, an alternate source of meteorological data is established as the NWS (NATIONAL WEATHER SERVICE) office. Wind direction and speed are from standard NWS instrumentation at conventional heights.

Wind direction from the NWS can replace the tower (60 m) wind direction. Wind speed from the NWS can replace the lower tower (10 m) wind speed for dose calculation purposes; it can also replace the tower (60 m) wind speed for transport speed considerations.

A monthly telephone contact, initiated by plant personnel, with the NWS office will be established to insure that this basic meteorological information can be accessed. See PT/0/A/4600/089.

2. The following field checks will be performed each week by plant personnel:

Wind Direction

(a) Recorder Time Accuracy
(b) Recorder Zero
(c) Translator Zero
(d) Translator Full Scale

Wind Speed

(a) Recorder Time Accuracy
(b) Recorder Zero
(c) Translator Zero
(d) Translator Full Scale

Delta - Temperature

(a) Recorder Time Accuracy

3. Onsite meteorological instruments will be calibrated at a frequency specified by Selective Licensee Commitments. During calibration periods, basic meteorological data, characteristic of site conditions, will be accessible from the NWS. These instruments will be calibrated in accordance with approved procedures.

Hydrologic

A hydrological description of the McGuire Nuclear Site is located in the MNS FSAR, Section 2.4.

Seismic

A description of the seismic monitoring instrumentation and area seismology studies are found in McGuire FSAR, Sections 3.7 and 2.5 respectively.

H.5.b Radiological Monitors

Radiological monitors including process monitors, area monitors, post-accident monitoring equipment, effluent monitors, personnel monitoring devices, portable monitors and sampling equipment are described in various Radiation Protection procedures, the McGuire FSAR, Emergency Plan Implementing Procedures and Safety Evaluation Report.

H.5.c. Plant Parameters

Equipment and instrumentation to monitor plant parameters such as reactor coolant pressure, temperature, levels, containment pressure, temperature, humidity, sump levels, hydrogen concentrations, system flow rates, status, line-ups, are included in operating and emergency procedures. Examples of specific instruments used for accident evaluation are given in Section I.

H.5.d Fire Detection

Fire detection devices of the ionization-chamber and thermal type are located throughout the site.

H.6 Data, Monitoring Equipment and Analysis Facilities

Provisions have been made and exist to obtain data from off-site agencies or monitoring equipment and analysis facilities. The provisions are described below:

a. Meteorological information is available from the National Weather Service as described in Section H.5.a. Monitoring of the Catawba River for hydrologic data is conducted within the Duke System of dams and hydro-electric facilities. Seismic data is available from the U.S. Geological Survey Office as provided for in the McGuire Procedure RP/0/A/5700/007 (Earthquake).

b. Radiological monitors for emergency environmental monitoring are provided in emergency kits. The established environmental monitoring network and sampling equipment in the surrounding area are also available to provide emergency assessment data. Environmental Radiological Monitoring equipment includes radioiodine and particulate continuous air samplers and thermoluminescent dosimeters. The thermoluminescent dosimeters are posted and collected in accordance with Table 1, Branch Technical Position, Rev. 1 of November, 1979. Emergency Planning Implementing Procedure, HP/0/B/1009/023 (Environmental Monitoring for Emergency Conditions) lists locations of posted thermoluminescent dosimeters and air samplers.

c. See Section C.3.

H.7 Offsite Radiological Monitoring

As described in H.6.b above.

H.8 Meteorology Instrumentation and Procedures

See Section H.5.a.

H.9 Operations Support Center

See Section H.1.c.

H.10 Emergency Equipment/Instrumentation Inspection, Inventory, Operational Check, Calibration

McGuire Procedure PT/0/A/4600/088, Functional Check of Emergency Vehicle and Equipment, defines the inspection, inventory and operational checks required of emergency equipment. Various Radiation Protection procedures define the criteria for calibration of all monitoring equipment located in the emergency kits.

H.11 Emergency Kits

Radiological Emergency kits are described in PT/0/A/4600/088, Functional Check of Emergency Vehicle and Equipment.

H.12 Receipt and Analysis of Field Monitoring Data

Duke Energy's Emergency Operations Facility (Radiological Assessment Manager) will be the central point for the receipt of off-site monitoring data results and sample media analysis results collected by Duke personnel. Resources exist within the organization to evaluate the information and make recommendations based upon the evaluations. The Radiological Assessment Manager's group will perform these evaluations and make recommendations to the EOF Director for protective actions. The EOF Director is the individual responsible for making protective action recommendations to off-site agencies after activation of the EOF.

McGuire Technical Support Center Layout
Figure H-1

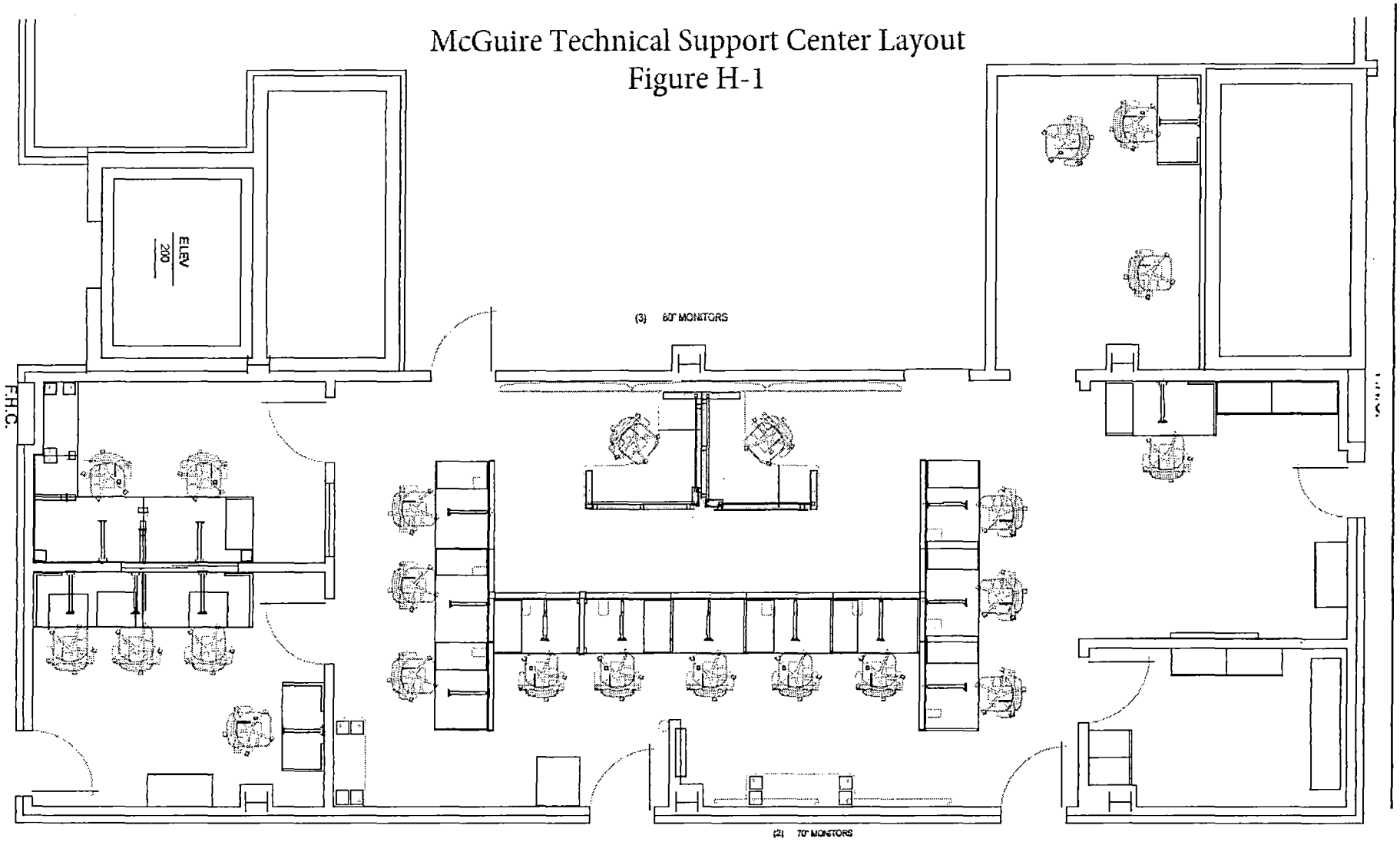


FIGURE H-2

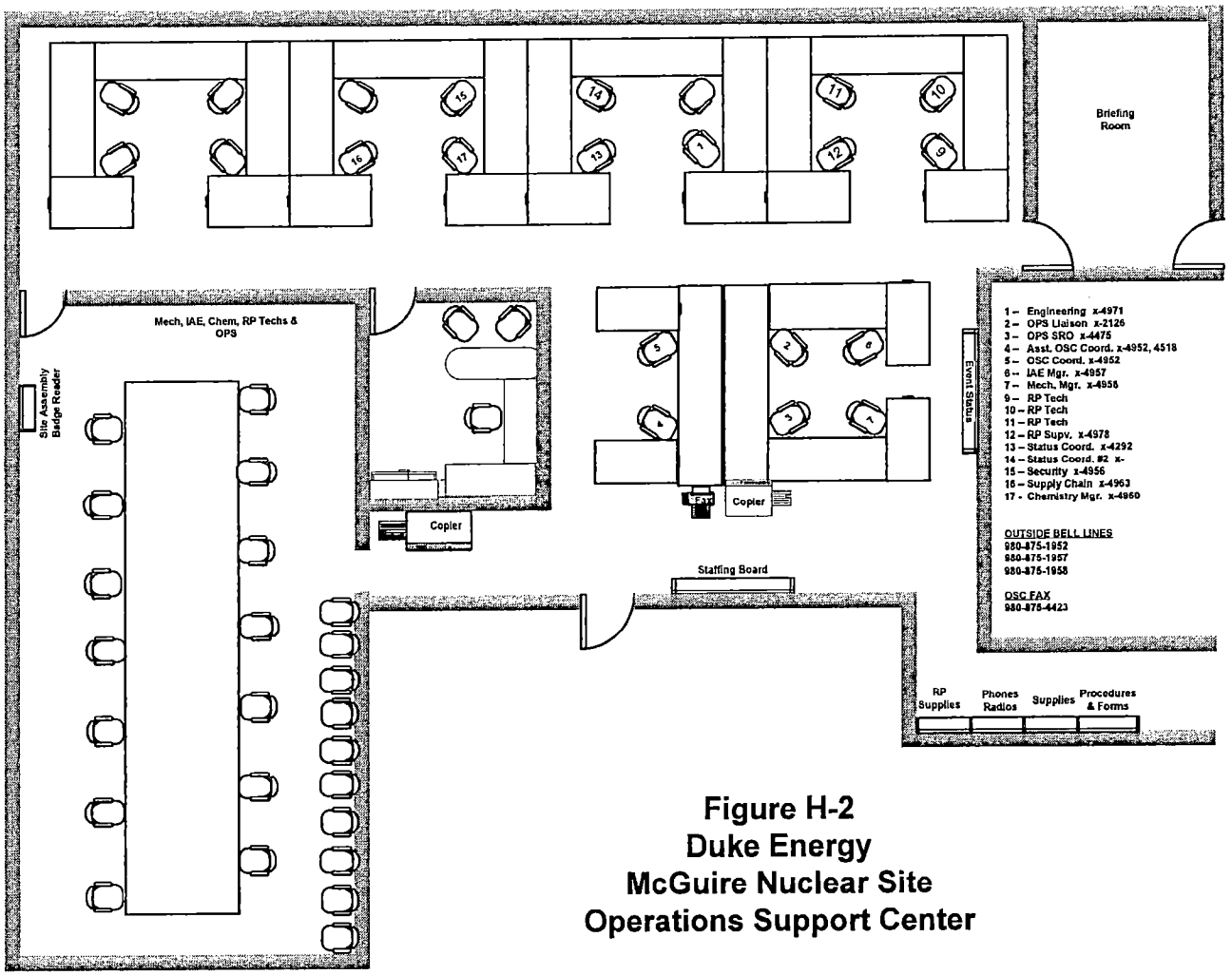
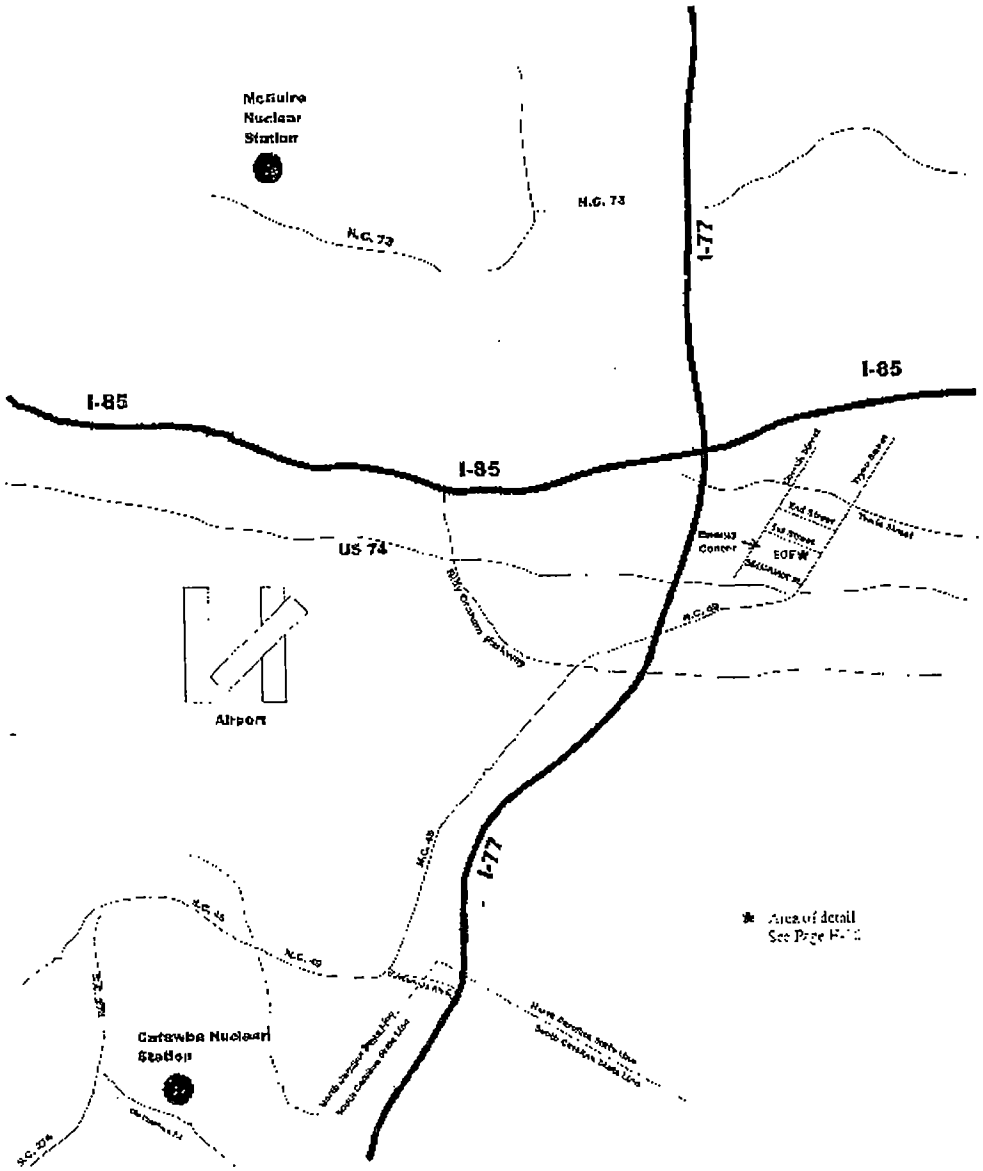


Figure H-2
Duke Energy
McGuire Nuclear Site
Operations Support Center

FIGURE H-3
DUKE ENERGY
EMERGENCY RESPONSE
MNS/CNS/ONS EOF
GENERAL LOCATION



The Media Center and Joint Information Center are in the Energy Center Phase I on the 1st floor. The EOF is in the Energy Center Phase II on the 3rd floor.

Figure H-4
DUKE ENERGY
GENERAL OFFICE RESPONSE
FACILITY

GENERAL OFFICE BUILDING LAYOUT - CHARLOTTE, NC

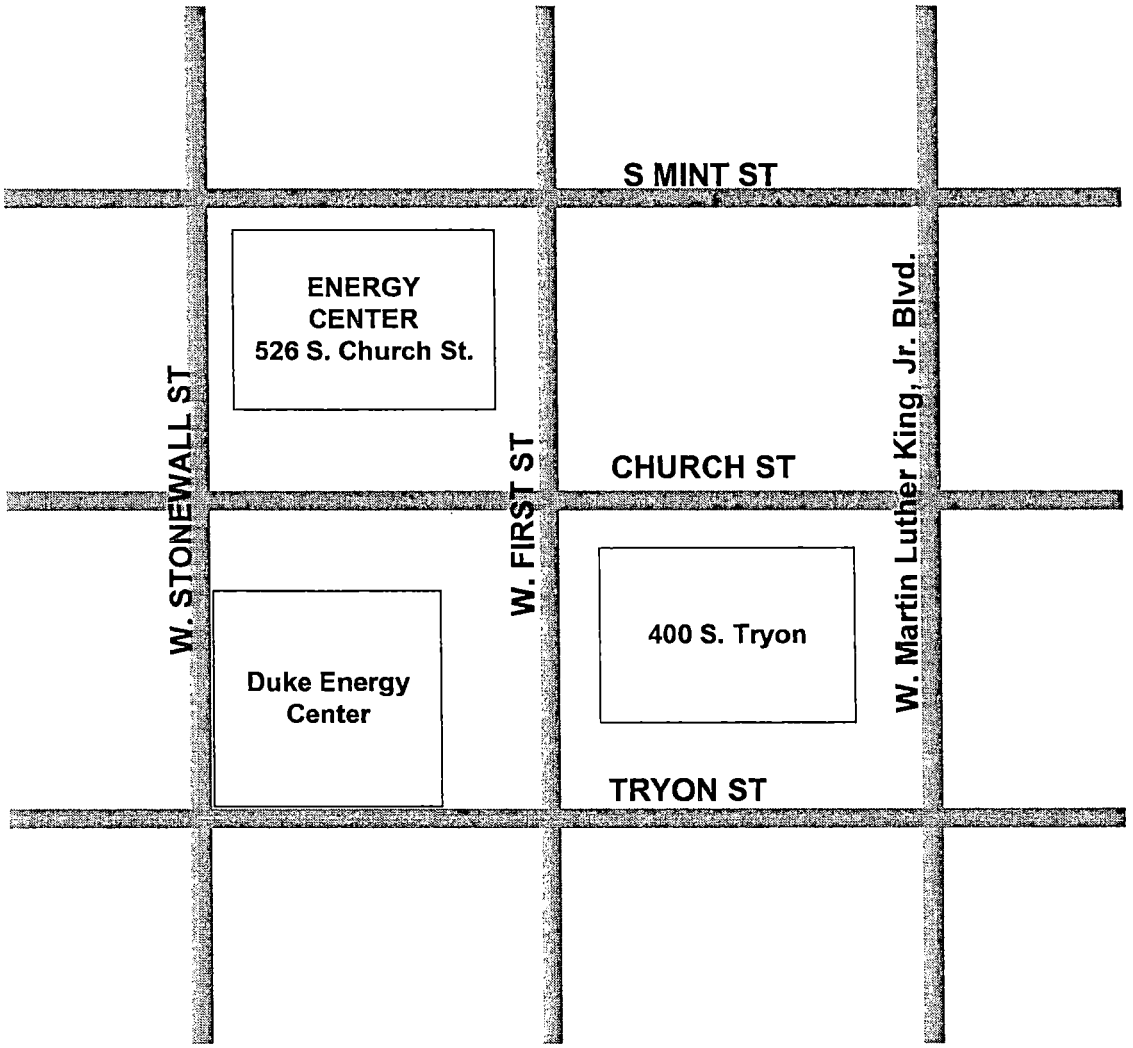


FIGURE H-5
Emergency Operations Facility
EOF GENERAL ARRANGEMENT

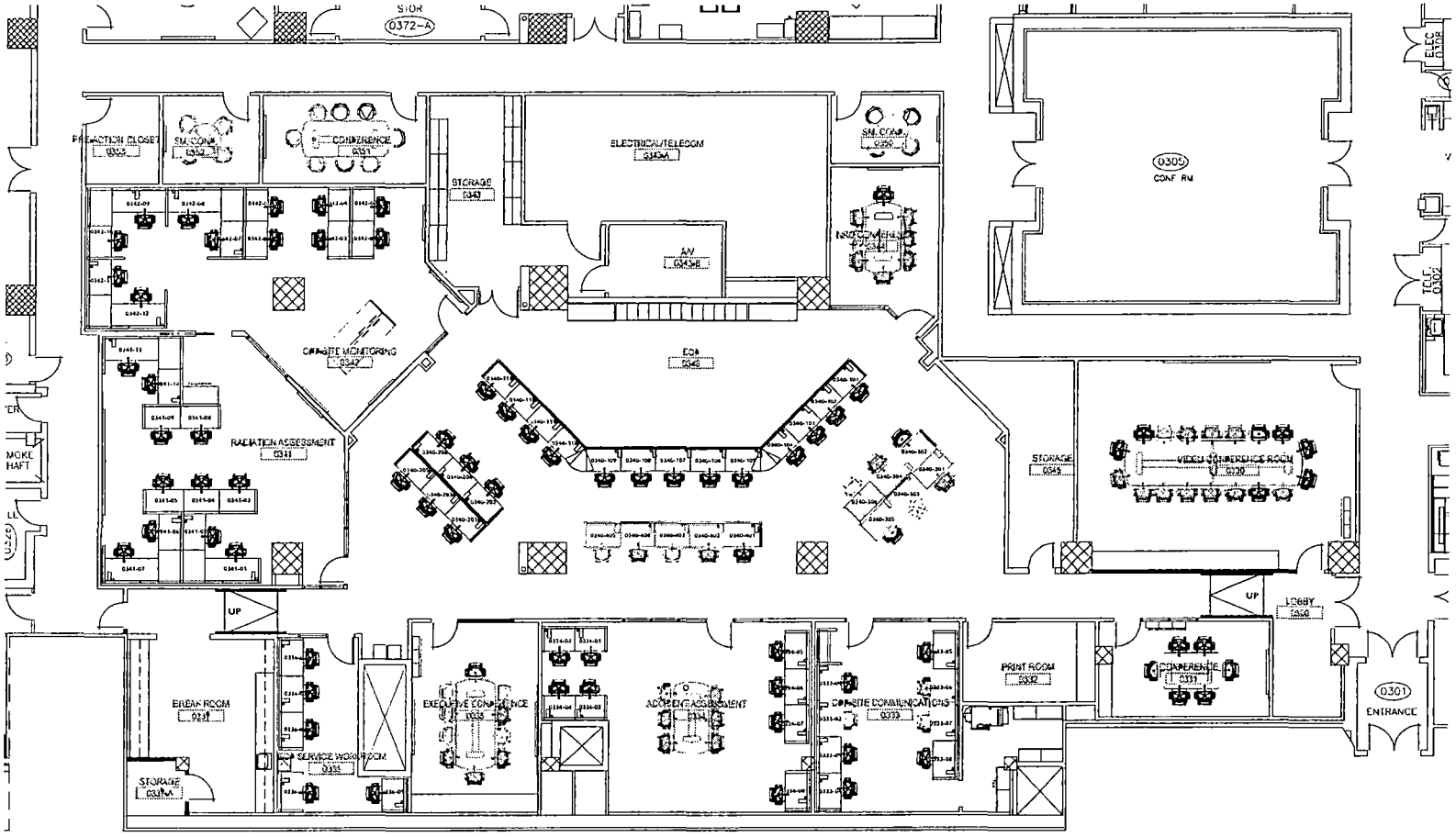


Figure H-6
Duke Energy
Media Center

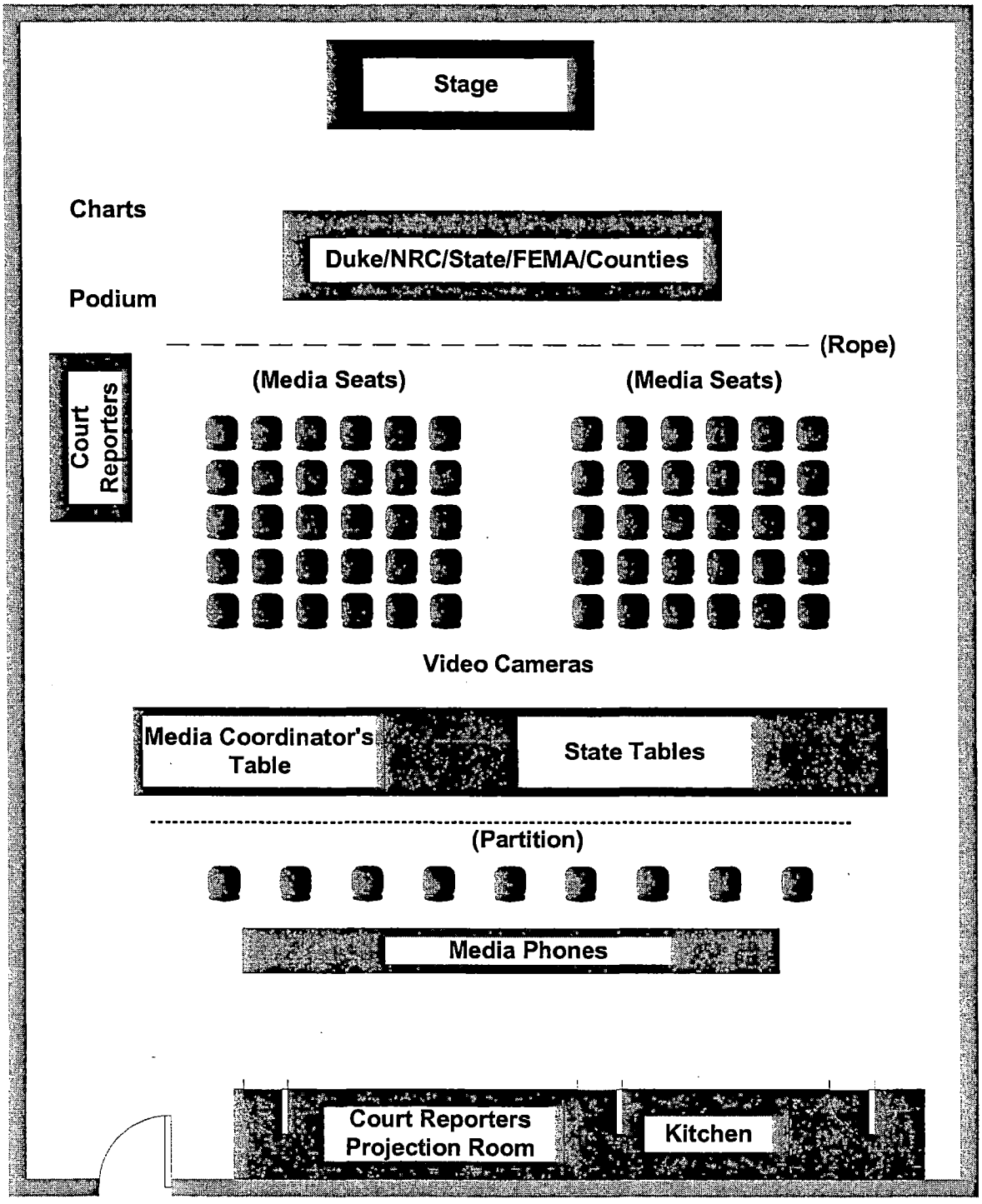


Figure H-7
Duke Energy
Joint Information Center

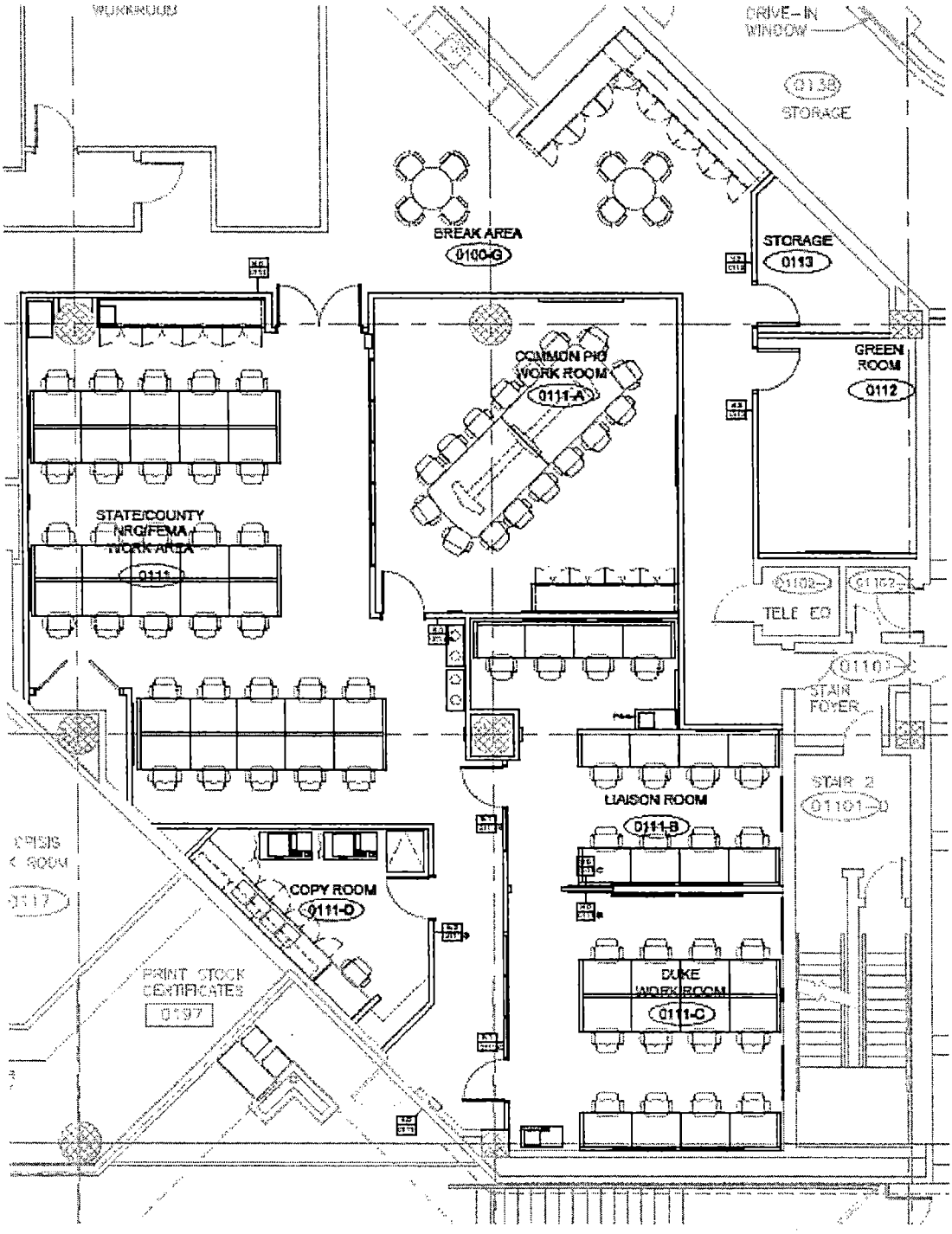


FIGURE H-8
McGuire and Catawba Nuclear Sites
Generalized Met System

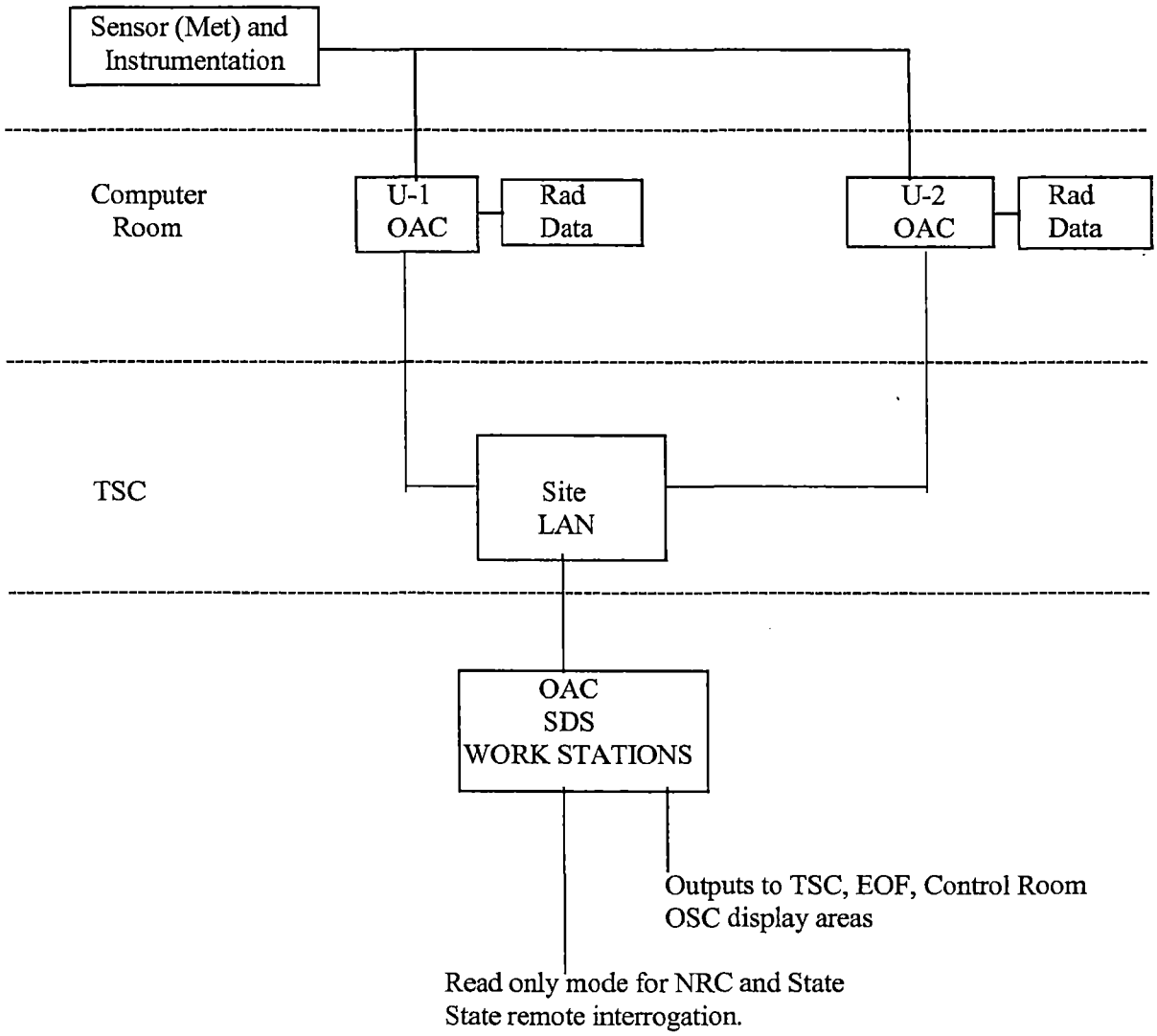
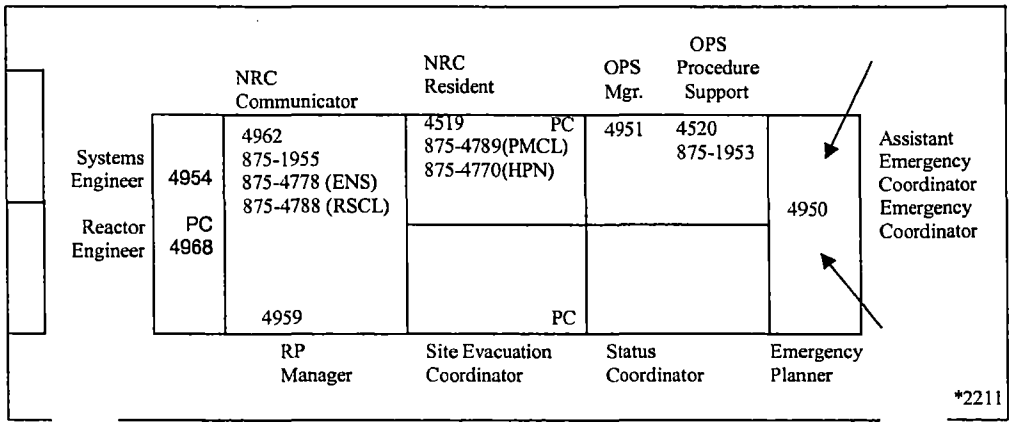


FIGURE H-9

MCGUIRE NUCLEAR SITE
ALTERNATE TECHNICAL SUPPORT CENTER
(EXECUTIVE BOARD ROOM, ROOM 111, ADMIN. BUILDING)



Other TSC Position Locations

- Site Evacuation Coordinator (EP Room 114) - *4458, *4977, *875-1951.
- Offsite Communicator (EP Room 115B -- *4970, DEMNET, *Radio, *875-1951.
- IAE Communicator (CBX Equipment Room 112) -- *4248.
- Data Coordinator (CBX Equipment Room 112) -- *4999.
- Dose Assessor (SCR Room 100D) -- *4405.
- Public Affairs (Rooms 118 and 141) -- *4400, *4419, *4233.
- NRC (NRC Office, Room 126) -- *875-1681.
- Other, use Jaguar Room as needed (Room 144) -- *4826.

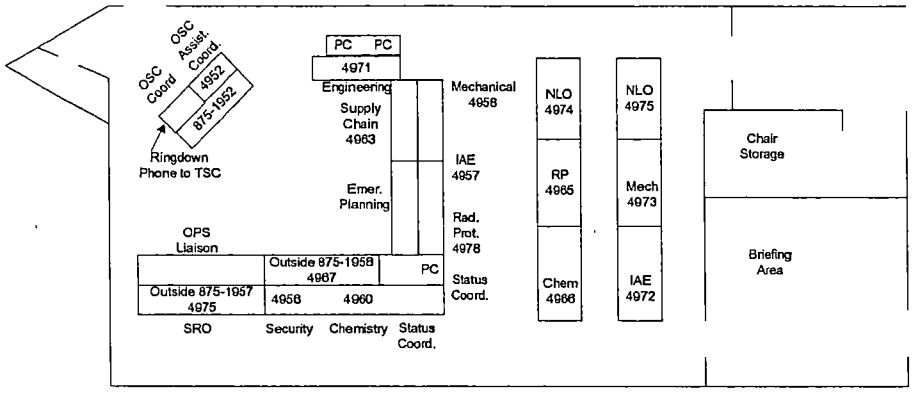
Office Equipment

- FAX (Mail Room, Room 116) -- *875-4506.
- FAX (EP Room 114) -- *875-4382.
- Copier (Mail Room, Room 116).
- Copier (SA Room 170).
- CBX (CBX Office in Admin. Building Lobby).

* Indicates existing phones. All others are to be plugged in when the Alternate TSC is activated.

FIGURE H-10

MCGUIRE NUCLEAR SITE
ALTERNATE OPERATIONS SUPPORT CENTER
(TRAINING ROOM TR155, ADMIN. BUILDING)



Office Equipment

- FAX, Mail Room, Room 116 -- *875-4506.
- FAX, EP, Room 114 -- *875-4382.
- Copier, Mail Room, Room 116.
- Copier, SA, Room 170.
- CBX, CBX Office in Lobby.

* Indicates existing phone. All others are to be plugged in when the Alternate OSC is activated.

10 CFR 50.54(q) Screening Evaluation Form

Screening and Evaluation Number	Applicable Sites	
EREG #: 2116601	BNP	☐
	CNS	☐
	CR3	☐
	HNP	☐
5AD #: 2116600	MNS	x
	ONS	☐
	RNP	☐
	GO	☐

Document and Revision
MNS Emergency Plan Section I ACCIDENT ASSESSMENT rev 17-1

Part I. Description of Activity Being Reviewed (event or action, or series of actions that may result in a change to the emergency plan or affect the implementation of the emergency plan):

I.2.a. Post Accident Sampling
"The requirement to have reactor coolant and containment atmosphere post accident sample panels (PASS) has been deleted per NRC License Amendment 199/180 by letter dated September 17, 2001. As a result, Emergency Plan Implementing Procedures HP/1/B/1009/015, Unit 1 Nuclear Post-Accident Containment Air Sampling System Operating Procedure and HP/2/B/1009/015, Unit 2 Nuclear Post-Accident Containment Air Sampling System Operating Procedure have been deleted. These EPIPs were replaced by Radiation Protection group procedure HP/0/B/1009/032, Sampling Containment Atmosphere Under Accident Conditions. **HP/0/B/1009/032 is not an EPIP or a part of the EPLAN. It is listed in this paragraph for reference purposes only**. HP/0/B/1009/032 provides contingency methods for containment atmosphere sampling under accident conditions.
Also as a result of NRC License Amendment 199/180, OP/0/B/6200/090, PALSS Operation for Accident Sampling has been deleted from the EPLAN as an Emergency Plan Implementing Procedure. However, OP/0/B/6200/090 will be retained as a Chemistry group procedure to provide contingency methods for reactor coolant and containment sump sampling under accident conditions. **OP/0/B/6200/090 is not an EPIP or a part of the EPLAN. It is listed in this paragraph for reference purposes only**."

Changed to

"HP/0/B/1009/032 (Sampling Containment Atmosphere Under Accident Conditions) provides contingency methods for containment atmosphere sampling under accident conditions. HP/0/B/1009/032 is only referenced for information only and is NOT an EPIP nor part of the MNS Emergency Plan.

OP/1/A/6200/128 (Unit 1 Primary Systems Emergency Response Sampling) and OP/2/A/6200/128 (Unit 2 Primary Systems Emergency Response Sampling) provides contingency methods for reactor coolant sampling under accident conditions. OP/1/A/6200/128 and OP/2/A/6200/128 are only referenced for

10 CFR 50.54(q) Screening Evaluation Form

information only and are NOT EPIPs nor part of the MNS Emergency Plan."

Reason for change: JGB 8/22/17
Information about NRC License Amendment 199/180 was deleted. Information about HP/1/B/1009/015 and HP/2/B/1009/015 ~~was deleted~~ was deleted and replaced by existing procedure HP/0/B/1009/032 (Sampling Containment Atmosphere Under Accident Conditions). OP/0/B/6200/090 was deleted and replaced by existing procedures OP/1/A/6200/128 and OP/~~1~~/A/6200/128.
2 JGB 8/22/17

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 199 to Facility Operating License NPF-9 and Amendment No. 180 to Facility Operating License NPF-17 for the McGuire Nuclear Station, Units 1 and 2. The amendments consist of changes to the Facility Operating License and the Technical Specifications in response to your application dated July 2, 2001.

Within these Amendments states :
As described in its safety evaluations for the topical reports, the staff finds that the following PASS sampling requirements may be eliminated for plants of Combustion Engineering and Westinghouse designs:
1. reactor coolant dissolved gases
2. reactor coolant hydrogen
3. reactor coolant oxygen
4. reactor coolant pH
5. reactor coolant chlorides
6. reactor coolant boron
7. reactor coolant conductivity
8. reactor coolant radionuclides
9. containment atmosphere hydrogen concentration
10. containment oxygen
11. containment atmosphere radionuclides
12. containment sump pH
13. containment sump chlorides
14. containment sump boron
15. containment sump radionuclides

The licensee has verified that it has the capability to monitor radioactive iodines that have been released to offsite environs. The capability is described in the licensee's emergency plan and applicable emergency procedures.

History of MNS Procedures:
OP/0/B/6200/090 PALSS Operation for Accident Sampling was deleted May 5 2003. OP/1/A/6200/011 (Unit 1 NM Sampling) Enclosures 4.4 (1EMF 48 Maintenance), Section 3.3 (1EMF 48 Return to Service), 4.5

10 CFR 50.54(q) Screening Evaluation Form

(1NC Hot Leg), 4.6 (1NC Hot Leg with KC Non-essential Header Isolated), and 4.10 (1NV Letdown heat Exchanger Outlet (BIX) were used to sample Unit 1 reactor coolant. OP/2/A/6200/011 (Unit 2 NM Sampling) Enclosures 4.4 (2EMF 48 Maintenance), Section 3.3 (2EMF 48 Return to Service), 4.5 (2NC Hot Leg), 4.6 (2NC Hot Leg with KC Non-essential Header Isolated), and 4.10 (2NV Letdown heat Exchanger Outlet (BIX) were used to sample Unit 2 reactor coolant.

OP/1/A/6200/128 Unit 1 Primary Systems Emergency Response Sampling was created in March 2009 to replace OP/1/A/6200/011 (Unit 1 NM Sampling) Enclosures 4.4 (1EMF 48 Maintenance), Section 3.3 (1EMF 48 Return to Service), 4.5 (1NC Hot Leg), 4.6 (1NC Hot Leg with KC Non-essential Header Isolated), and 4.10 (1NV Letdown heat Exchanger Outlet (BIX).

OP/2/A/6200/128 Unit 2 Primary Systems Emergency Response Sampling was created in March 2009 to replace OP/2/A/6200/011 (Unit 2 NM Sampling) Enclosures 4.4 (2EMF 48 Maintenance), Section 3.3 (2EMF 48 Return to Service), 4.5 (2NC Hot Leg), 4.6 (2NC Hot Leg with KC Non-essential Header Isolated), and 4.10 (2NV Letdown heat Exchanger Outlet (BIX).

(03/03/2009) HP/0/B/1009/032 (Sampling Containment Atmosphere Under Accident Conditions) was created as a new procedure to be used for ERO Sampling and provides contingency methods for containment atmosphere sampling under accident conditions. (DT MNS-2009-001000)

Part II. Activity Previously Reviewed?	Yes	X	No	

10 CFR 50.54(q) Screening Evaluation Form

Is this activity Fully bounded by an NRC approved 10 CFR 50.90 submittal or Alert and Notification System Design Report? If yes, identify bounding source document number or approval reference and ensure the basis for concluding the source document fully bounds the proposed change is documented below: Justification: September 17 2001 letter from Robert E Martin to Brew Barron. McGUIRE NUCLEAR STATION, UNITS IAND 2 - ISSUANCE OF AMENDMENTS RE: ELIMINATION OF POST ACCIDENT SAMPLING REQUIREMENTS (TAC NOS. MB2307 AND MB2308) The Nuclear Regulatory Commission has issued the enclosed Amendment No. 199 to Facility Operating License NPF-9 and Amendment No. 180 to Facility Operating License NPF-17 for the McGuire Nuclear Station, Units 1 and 2. The amendments consist of changes to the Facility Operating License and the Technical Specifications in response to your application dated July 2, 2001. The amendments delete Technical Specifications (TS) Section 5.5.4, "Post Accident Sampling," for McGuire Nuclear Station, Units 1 and 2, and thereby eliminate the requirements to have and maintain the post-accident sampling systems (PASS). The amendments also delete PASSrelated License Conditions 2.C(l I)c, "Post Accident Sampling (ll.B.3)," for Unit 1 and 2.C(lO)b, "Postaccident Sampling (ll.B.3)," for Unit 2. A copy of the related Safety Evaluation is also enclosed. A Notice of Issuance will be included in the Commission's biweekly Federal Regisrer notice. Docket Nos. 50-369 and 50-370 Enclosures: 1. Amendment No. 199 to NPF-9 2. Amendment No. 180 to NPF-17 3. Safety Evaluation 1. Amendment No. 199 to NPF-9 2. Amendment No. 180 to NPF-17 3. Safety Evaluation	10 CFR 50.54(q) Effectiveness Evaluation is not required. Enter justification below and complete Attachment 4, Part V.	Continue to Attachment 4 , 10 CFR 50.54(q) Screening Evaluation Form, Part III

10 CFR 50.54(q) Screening Evaluation Form

Bounding document attached (optional) see 0220029.pdf in E-Folder	X

Part III. Editorial Change	Yes ☐	No
Is this activity an editorial or typographical change only, such as formatting, paragraph numbering, spelling, or punctuation that does not change intent? Justification:	10 CFR 50.54(q) Effectiveness Evaluation is not required. Enter justification and complete Attachment 4, Part V & VI.	Continue to Attachment 4, Part IV and address non editorial changes

Part IV. Emergency Planning Element and Function Screen (Reference Attachment 1, Considerations for Addressing Screening Criteria)

Does this activity involve any of the following, including program elements from NUREG-0654/FEMA REP-1 Section II? If answer is yes, then check box.

1	10 CFR 50.47(b)(1) Assignment of Responsibility (Organization Control)	
1a	Responsibility for emergency response is assigned.	☐
1b	The response organization has the staff to respond and to augment staff on a continuing basis (24-7 staffing) in accordance with the emergency plan.	☐
2	10 CFR 50.47(b)(2) Onsite Emergency Organization	
2a	Process ensures that onshift emergency response responsibilities are staffed and assigned	☐
2b	The process for timely augmentation of onshift staff is established and maintained.	☐
3	10 CFR 50.47(b)(3) Emergency Response Support and Resources	
3a	Arrangements for requesting and using off site assistance have been made.	☐
3b	State and local staff can be accommodated at the EOF in accordance with the emergency plan. (NA for CR3)	☐
4	10 CFR 50.47(b)(4) Emergency Classification System	
4a	A standard scheme of emergency classification and action levels is in use. (Requires final approval of Screen and Evaluation by EP CFAM.)	☐
5	10 CFR 50.47(b)(5) Notification Methods and Procedures	
5a	Procedures for notification of State and local governmental agencies are capable of initiating notification of the declared emergency within 15 minutes (30 minutes for CR3) after declaration of an emergency and providing follow-up notification.	☐
5b	Administrative and physical means have been established for alerting and providing prompt instructions to the public within the plume exposure pathway. (NA for CR3)	☐
5c	The public ANS meets the design requirements of FEMA-REP-10, Guide for Evaluation of Alert and Notification Systems for Nuclear Power Plants, or complies with the licensee's FEMA-approved ANS design report and supporting FEMA approval letter. (NA for CR3)	☐

10 CFR 50.54(q) Screening Evaluation Form

Part IV. Emergency Planning Element and Function Screen (cont.)		
6	10 CFR 50.47(b)(6) Emergency Communications	
6a	Systems are established for prompt communication among principal emergency response organizations.	☐
6b	Systems are established for prompt communication to emergency response personnel.	☐
7	10 CFR 50.47(b)(7) Public Education and Information	
7a	Emergency preparedness information is made available to the public on a periodic basis within the plume exposure pathway emergency planning zone (EPZ). (NA for CR3)	☐
7b	Coordinated dissemination of public information during emergencies is established.	☐
8	10 CFR 50.47(b)(8) Emergency Facilities and Equipment	
8a	Adequate facilities are maintained to support emergency response.	☐
8b	Adequate equipment is maintained to support emergency response.	☐
9	10 CFR 50.47(b)(9) Accident Assessment	
9a	Methods, systems, and equipment for assessment of radioactive releases are in use.	☐
10	10 CFR 50.47(b)(10) Protective Response	
10a	A range of public PARs is available for implementation during emergencies. (NA for CR3)	☐
10b	Evacuation time estimates for the population located in the plume exposure pathway EPZ are available to support the formulation of PARs and have been provided to State and local governmental authorities. (NA for CR3)	☐
10c	A range of protective actions is available for plant emergency workers during emergencies, including those for hostile action events.	☐
10d	KI is available for implementation as a protective action recommendation in those jurisdictions that chose to provide KI to the public.	☐
11	10 CFR 50.47(b)(11) Radiological Exposure Control	
11a	The resources for controlling radiological exposures for emergency workers are established.	☐
12	10 CFR 50.47(b)(12) Medical and Public Health Support	
12a	Arrangements are made for medical services for contaminated, injured individuals.	☐
13	10 CFR 50.47(b)(13) Recovery Planning and Post-accident Operations	
13a	Plans for recovery and reentry are developed.	☐
14	10 CFR 50.47(b)(14) Drills and Exercises	
14a	A drill and exercise program (including radiological, medical, health physics and other program areas) is established.	☐
14b	Drills, exercises, and training evolutions that provide performance opportunities to develop, maintain, and demonstrate key skills are assessed via a formal critique process in order to identify weaknesses.	☐
14c	Identified weaknesses are corrected.	☐
15	10 CFR 50.47(b)(15) Emergency Response Training	
15a	Training is provided to emergency responders.	☐

10 CFR 50.54(q) Screening Evaluation Form

Part IV. Emergency Planning Element and Function Screen (cont.)		
16	10 CFR 50.47(b)(16) Emergency Plan Maintenance	
16a	Responsibility for emergency plan development and review is established.	☐
16b	Planners responsible for emergency plan development and maintenance are properly trained.	☐
PART IV. Conclusion If no Part IV criteria are checked, a 10 CFR 50.54(q) Effectiveness Evaluation is not required, then complete Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part V. Go to Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part VI for instructions describing the NRC required 30 day submittal.		
If any Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part IV criteria are checked, then complete Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part V and perform a 10 CFR 50.54(q) Effectiveness Evaluation. Shaded block requires final approval of Screen and Evaluation by EP CFAM.		☐

Part V. Signatures:		
Preparer Name (Print): Randy Gibson	Preparer Signature:	Date: 7/27/17
Reviewer Name (Print): Renard O. Burris	Reviewer Signature:	Date: 8/22/17
Approver (EP Manager Name (Print): Kevin L. Murray	Approver Signature:	Date: 8-24-17
Approver (CFAM, as required) Name (Print) N/A	Approver Signature: N/A	Date: N/A

Part VI. NRC Emergency Plan and Implementing Procedure Submittal Actions	
Create two EREG General Assignments. • One for EP to provide the 10 CFR 50.54(q) summary of the analysis, or the completed 10 CFR 50.54(q), to Licensing.	x
• One for Licensing to submit the 10 CFR 50.54(q) information to the NRC within 30 days after the change is put in effect.	x

QA RECORD

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

September 17, 2001

Mr. H. B. Barron
Vice President, McGuire Site
Duke Energy Corporation
12700 Hagers Ferry Road
Huntersville, NC 28078-8985

SUBJECT: McGUIRE NUCLEAR STATION, UNITS 1AND 2 - ISSUANCE OF AMENDMENTS RE: ELIMINATION OF POST ACCIDENT SAMPLING REQUIREMENTS (TAC NOS. MB2307 AND MB2308)

Dear Mr. Barron:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 199 to Facility Operating License NPF-9 and Amendment No. 180 to Facility Operating License NPF-17 for the McGuire Nuclear Station, Units 1 and 2. The amendments consist of changes to the Facility Operating License and the Technical Specifications in response to your application dated July 2, 2001.

The amendments delete Technical Specifications (TS) Section 5.5.4, "Post Accident Sampling," for McGuire Nuclear Station, Units 1 and 2, and thereby eliminate the requirements to have and maintain the post-accident sampling systems (PASS). The amendments also delete PASS-related License Conditions 2.C(11)c, "Post Accident Sampling (II.B.3)," for Unit 1 and 2.C(10)b, "Postaccident Sampling (II.B.3)," for Unit 2.

A copy of the related Safety Evaluation is also enclosed. A Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

Robert Martin

Robert E. Martin, Senior Project Manager, Section 1
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-369 and 50-370

Enclosures:
1. Amendment No. 199 to NPF-9
2. Amendment No. 180 to NPF-17
3. Safety Evaluation

cc w/encl: See next page

cc:
Ms. Lisa F. Vaughn
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Charlotte, North Carolina 28201-1006

County Manager of
Mecklenburg County
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

DUKE ENERGY CORPORATION

DOCKET NO. 50-369

McGUIRE NUCLEAR STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 199
License No. NPF-9

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A The application for amendment to the McGuire Nuclear Station, Unit 1 (the facility), Facility Operating License No. NPF-9 filed by the Duke Energy Corporation (licensee) dated July 2, 2001, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations as set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, Facility Operating License No. NPF-9 is hereby amended by deleting License Condition 2.C(11)c as indicated in the attachment to this license amendment. In addition, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C(2) of Facility Operating License No. NPF-9 is hereby amended to read as follows:

   (2) Technical Specifications

   The Technical Specifications contained in Appendix A, as revised through Amendment No. 199 , are hereby incorporated into this license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 180 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Richard L. Emch, Jr., Chief, Section 1
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachments:
1. Facility Operating License
2. Technical Specification Changes

Date of Issuance: September 17, 2001

ATTACHMENT TO LICENSE AMENDMENT NO. 199

FACILITY OPERATING LICENSE NO. NPF-9

DOCKET NO. 50-369

Replace the following page of Facility Operating License NPF-9 with the attached revised page. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change

Remove	Insert
8	8

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove	Insert
5.5-2	5.5-2

As a reference, these conditions are further described in Supplement No. 4 to the SER (NUREG-0422), Appendix D, items 3b, 4a, 4f and 9b, respectively.

The licensee shall complete each of the following conditions to the satisfaction of the NRC by the times indicated. Each of the following conditions references the appropriate item in Section 22.3, "Full-Power Requirements", in SER Supplement 5, NUREG-0422:

a. NSSS Vendor Review Procedures (I.C.7)

Prior to exceeding 5% power, the licensee shall document that the Westinghouse review of the power ascension test procedures is complete.

b. Training During Low-Power Testing (I.G.1)

Prior to exceeding 5% power the licensee shall complete the required Special Tests and the low-power test training program. The results of the test program shall be provided to the NRC within 30 days.

c. Deleted

d. Training for Mitigating Core Damage (II.B.4)

Prior to exceeding 5% power the licensee shall complete training for mitigating core damage.

e. Auxiliary Feedwater System Evaluation (II.E.1.1)

Prior to exceeding 5% power the licensee shall complete performance testing of the auxiliary feedwater system pumps and shall submit a report within 30 days after all tests are completed.

f. Inadequate Core Cooling Instruments (II.F.2)

(1) The licensee shall install a reactor vessel water level instrumentation system prior to startup after the first refueling.

(2) Prior to exceeding 5% power the licensee shall install a full range in-core thermocouple temperature (2300° F) backup display; and

(3) The licensee shall upgrade the in-containment portion of the incore thermocouple system prior to startup following the first refueling outage, and shall provide a schedule for upgrade of the remainder of the system in the Regulatory Guide 1.97 Accident Monitoring Review Report submittal pursuant to NUREG 0737, Supplement 1.

5.5 Programs and Manuals

5.5.2 Containment Leakage Rate Testing Program (continued)

The peak calculated containment internal pressure for the design basis loss of coolant accident, P_a, is 14.8 psig. The maximum allowable containment leakage rate, L_a, at P_a, shall be 0.3% of containment air weight per day.

Leakage Rate acceptance criteria are:

a. Containment leakage rate acceptance criterion is $\leq 1.0\ L_a$. During the first plant startup following testing in accordance with this program, the leakage rate acceptance criteria are $< 0.75\ L_a$ for Type A tests.

The provisions of SR 3.0.2 do not apply to the test frequencies specified in the Containment Leakage Rate Testing Program.

The provisions of SR 3.0.3 are applicable to the Containment Leakage Rate Testing Program.

5.5.3 Primary Coolant Sources Outside Containment

This program provides controls to minimize leakage from those portions of systems outside containment that could contain highly radioactive fluids during a serious transient or accident to levels as low as practicable. The systems include Containment Spray, Safety Injection, Chemical and Volume Control, Nuclear Sampling, RHR, Boron Recycle, Refueling Water, Liquid Waste, and Waste Gas. The program shall include the following:

a. Preventive maintenance and periodic visual inspection requirements; and

b. Integrated leak test requirements for each system at refueling cycle intervals or less.

5.5.4 Deleted

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

DUKE ENERGY CORPORATION

DOCKET NO. 50-370

McGUIRE NUCLEAR STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 180
License No. NPF-17

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment to the McGuire Nuclear Station, Unit 2 (the facility), Facility Operating License No. NPF-17 filed by the Duke Energy Corporation (licensee) dated July 2, 2001, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations as set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

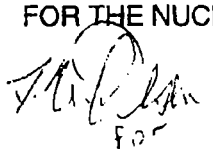
2. Accordingly, Facility Operating License No. NPF-17 is hereby amended by deleting License Condition 2.C(10)b as indicated in the attachment to this license amendment. In addition, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C(2) of Facility Operating License No. NPF-17 is hereby amended to read as follows:

   (2) Technical Specifications

   The Technical Specifications contained in Appendix A, as revised through Amendment No. 180, are hereby incorporated into this license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 180 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Richard L. Emch, Jr., Chief, Section 1
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachments:
1. Facility Operating License
2. Technical Specification Changes

Date of Issuance: September 17, 2001

ATTACHMENT TO LICENSE AMENDMENT NO. 180

FACILITY OPERATING LICENSE NO. NPF-17

DOCKET NO. 50-370

Replace the following page of Facility Operating License NPF-17 with the attached revised page. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change

Remove	Insert
6	6

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contains vertical lines indicating the areas of change.

Remove	Insert
5.5-2	5.5-2

b. Deleted

c. Inadequate Core Cooling Instruments (II.F.2)

1) Prior to startup following the first refueling outage, the licensee shall install a reactor vessel water level instrumentation system, and

2) Prior to startup following the first refueling outage, the licensee shall upgrade the in-containment portion of the incore thermocouple system and provide a schedule for update of the remainder of the system.

d. Anticipatory Reactor Trip (II.K.3.10)

Prior to exceeding 50% power the licensee shall complete the described turbine trip tests to verify that PORVs will not be challenged when the anticipatory trip bypass is in effect.

e. Hydrogen Control Measures (II.B.7)

1) Prior to startup following the first refueling outage, the licensee shall:

a. Install two additional igniter units in the containment lower compartment and four additional igniter units in the containment upper compartment in locations acceptable to the NRC staff.

b. Provide a means acceptable to the NRC staff of verifying the operational status of the hydrogen control system in the main control room.

c. Provide the capability to actuate the Hydrogen Mitigation System from the control room.

2) Operation of the hydrogen mitigation igniter system shall be activated upon a safety injection signal with accompanying indications of a loss of coolant accident.

f. Emergency Response Capability (I.C.1, I.D.1, I.D.2, III.A.1.2, III.A.2.2)

1) By April 15, 1983, the licensee shall submit a response to NRC generic letter 82-33, dated December 17, 1982, related to emergency response capabilities.

2) The licensee shall maintain interim emergency support facilities (Technical Support Center, Operations Support Center and the Emergency Operations Facility) until the upgraded facilities are completed.

5.5 Programs and Manuals

5.5.2 Containment Leakage Rate Testing Program (continued)

The peak calculated containment internal pressure for the design basis loss of coolant accident, P_a, is 14.8 psig. The maximum allowable containment leakage rate, L_a, at P_a, shall be 0.3% of containment air weight per day.

Leakage Rate acceptance criteria are:

a. Containment leakage rate acceptance criterion is $\leq 1.0\ L_a$. During the first plant startup following testing in accordance with this program, the leakage rate acceptance criteria are $< 0.75\ L_a$ for Type A tests.

The provisions of SR 3.0.2 do not apply to the test frequencies specified in the Containment Leakage Rate Testing Program.

The provisions of SR 3.0.3 are applicable to the Containment Leakage Rate Testing Program.

5.5.3 Primary Coolant Sources Outside Containment

This program provides controls to minimize leakage from those portions of systems outside containment that could contain highly radioactive fluids during a serious transient or accident to levels as low as practicable. The systems include Containment Spray, Safety Injection, Chemical and Volume Control, Nuclear Sampling, RHR, Boron Recycle, Refueling Water, Liquid Waste, and Waste Gas. The program shall include the following:

a. Preventive maintenance and periodic visual inspection requirements; and

b. Integrated leak test requirements for each system at refueling cycle intervals or less.

5.5.4 Deleted

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 199 TO FACILITY OPERATING LICENSE NPF-9

AND AMENDMENT NO. 180 TO FACILITY OPERATING LICENSE NPF-17

DUKE ENERGY CORPORATION

MCGUIRE NUCLEAR STATION, UNITS 1 AND 2

DOCKET NOS. 50-369 AND 50-370

1.0 INTRODUCTION

By letter dated July 2, 2001, Duke Energy Corporation, et al. (DEC, the licensee), submitted a request for changes to the McGuire Nuclear Station, Units 1 and 2, Facility Operating License and Technical Specifications (TS). The proposed changes would delete requirements associated with the Post Accident Sampling Systems (PASS).

In the aftermath of the accident at Three Mile Island (TMI), Unit 2, the Nuclear Regulatory Commission (NRC) imposed requirements on licensees for commercial nuclear power plants to install and maintain the capability to obtain and analyze post-accident samples of the reactor coolant and containment atmosphere. The desired capabilities of PASS were described in NUREG-0737, "Clarification of TMI Action Plan Requirements." The NRC issued orders to licensees with plants operating at the time of the TMI accident to confirm the installation of PASS capabilities (generally as they had been described in NUREG-0737). A requirement for PASS and related administrative controls was added to the TS of the operating plants and was included in the initial TS for plants licensed during the 1980s and 1990s. Additional expectations regarding PASS capabilities were included in Regulatory Guide 1.97, "Instrumentation for Light-Water-Cooled Nuclear Power Plants To Assess Plant and Environs Conditions During and Following an Accident."

Significant improvements have been achieved since the TMI accident in the areas of understanding risks associated with nuclear plant operations and developing better strategies for managing the response to potentially severe accidents at nuclear plants. Recent insights about plant risks and alternate severe accident assessment tools have led the NRC staff to conclude that some TMI Action Plan items can be revised without reducing the ability of licensees to respond to severe accidents. The NRC's efforts to oversee the risks associated with nuclear technology more effectively and to eliminate undue regulatory costs to licensees have prompted the NRC to consider eliminating the requirements for PASS in TS and other parts of the licensing bases of operating reactors.

The staff has completed its review of the topical reports submitted by the Combustion Engineering Owners Group (CEOG) and the Westinghouse Owners Group (WOG) that proposed the elimination of PASS. The justifications for the proposed elimination of PASS requirements center on evaluations of the various radiological and chemical sampling and their

potential usefulness in responding to a severe reactor accident or making decisions regarding actions to protect the public from possible releases of radioactive materials. As explained in more detail in the staff's safety evaluations for the two topical reports, the staff has reviewed the available sources of information for use by decision-makers in developing protective action recommendations and assessing core damage. Based on this review, the staff found that the information provided by PASS is either unnecessary or is effectively provided by other indications of process parameters or measurement of radiation levels. The staff agrees, therefore, with the owners groups that licensees can remove the TS requirements for PASS, revise (as necessary) other elements of the licensing bases, and pursue possible design changes to alter or remove existing PASS equipment.

2.0 BACKGROUND

In a letter dated May 5, 1999 (as supplemented by letter dated April 14, 2000), the CEOG submitted the topical report CE NPSD-1157, Revision 1, "Technical Justification for the Elimination of the Post-Accident Sampling System From the Plant Design and Licensing Bases for CEOG Utilities." A similar proposal was submitted on October 26, 1998 (as supplemented by letters dated April 28, 1999, April 10 and May 22, 2000), by the WOG in its topical report WCAP-14986, "Post Accident Sampling System Requirements: A Technical Basis." The reports provided evaluations of the information obtained from PASS samples to determine the contribution of the information to plant safety and accident recovery. The reports considered the progression and consequences of core damage accidents and assessed the accident progression with respect to plant abnormal and emergency operating procedures, severe accident management guidance, and emergency plans. The reports provided the owners groups' technical justifications for the elimination for the various PASS sampling requirements. The specific samples and the staff's findings are described in the following evaluation.

The NRC staff prepared a generic safety evaluation (SE) relating to the elimination of requirements on post accident sampling which included soliciting public comment (65 FR 49271) in accordance with the consolidated line item improvement process (CLIIP). The use of the CLIIP in this matter is intended to help the NRC to efficiently process amendments that propose to remove the PASS requirements from TS. Licensees of nuclear power reactors to which the generic SE apply were informed (65 FR 65018) that they could request amendments confirming the applicability of the SE to their reactors and providing the requested plant-specific verifications and commitments.

3.0 EVALUATION

The technical evaluations for the elimination of PASS sampling requirements are provided in the safety evaluations dated May 16, 2000, for the CEOG topical report CE NPSD-1157 and June 14, 2000, for the WOG topical report WCAP-14986. The NRC staff's safety evaluations approving the topical reports are located in the NRC's Agencywide Documents Access and Management System (ADAMS) (Accession Numbers ML003715250 for CE NPSD-1157 and ML003723268 for WCAP-14986).

The ways in which the requirements and recommendations for PASS were incorporated into the licensing bases of commercial nuclear power plants varied as a function of when plants were licensed. Plants that were operating at the time of the TMI accident are likely to have been the subject of confirmatory orders that imposed the PASS functions described in NUREG-0737 as

obligations. The issuance of plant specific amendments to adopt this change, which would remove PASS and related administrative controls from TS, supersede the PASS specific requirements imposed by post-TMI confirmatory orders.

As described in its safety evaluations for the topical reports, the staff finds that the following PASS sampling requirements may be eliminated for plants of Combustion Engineering and Westinghouse designs:

1. reactor coolant dissolved gases
2. reactor coolant hydrogen
3. reactor coolant oxygen
4. reactor coolant pH
5. reactor coolant chlorides
6. reactor coolant boron
7. reactor coolant conductivity
8. reactor coolant radionuclides
9. containment atmosphere hydrogen concentration
10. containment oxygen
11. containment atmosphere radionuclides
12. containment sump pH
13. containment sump chlorides
14. containment sump boron
15. containment sump radionuclides

The staff agrees that sampling of radionuclides is not required to support emergency response decision making during the initial phases of an accident because the information provided by PASS is either unnecessary or is effectively provided by other indications of process parameters or measurement of radiation levels. Therefore, it is not necessary to have dedicated equipment to obtain this sample in a prompt manner.

The staff does, however, believe that there could be significant benefits to having information about the radionuclides existing post-accident in order to address public concerns and plan for long-term recovery operations. As stated in the safety evaluations for the topical reports, the staff has found that licensees could satisfy this function by developing contingency plans to describe existing sampling capabilities and what actions (e.g., assembling temporary shielding) may be necessary to obtain and analyze highly radioactive samples from the reactor coolant system (RCS), containment sump, and containment atmosphere. (See item 4.1 under Licensee Verifications and Commitments.) These contingency plans must be available to be used by a licensee during an accident; however, these contingency plans do not have to be carried out in emergency plan drills or exercises. The contingency plans for obtaining samples from the RCS, containment sump, and containment atmosphere may also enable a licensee to derive information on parameters such as hydrogen concentrations in containment and boron concentration and pH of water in the containment sump. The staff considers the sampling of the containment sump to be potentially useful in confirming calculations of pH and boron concentrations and confirming that potentially unaccounted for acid sources have been sufficiently neutralized. The use of the contingency plans for obtaining samples would depend on the plant conditions and the need for information by the decision makers responsible for responding to the accident.

In addition, the staff considers radionuclide sampling information to be useful in classifying certain types of events (such as a reactivity excursion or mechanical damage) that could cause fuel damage without having an indication of overheating on core exit thermocouples. However, the staff agrees with the topical reports' contentions that other indicators of failed fuel, such as letdown radiation monitors (or normal sampling system), can be correlated to the degree of failed fuel. (See item 4.2 under Licensee Verifications and Commitments.)

In lieu of the information that would have been obtained from PASS, the staff believes that licensees should maintain or develop the capability to monitor radioactive iodines that have been released to offsite environs. Although this capability may not be needed to support the immediate protective action recommendations during an accident, the information would be useful for decision makers trying to limit the public's ingestion of radioactive materials. (See item 4.3 under Licensee Verifications and Commitments.)

The staff believes that the changes related to the elimination of PASS that are described in the topical reports, related safety evaluations and this proposed change to TS are unlikely to result in a decrease in the effectiveness of a licensee's emergency plan. Each licensee, however, must evaluate possible changes to its emergency plan in accordance with 10 CFR 50.54(q) to determine if the change decreases the effectiveness of its site-specific plan. Evaluations and reporting of changes to emergency plans should be performed in accordance with applicable regulations and procedures.

The staff notes that redundant, safety-grade, containment hydrogen concentration monitors are required by 10 CFR 50.44(b)(1), are addressed in NUREG-0737 Item II.F.1 and Regulatory Guide 1.97, and are relied upon to meet the data reporting requirements of 10 CFR Part 50, Appendix E, Section VI.2.a.(i)(4). The staff concludes that during the early phases of an accident, the safety-grade hydrogen monitors provide an adequate capability for monitoring containment hydrogen concentration. The staff sees value in maintaining the capability to obtain grab samples for complementing the information from the hydrogen monitors in the long term (i.e., by confirming the indications from the monitors and providing hydrogen measurements for concentrations outside the range of the monitors). As previously mentioned, the licensee's contingency plan (see item 4.1) for obtaining highly radioactive samples will include sampling of the containment atmosphere and may, if deemed necessary and practical by the appropriate decision makers, be used to supplement the safety-related hydrogen monitors.

The elimination of PASS requirements requires the elimination of License Condition 2.C(11)c in the Unit 1 operating license (NPF-9) and License Condition 2.C(10)b in the Unit 2 operating license (NPF-17). The changes are included in the licensee's application to revise the TS. The staff has reviewed the changes and agrees that the revisions are necessary due to the removal of the TS section on PASS. The changes do not revise technical requirements beyond that reviewed by the NRC staff in connection with the supporting topical reports or the preparation of the TS improvement incorporated into the CLIIP.

The elimination of PASS affects the discussion in the Bases section for TS 3.3.3(F.1), "Post Accident Monitoring Instrumentation". The current Bases mention the capabilities of PASS as part of the justification for allowing both hydrogen monitor channels to be out of service for a

period of up to 72 hours. Although the licensee's application included possible wording for the revised Bases discussion for TS 3.3.3, the licensee will formally address the change to the Bases in accordance with the Bases Control Program.

4.0 VERIFICATIONS AND COMMITMENTS

As requested by the staff in the notice of availability for this TS improvement, the licensee has addressed the following plant-specific verifications and commitments.

4.1 Each licensee should verify that it has, and make a regulatory commitment to maintain (or make a regulatory commitment to develop and maintain), contingency plans for obtaining and analyzing highly radioactive samples of reactor coolant, containment sump, and containment atmosphere.

The licensee has made a regulatory commitment to develop contingency plans for obtaining and analyzing highly radioactive samples of reactor coolant, containment sump, and containment atmosphere. The contingency plans will be contained in chemistry and radiation protection procedures and will be implemented within 180 days of the issuance of this license amendment.

4.2 Each licensee should verify that it has, and make a regulatory commitment to maintain (or make a regulatory commitment to develop and maintain), a capability for classifying fuel damage events at the Alert level threshold (typically this is 300 μCi/ml dose equivalent iodine). This capability may utilize the normal sampling system and/or correlations of sampling or letdown line dose rates to coolant concentrations.

The licensee has made a regulatory commitment to develop the capability for classifying fuel damage events at the Alert level threshold. This capability will be described in emergency plans and applicable emergency classification procedures and will be implemented within 180 days of the issuance of this license amendment.

4.3 Each licensee should verify that it has, and make a regulatory commitment to maintain (or make a regulatory commitment to develop and maintain), the capability to monitor radioactive iodines that have been released to offsite environs.

The licensee has verified that it has the capability to monitor radioactive iodines that have been released to offsite environs. The capability is described in the licensee's emergency plan and applicable emergency procedures.

The NRC staff finds that reasonable controls for the implementation and for subsequent evaluation of proposed changes pertaining to the above regulatory commitments are provided by the licensee's administrative processes, including its commitment management program. Should the licensee choose to incorporate a regulatory commitment into the emergency plan, final safety analysis report, or other document with established regulatory controls, the associated regulations would define the appropriate change-control and reporting requirements. The staff has determined that the commitments do not warrant the creation of regulatory requirements. The NRC staff has concluded that NEI 99-04, Revision 0, "Guidelines for Managing NRC Commitment Changes," provides reasonable guidance for the control of

regulatory commitments made to the NRC staff. (See Regulatory Issue Summary 2000-17, Managing Regulatory Commitments Made by Power Reactor Licensees to the NRC Staff, dated September 21, 2000.) The commitments should be controlled in accordance with the industry guidance or comparable criteria employed by a specific licensee. The staff may choose to verify the implementation and maintenance of these commitments in a future inspection or audit.

5.0 STATE CONSULTATION

In accordance with the Commission's regulations, the North Carolina State official was notified of the proposed issuance of the amendments. The State official had no comments.

6.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and change surveillance requirements. The NRC staff has determined that the amendments involve no significant increase in the amounts and no significant change in the types of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (66 FR 41616). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

7.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: W. Reckley

Date: September 17, 2001

10 CFR 50.54(q) Screening Evaluation Form

Screening and Evaluation Number	Applicable Sites	
EREG #: 2137580	BNP	☐
	CNS	☐
	CR3	☐
	HNP	☐
5AD #: 2137577	MNS	x
	ONS	☐
	RNP	☐
	GO	☐

Document and Revision
MNS Emergency Plan Section I ACCIDENT ASSESSMENT rev 17-1

Part I. Description of Activity Being Reviewed (event or action, or series of actions that may result in a change to the emergency plan or affect the implementation of the emergency plan):

I.5 Meteorological Information Availability

Meteorological information will be available to the Emergency Operations Facility, the Technical Support Center, the Control Room through use of the Station Operator Aid Computer (OAC) and by direct telephone communication.

Changed to

Meteorological information will be available to the Emergency Operations Facility, the Technical Support Center, the Control Room through use of the Station Operator Aid Computer (OAC) or by direct telephone communication.

Part II. Activity Previously Reviewed?	Yes		No	X

10 CFR 50.54(q) Screening Evaluation Form

Is this activity Fully bounded by an NRC approved 10 CFR 50.90 submittal or Alert and Notification System Design Report? If yes, identify bounding source document number or approval reference and ensure the basis for concluding the source document fully bounds the proposed change is documented below: Justification:	10 CFR 50.54(q) Effectiveness Evaluation is not required. Enter justification below and complete Attachment 4, Part V.	Continue to Attachment 4 , 10 CFR 50.54(q) Screening Evaluation Form, Part III
Bounding document attached (optional)		☐

Part III. Editorial Change Is this activity an editorial or typographical change only, such as formatting, paragraph numbering, spelling, or punctuation that does not change intent? Justification: This is an editorial change where "and" was changed to "or". This change does not change the intent of Section I of the MNS Emergency Plan.	Yes	X	No	
	10 CFR 50.54(q) Effectiveness Evaluation is not required. Enter justification and complete Attachment 4, Part V & VI.		Continue to Attachment 4, Part IV and address non editorial changes	

Part IV. Emergency Planning Element and Function Screen (Reference Attachment 1, Considerations for Addressing Screening Criteria)

Does this activity involve any of the following, including program elements from NUREG-0654/FEMA REP-1 Section II? If answer is yes, then check box.

1	10 CFR 50.47(b)(1) Assignment of Responsibility (Organization Control)	
1a	Responsibility for emergency response is assigned.	☐
1b	The response organization has the staff to respond and to augment staff on a continuing basis (24-7 staffing) in accordance with the emergency plan.	☐
2	10 CFR 50.47(b)(2) Onsite Emergency Organization	
2a	Process ensures that onshift emergency response responsibilities are staffed and assigned	☐
2b	The process for timely augmentation of onshift staff is established and maintained.	☐
3	10 CFR 50.47(b)(3) Emergency Response Support and Resources	
3a	Arrangements for requesting and using off site assistance have been made.	☐
3b	State and local staff can be accommodated at the EOF in accordance with the emergency plan. (NA for CR3)	☐
4	10 CFR 50.47(b)(4) Emergency Classification System	
4a	A standard scheme of emergency classification and action levels is in use. (Requires final approval of Screen and Evaluation by EP CFAM.)	☐
5	10 CFR 50.47(b)(5) Notification Methods and Procedures	

10 CFR 50.54(q) Screening Evaluation Form

5a	Procedures for notification of State and local governmental agencies are capable of initiating notification of the declared emergency within 15 minutes (30 minutes for CR3) after declaration of an emergency and providing follow-up notification.	☐
5b	Administrative and physical means have been established for alerting and providing prompt instructions to the public within the plume exposure pathway. (NA for CR3)	☐
5c	The public ANS meets the design requirements of FEMA-REP-10, Guide for Evaluation of Alert and Notification Systems for Nuclear Power Plants, or complies with the licensee's FEMA-approved ANS design report and supporting FEMA approval letter. (NA for CR3)	☐

Part IV. Emergency Planning Element and Function Screen (cont.)		
6	10 CFR 50.47(b)(6) Emergency Communications	
6a	Systems are established for prompt communication among principal emergency response organizations.	☐
6b	Systems are established for prompt communication to emergency response personnel.	☐
7	10 CFR 50.47(b)(7) Public Education and Information	
7a	Emergency preparedness information is made available to the public on a periodic basis within the plume exposure pathway emergency planning zone (EPZ). (NA for CR3)	☐
7b	Coordinated dissemination of public information during emergencies is established.	☐
8	10 CFR 50.47(b)(8) Emergency Facilities and Equipment	
8a	Adequate facilities are maintained to support emergency response.	☐
8b	Adequate equipment is maintained to support emergency response.	☐
9	10 CFR 50.47(b)(9) Accident Assessment	
9a	Methods, systems, and equipment for assessment of radioactive releases are in use.	☐
10	10 CFR 50.47(b)(10) Protective Response	
10a	A range of public PARs is available for implementation during emergencies. (NA for CR3)	☐
10b	Evacuation time estimates for the population located in the plume exposure pathway EPZ are available to support the formulation of PARs and have been provided to State and local governmental authorities. (NA for CR3)	☐
10c	A range of protective actions is available for plant emergency workers during emergencies, including those for hostile action events.	☐
10d	KI is available for implementation as a protective action recommendation in those jurisdictions that chose to provide KI to the public.	☐
11	10 CFR 50.47(b)(11) Radiological Exposure Control	
11a	The resources for controlling radiological exposures for emergency workers are established.	☐
12	10 CFR 50.47(b)(12) Medical and Public Health Support	
12a	Arrangements are made for medical services for contaminated, injured individuals.	☐
13	10 CFR 50.47(b)(13) Recovery Planning and Post-accident Operations	
13a	Plans for recovery and reentry are developed.	☐
14	10 CFR 50.47(b)(14) Drills and Exercises	

10 CFR 50.54(q) Screening Evaluation Form

14a	A drill and exercise program (including radiological, medical, health physics and other program areas) is established.	☐
14b	Drills, exercises, and training evolutions that provide performance opportunities to develop, maintain, and demonstrate key skills are assessed via a formal critique process in order to identify weaknesses.	☐
14c	Identified weaknesses are corrected.	☐
15	10 CFR 50.47(b)(15) Emergency Response Training	
15a	Training is provided to emergency responders.	☐

Part IV. Emergency Planning Element and Function Screen (cont.)		
16	10 CFR 50.47(b)(16) Emergency Plan Maintenance	
16a	Responsibility for emergency plan development and review is established.	☐
16b	Planners responsible for emergency plan development and maintenance are properly trained.	☐
PART IV. Conclusion If no Part IV criteria are checked, a 10 CFR 50.54(q) Effectiveness Evaluation is not required, then complete Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part V. Go to Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part VI for instructions describing the NRC required 30 day submittal.		☐
If any Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part IV criteria are checked, then complete Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part V and perform a 10 CFR 50.54(q) Effectiveness Evaluation. Shaded block requires final approval of Screen and Evaluation by EP CFAM.		☐

Part V. Signatures:		
Preparer Name (Print): Randy G. Gibson	Preparer Signature:	Date: 7/18/17
Reviewer Name (Print): Renard O. Burris	Reviewer Signature:	Date: 8/22/17
Approver (EP Manager Name (Print): Kevin L. Murray	Approver Signature:	Date: 8-24-17
Approver (CFAM, as required) Name (Print) N/A	Approver Signature: N/A	Date: N/A

Part VI. NRC Emergency Plan and Implementing Procedure Submittal Actions

10 CFR 50.54(q) Screening Evaluation Form

Create two EREG General Assignments. • One for EP to provide the 10 CFR 50.54(q) summary of the analysis, or the completed 10 CFR 50.54(q), to Licensing.	x
• One for Licensing to submit the 10 CFR 50.54(q) information to the NRC within 30 days after the change is put in effect.	x

QA RECORD

I. ACCIDENT ASSESSMENT

To assure the adequacy of methods, systems and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition.

I.1 Emergency Action Level Procedures

Emergency Action Level procedures have been established in accordance with NUMARC/NESP-007 (Rev. 2) that was approved by the NRC in Revision 3 of Regulatory Guide 1.101, and subsequent guidance provided in NRC Bulletin 2005-02, the guidance endorsed in RIS 2006-12 and to support implementation of NEI 03-12. See Bases Document in Section D.

Emergency Response Procedure, RP/0/A/5700/000, Classification of Emergency, will identify the system parameter and effluent parameter values which can be used to determine the emergency condition.

I.2 Onsite Capability and Resources to Provide Initial Values and Continuing Assessment

I.2.a. Post Accident Sampling

HP/0/B/1009/032 (Sampling Containment Atmosphere Under Accident Conditions) provides contingency methods for containment atmosphere sampling under accident conditions. HP/0/B/1009/032 is only referenced for information only and is NOT an EPIP nor part of the MNS Emergency Plan.

OP/1/A/6200/128 (Unit 1 Primary Systems Emergency Response Sampling) and OP/2/A/6200/128 (Unit 2 Primary Systems Emergency Response Sampling) provides contingency methods for reactor coolant sampling under accident conditions. OP/1/A/6200/128 and OP/2/A/6200/128 are only referenced for information only and are NOT EPIPs nor part of the MNS Emergency Plan.

I.2.b. Radiation and Effluent Monitors

Radiological monitoring capabilities include process and effluent monitoring systems (FSAR 11.4); area monitoring system (FSAR 12.1.4); plus station portable monitoring instruments, laboratory counters and analyzers (FSAR 12.3.2.4), including emergency high-range instruments and air samplers.

In addition, there are two (2) high range containment monitors, two (2) high range unit vent monitors, four (4) steam line monitors per unit and four (4) N-16 steam line monitors per unit.

I.2.c In-plant Iodine Instrumentation

Radioiodine sampling cartridges are used for sampling containments and unit vents. Radiation Protection personnel are knowledgeable in the appropriate site procedures required and are trained in the equipment required to determine airborne iodine concentrations in the plant under

all conditions. Procedures to determine airborne iodine concentrations will cover analyses to be done if counting room capabilities are not available.

I.3.a/ I.3.b Method For Determining Release Source Term

Procedures HP/0/B/1009/006, HP/0/B/1009/010 and AD-EP-ALL-0202 are used on shift, in the TSC and/or EOF for the calculation of potential off-site doses based on a Design Basis Accident, release of primary coolant, or release of GAP activity situation scaled to actual containment monitor readings. Provisions for use of actual source terms exist in the procedures.

The magnitude of the release is based on actual effluent monitoring readings, plant system parameters (containment pressure), area meteorology and the duration of the release.

I.4 Effluent Monitor Readings Vs Onsite/Offsite Exposure

The procedures referenced in I.3.a/I.3.b establish the relationship between effluent monitor readings and on-site/off-site exposures and contamination for various meteorological conditions.

I.5 Meteorological Information Availability

Meteorological information will be available to the Emergency Operations Facility, the Technical Support Center, the Control Room through use of the Station Operator Aid Computer (OAC) or by direct telephone communication. Meteorological information will be available to the NRC through the Emergency Response Data System (ERDS), Health Physics Network (HPN) or by direct telephone communications with the individual responsible for making off-site dose assessments either at the Technical Support Center or the Emergency Operations Facility.

Meteorological information will also be given to both the county Emergency Operations Centers and the State of North Carolina during initial and follow-up information via the message format in Figure E-1.

I.6 Release Rates/Projected Dose For Offscale Instrumentation

If instrumentation used for dose assessment is offscale or inoperable, dose rates within the Reactor Building will be determined using procedure HP/0/B/1009/002, Alternative Method for Determining Dose Rate Within the Reactor Building, or HP/0/B/1009/006, Procedure for Quantifying High Level Radioactivity Release During Accident Conditions.

I.7/ I.8 Field Monitoring Within E.P.Z.

Field monitoring within the McGuire Emergency Planning Zone will be performed in accordance with HP/0/B/1009/023, Environmental Monitoring for Emergency Conditions.

Two off-site field monitoring teams are comprised from site personnel and are under the direction of the Field Monitoring Coordinator. On-site monitoring is performed by Radiation Protection personnel under the direction of the OSC Radiation Protection Supervisor. HP/0/B/1009/023 describes how to obtain the vehicles to be used, routes to be used, sampling and monitoring equipment to be used, locations of TLD's and directions for taking KI tablets.

An emergency radio system is available for the field monitoring teams to use to relay information to the TSC/EOF. The state will be able to monitor the results of the field monitoring teams and relay results to the counties.

I.9 Detect and Measure Radioiodine Concentration in the EPZ

Air sampling results will be obtained through the use of a Portable Single Channel Analyzer and appropriate gamma sensitive detector. The air sample will be taken with a Portable Air Sampler equipped with a CP-100 or an acceptable charcoal cartridge and particulate filter.

Interference from the presence of noble gas and background radiation shall not decrease the minimum detectable activity of 1E-7 μCi/cc (microcuries per cubic centimeter) under field conditions.

These samples taken by the offsite monitoring teams will be evaluated further by one of the available laboratory facilities described in Section C.3. A multi-channel analyzer will be used to perform this evaluation.

I.10 Relationship Between Contamination Levels and Integrated Dose/Dose Rates

Provisions for relating contamination levels, water, and air to dose rates for key isotopes is found in HP/0/B/1009/021.

I.11 Plume Tracking

The state of North Carolina has arrangements to locate and track an airborne plume of radioactive materials. Duke Energy will have monitoring teams in the field, fixed TLD sites and the capability for airborne monitoring to assist in plume tracking.

<< 10 CFR 50.54(q) Screening Evaluation Form >>

Screening and Evaluation Number	Applicable Sites	
EREG #: 02148313	BNP	☐
	CNS	☐
	CR3	☐
	HNP	☐
5AD #: 02148311	MNS	☒
	ONS	☐
	RNP	☐
	GO	☐

Document and Revision

MNS Emergency Plan Section J (Protective Response) rev 17-1

Part I. Description of Activity Being Reviewed (event or action, or series of actions that may result in a change to the emergency plan or affect the implementation of the emergency plan):

Figure J-1 page 2 of 3 bottom right box changed "If projected dose exceeds 5-Rem Thyroid CDE" to "If projected dose is ≥ 5-Rem Thyroid CDE".

Part II. Activity Previously Reviewed?	Yes ☐	No ☒
Is this activity Fully bounded by an NRC approved 10 CFR 50.90 submittal or Alert and Notification System Design Report? If yes, identify bounding source document number or approval reference and ensure the basis for concluding the source document fully bounds the proposed change is documented below: Justification:	10 CFR 50.54(q) Effectiveness Evaluation is not required. Enter justification below and complete Attachment 4, Part V.	Continue to Attachment 4 , 10 CFR 50.54(q) Screening Evaluation Form, Part III

Bounding document attached (optional) ☐

<< 10 CFR 50.54(q) Screening Evaluation Form >>

Part III. Editorial Change	Yes	X	No	☐
Is this activity an editorial or typographical change only, such as formatting, paragraph numbering, spelling, or punctuation that does not change intent?	10 CFR 50.54(q) Effectiveness Evaluation is not required. Enter justification and complete Attachment 4, Part V & VI.		Continue to Attachment 4, Part IV and address non editorial changes	
Justification: JAB 9/5/17 This is an editorial change in to align this section of the PAR chart with Table 2 Protective Action Guides (PAGS), and the requirements for recommending KI for the initial PARs where the parameter is ≥ 5-Rem Thyroid CDE. This is also in compliance with EPA-400/R-17/001 PAG Manual. This change was made to correct Section J of the MNS Emergency Plan. The intent of Section J has not changed. This EPlan change DOES NOT impact any planning standard of 10 CFR 50.47(b) or any program elements from NUREG-0654/FEMA REP-1 Section II. This EPlan change DOES NOT impact any emergency planning function as set forth in the elements of Appendix E of 10CFR part 50. Therefore a 50.54(q) effectiveness evaluation is not required.				

Part IV. Emergency Planning Element and Function Screen (Reference Attachment 1, Considerations for Addressing Screening Criteria)

Does this activity involve any of the following, including program elements from NUREG-0654/FEMA REP-1 Section II? If answer is yes, then check box.

1	10 CFR 50.47(b)(1) Assignment of Responsibility (Organization Control)	
1a	Responsibility for emergency response is assigned.	☐
1b	The response organization has the staff to respond and to augment staff on a continuing basis (24-7 staffing) in accordance with the emergency plan.	☐
2	10 CFR 50.47(b)(2) Onsite Emergency Organization	
2a	Process ensures that onshift emergency response responsibilities are staffed and assigned	☐
2b	The process for timely augmentation of onshift staff is established and maintained.	☐
3	10 CFR 50.47(b)(3) Emergency Response Support and Resources	
3a	Arrangements for requesting and using off site assistance have been made.	☐
3b	State and local staff can be accommodated at the EOF in accordance with the emergency plan. (NA for CR3)	☐
4	10 CFR 50.47(b)(4) Emergency Classification System	
4a	A standard scheme of emergency classification and action levels is in use. (Requires final approval of Screen and Evaluation by EP CFAM.)	☐
5	10 CFR 50.47(b)(5) Notification Methods and Procedures	
5a	Procedures for notification of State and local governmental agencies are capable of alerting them of the declared emergency within 15 minutes (60 minutes for CR3) after declaration of an emergency and providing follow-up notification.	☐
5b	Administrative and physical means have been established for alerting and providing prompt instructions to the public within the plume exposure pathway. (NA for CR3)	☐

<< 10 CFR 50.54(q) Screening Evaluation Form >>

5c	The public ANS meets the design requirements of FEMA-REP-10, Guide for Evaluation of Alert and Notification Systems for Nuclear Power Plants, or complies with the licensee's FEMA-approved ANS design report and supporting FEMA approval letter. (NA for CR3)	☐

<< 10 CFR 50.54(q) Screening Evaluation Form >>

Part IV. Emergency Planning Element and Function Screen (cont.)		
6	10 CFR 50.47(b)(6) Emergency Communications.	
6a	Systems are established for prompt communication among principal emergency response organizations.	☐
6b	Systems are established for prompt communication to emergency response personnel.	☐
7	10 CFR 50.47(b)(7) Public Education and Information	
7a	Emergency preparedness information is made available to the public on a periodic basis within the plume exposure pathway emergency planning zone (EPZ). (NA for CR3)	☐
7b	Coordinated dissemination of public information during emergencies is established.	☐
8	10 CFR 50.47(b)(8) Emergency Facilities and Equipment	
8a	Adequate facilities are maintained to support emergency response.	☐
8b	Adequate equipment is maintained to support emergency response.	☐
9	10 CFR 50.47(b)(9) Accident Assessment	
9a	Methods, systems, and equipment for assessment of radioactive releases are in use.	☐
10	10 CFR 50.47(b)(10) Protective Response	
10a	A range of public PARs is available for implementation during emergencies. (NA for CR3)	☐
10b	Evacuation time estimates for the population located in the plume exposure pathway EPZ are available to support the formulation of PARs and have been provided to State and local governmental authorities. (NA for CR3)	☐
10c	A range of protective actions is available for plant emergency workers during emergencies, including those for hostile action events.	☐
10d	KI is available for implementation as a protective action recommendation in those jurisdictions that chose to provide KI to the public.	☐
11	10 CFR 50.47(b)(11) Radiological Exposure Control	
11a	The resources for controlling radiological exposures for emergency workers are established.	☐
12	10 CFR 50.47(b)(12) Medical and Public Health Support	
12a	Arrangements are made for medical services for contaminated, injured individuals.	☐
13	10 CFR 50.47(b)(13) Recovery Planning and Post-accident Operations	
13a	Plans for recovery and reentry are developed.	☐
14	10 CFR 50.47(b)(14) Drills and Exercises	
14a	A drill and exercise program (including radiological, medical, health physics and other program areas) is established.	☐
14b	Drills, exercises, and training evolutions that provide performance opportunities to develop, maintain, and demonstrate key skills are assessed via a formal critique process in order to identify weaknesses.	☐
14c	Identified weaknesses are corrected.	☐
15	10 CFR 50.47(b)(15) Emergency Response Training	
15a	Training is provided to emergency responders.	☐

<< 10 CFR 50.54(q) Screening Evaluation Form >>

Part IV. Emergency Planning Element and Function Screen (cont.)		
16	10 CFR 50.47(b)(16) Emergency Plan Maintenance	
16a	Responsibility for emergency plan development and review is established.	☐
16b	Planners responsible for emergency plan development and maintenance are properly trained.	☐

PART IV. Conclusion If no Part IV criteria are checked, a 10 CFR 50.54(q) Effectiveness Evaluation is not required, then complete Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part V. Go to Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part VI for instructions describing the NRC required 30 day submittal.	☐
Justification: If any Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part IV criteria are checked, then complete Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part V and perform a 10 CFR 50.54(q) Effectiveness Evaluation. Shaded block requires final approval of Screen and Evaluation by EP CFAM.	☐

Part V. Signatures:		
Preparer Name (Print): Randy Gibson	Preparer Signature:	Date: 9/5/17
Reviewer Name (Print): Renard O. Burris	Reviewer Signature:	Date: 9/5/17
Approver (EP Manager Name (Print): Kevin L. Murray	Approver Signature:	Date: 9.7.17
Approver (CFAM, as required) Name (Print) N/A	Approver Signature: N/A	Date: N/A

QA RECORD

J. PROTECTIVE RESPONSE

To assure that a range of protective actions is available for the plume exposure pathway for emergency workers and the public. Guidelines for protective actions during an emergency, consistent with Federal guidance, are developed and in place and protective actions for the ingestion exposure pathway appropriate to the locale have been developed.

To protect onsite personnel during hostile action and ensure the continued ability to safely shutdown the reactor and perform the functions of the emergency plan a range of protective actions are in place.

J.1. Onsite Alerting and Notification

The means and time required to warn, alert and/or notify employees not having emergency assignments (non-essential), visitors, contractor and construction personnel and other individuals who may be on or passing through the owner-controlled area are described in RP/0/A/5700/011, Conducting a Site Assembly, Site Evacuation or Containment Evacuation.

Methods to notify and alert onsite personnel (essential and non-essential) during hostile action activities are describe in AP/0/A/5500/047, Security Events and RP/0/A/5700/011, Conducting A Site Assembly, Site Evacuation or Containment Evacuation.

J.2 Evacuation Routes and Transportation

The Operations Shift Manager/Emergency Coordinator or designee uses site and local area maps, information available from meteorological tower instrument readouts and current radiological data for determining the evacuation route. Evacuation routes for onsite individuals to suitable offsite locations, including alternatives for weather or radiological conditions is provided in RP/0/A/5700/011, Conducting a Site Assembly, Site Evacuation or Containment Evacuation.

J.3 Personnel Monitoring

Radiation Protection emergency personnel survey teams equipped with portable monitoring instruments will monitor employees, visitors, contract workers and vehicles for contamination at the Relocation Sites. Monitoring will be performed in accordance with Radiation Protection procedure HP/0/B/1009/024, Personnel Monitoring for Emergency Conditions.

J.4 Site Evacuation Procedures - Decontamination/Non-Essential Personnel Criteria

Non-essential personnel may be evacuated from the plant site in the event of a Site Area Emergency and will be evacuated in the event of a General Emergency. Provisions are made for the decontamination of vehicles and personnel at an off-site location if the situation should warrant.

All members of the general public who are on-site must be evacuated if there is a possibility they may be exposed to dose rates in excess of any of the following:

External Radiation Level = 2 mrems/hr
Airborne Radioactivity = 1 times DAC for an unrestricted area

During hostile threat conditions that do not require Site Sheltering, Site Relocation of non-essential personnel to locations outside of the protected area are performed in accordance with AP/0/A/5500/047, Security Events and RP/0/A/5700/011, Conducting A Site Assembly, Site Evacuation or Containment Evacuation.

J.5 Personnel Accountability

Within thirty minutes of a Site Assembly, all persons within the Protected Area at the McGuire Nuclear Site can be accounted for and any person(s) determined to be missing, will be identified by name. RP/0/A/5700/11, Conducting a Site Assembly, Site Evacuation or Containment Evacuation, provides for the accounting of personnel (on site) continuously thereafter.

When hostile threat conditions permit, personnel accountability is performed in accordance with RP/0/A/5700/011, Conducting A Site Assembly, Site Evacuation or Containment Evacuation.

J.6 Protective Equipment - Breathing Apparatus, Protective Clothes, KI

Protective equipment and supplies will be distributed to respiratory qualified personnel remaining on site or arriving on site during the emergency to minimize the effects of radiological exposures or contamination. Protective measures will be utilized as follows:

Individual Respiratory Protection - Respiratory protective equipment will be used when airborne radioactivity levels exceed the appropriate limits specified in 10CFR20, Appendix B.

Self-contained breathing apparatus will also be used in areas that are deficient in oxygen or when fighting fires. Respiratory protective equipment will be issued by Radiation Protection or Safety and Health Services. Self-contained breathing apparatus are available with other fire fighting equipment for use by the site fire brigade.

Individual Thyroid Protection - All efforts should be made to utilize respiratory protective equipment to minimize ingestion and/or inhalation of radionuclides and to maintain internal

exposure below the limits specified in 10CFR20, Appendix B. However, if an unplanned incident involves the accidental or potential ingestion or inhalation of radioactive iodine, Potassium Iodide Tablets (KI) are available to distribution by AD-EP-ALL-0204, Distribution of Potassium Iodide Tablets in the Event of a Radioiodine Release.

Use of Protective Clothing - Protective clothing will be issued when contamination levels exceed 1000 dpm/100 cm^2 beta-gamma and 20 dpm/100 cm^2 alpha of smearable contamination. Protective clothing items are located in the Change Rooms inside the Radiation Control Area, available for emergency use. Special fire-fighting protective clothing and equipment is available in designated site supply storage areas for use by fire brigade personnel.

J.7 Protective Actions Recommendations

The Emergency Coordinator (Operations Shift Manager or Station Manager) or the EOF Director shall be responsible for contacting the state and/or local governments to give prompt notification for implementing protective measures within the plume exposure pathway, and beyond it if necessary.

Protective Action Guides are adopted from EPA 400-R-92-001 and in the State Plan guidance on the use of KI and are shown in Figure J-1. A flowchart to aid the Emergency Coordinator/EOF Director in making Protective Action Recommendations is also shown in Figure J-1. {PIP-G-03-606}

As described in section B.4, the Emergency Coordinator and the EOF Director are responsible for making protective action recommendations. Prior to activation of the EOF, the Emergency Coordinator will be responsible for making these recommendations. After activation of the EOF, the EOF Director assumes this responsibility. Protective action recommendations will be provided to the off-site authorities (states and counties) who are responsible for implementing public protective actions. The pre-established warning message format (Figure E-1) will be used in transmitting the recommendations.

The mechanism for making dose projections upon EOF activation is as follows:

The Radiological Assessment Manager is responsible for making dose projections on a periodic basis. Calculations are made using a computer based dose projection model to calculate projected dose to the population-at-risk for either potential or actual release conditions. For conditions in which a release has not occurred but fuel damage has taken place and radiation levels in the containment building atmosphere are significant, a scoping analysis will be performed to determine what recommendations would be made if containment integrity were lost at that time. The analysis will be based upon a design leak rate and upon a projected penetration failure indicated by a hole size of certain diameter. This analysis will include the use of actual containment pressure, realistic meteorology, and actual source term. A Total Effective Dose Equivalent and Committed Dose Equivalent thyroid dose will be calculated at various distances from the plant (site boundary, 2 miles, 5 miles, 10 miles and beyond if needed). These dose projections are compared to the Protective Action Guides in Figure J-1, which are derived from the "Manual of Protective Action Guides and Protective Actions for

Nuclear Incidents" (EPA-400-R-92-001) and in the State Plan guidance on use of KI. Based on these comparisons, protective action recommendations are developed by the Radiological Assessment Manager. The Radiological Assessment Manager informs the EOF Director of the situation and recommendations for protective actions. {PIP-G-03-606}

If dose projections show that PAGs have been exceeded at 10 miles, the dose assessment code and in-field measurements, when available, shall be used to calculate doses at various distances down wind to determine how far from the site PAG levels are exceeded. The Radiological Assessment Manager shall forward the results to the EOF Director who will communicate this information to the offsite authorities.

J.8 Evacuation Time Estimates

An Analysis of Evacuation Time Estimates is available at the site and a summary of the Time Estimates is included in Figure J-3 and Appendix 4.

Under normal weather and for the critical time period (weekday during school hours), the maximum evacuation time for the McGuire EPZ is 4 hours 35 minutes. The critical component in the evacuation is the permanent resident population, all other segments of the population can be evacuated in less than the maximum time.

Under adverse weather conditions (winter storm), the evacuation time for the McGuire EPZ is 5 hours 40 minutes. This evacuation time assumes evacuation of the entire EPZ. Figure J-3 provides more detailed information including evacuation times for individual zones. Appendix 4 discusses the ETE used by the site, state and local planners.

A description of the methods and assumptions used in developing the analysis of evacuation time estimates is included in the current Evacuation Time Estimate study for McGuire Nuclear Site. (MNS-ETE-12132012, Rev. 000; MNS EVACUATION TIME ESTIMATES (ETE) DATED December 2012). The Evacuation Time Estimates will be considered in evaluating protective action recommendations from the Technical Support Center or the Emergency Operations Facility. A copy of the most recent study is available in the MNS Master File under MNS-ETE-12132012.000 or EP Office area.

An updated ETE analysis will be submitted to the NRC under §50.4 no later than 365 days after MNS determination that the criteria for updating the ETE have been met and at least 180 days before using it to form protective action recommendations and providing it to State and local governmental authorities for use in developing offsite protective action strategies.

The criteria for determination that an updated ETE analysis have been met:

a) The availability of the most recent decennial census data from the U.S. Census Bureau:

OR

b) If at any time during the decennial period, the EPZ permanent resident population increases such that it causes the longest ETE value for the 2-mile zone or 5-mile zone, including all affected Emergency Response Planning Areas, or for the entire 10-mile EPZ to increase by 25 percent or 30 minutes, whichever is less, from the currently NRC approved or updated ETE.

During the years between decennial period censuses MNS will estimate EPZ permanent resident population changes once a year, but no later than 365 days from the date of the previous estimate, using the most recent U.S. Census Bureau annual resident population estimate and State/local government population data, if available. MNS will maintain these estimates so that they are available for NRC inspection during the period between decennial censuses and shall submit these estimates to the NRC with any updated ETE analysis.

MNS ETE analysis, using the 2010 decennial census data from the U.S. Census Bureau, was submitted to the NRC via §50.4 on December 13, 2012.

J.9 Implementing Protective Measures

If protective actions for any off-site location are deemed necessary, the emergency management agency of the affected County, in conjunction with the appropriate State agency (NC-Department of Public Safety) has the legal authority and responsibility for initiating protective measures for the general public in the plume exposure pathway EPZ including evacuation of these areas. Use of sheltering as an alternative to evacuation for impediments to evacuation and special populations is a decision that will be made by the offsite officials. Sheltering in lieu of evacuation should also be considered during a short term release. A short term release is any release that can be accurately projected to be less than the affected protective action zone's evacuation time. An example would be a "puff release". In addition, sheltering may be appropriate (when available) for areas not designated for immediate evacuation because: 1) it positions the public to receive additional instructions; and 2) it may provide protection equal to or greater than evacuation. {PIP G-04-337} Public notification of the emergency, the resources used to determine if an evacuation is necessary, the evacuation routes, and the methods used for evacuating persons in the plume exposure pathway EPZ are outlined in the appropriate County and State emergency plans.

See County and State Plans for more detailed information.

For hostile action events, a range of protective actions for onsite workers including site relocation of essential personnel from potential target buildings, timely evacuation of non-essential site personnel, dispersal of critical personnel to safe locations, on site sheltering of

personnel and accountability of personnel after the attack are provided in emergency plan implementing procedures AP/0/A/5500/047, Security Events and RP/0/A/5700/011, Conducting A Site Assembly, Site Evacuation or Containment Evacuation.

J.10 Implementation of Protective Measures for Plume Exposure Pathway

J.10.a EPZ Maps

Figures J-1 and 2 describe the EPZ's, government jurisdictions and evacuation zones for McGuire Nuclear Site. Evacuation routes are displayed in Figure J-5.

J.10.b EPZ - Population Distribution Map

Figure J-6 describes the population distribution by Emergency Planning subzone. The FSAR describes the population distribution by sector.

J.10.c EPZ - Population Alerting and Notification

As described in Appendix 3 of this plan, a system exists for alerting and notifying the population (resident and transient) within the EPZ areas. This system is activated by the county and state organization and includes the use of large fixed-site sirens and the Emergency Alert System (EAS). A back-up means of alerting and notification is described in the State and County Emergency Plans.

J.10.d EPZ - Protecting Immobile Persons

See County and State Plans.

J.10.e Use of Radioprotective Drugs For Persons in EPZ

See County and State Plans.

J.10.f Conditions For Use of Radioprotective Drugs

See County and State Plans.

J.10.g State/County Relocation Plans

See County and State Plans.

J.10.h Reception Center Locations

See County and State Plans.

J.10.i Evacuation Route - Traffic Capacities

See County and State Plans.

J.10.j Evacuated Area Access Control

See County and State Plans.

J.10.k Planning For Contingencies in Evacuation

See County and State Plans.

J.10.l State/County Evacuation Time Estimates

The estimates shown in Appendix 4 are references in the County and State Plans.

J.10.m Bases For Protective Action Recommendations

Figure J-1 describes the considerations used by Duke management in developing protective action recommendations.

J.11 Ingestion Pathway Planning

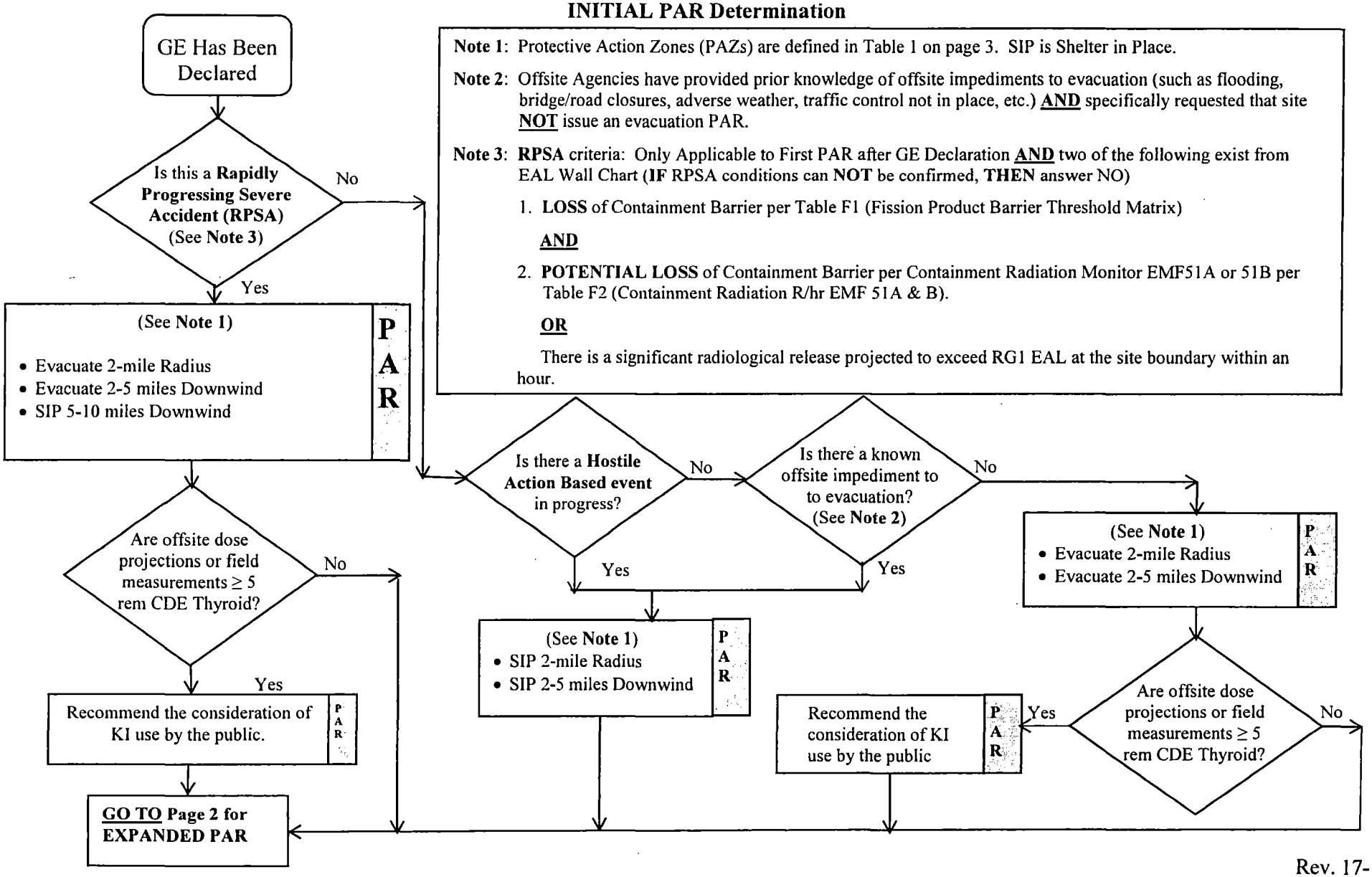
See County and State Plans.

J.12 Reception Center - Registering & Monitoring

See County and State Plans

Figure J-1
1 of 3
Guidance for Offsite Protective Actions

INITIAL PAR Determination



Note 1: Protective Action Zones (PAZs) are defined in Table 1 on page 3. SIP is Shelter in Place.

Note 2: Offsite Agencies have provided prior knowledge of offsite impediments to evacuation (such as flooding, bridge/road closures, adverse weather, traffic control not in place, etc.) **AND** specifically requested that site **NOT** issue an evacuation PAR.

Note 3: **RPSA** criteria: Only Applicable to First PAR after GE Declaration **AND** two of the following exist from EAL Wall Chart (**IF** RPSA conditions can **NOT** be confirmed, **THEN** answer NO)

1. **LOSS** of Containment Barrier per Table F1 (Fission Product Barrier Threshold Matrix)

   AND

2. **POTENTIAL LOSS** of Containment Barrier per Containment Radiation Monitor EMF51A or 51B per Table F2 (Containment Radiation R/hr EMF 51A & B).

   OR

   There is a significant radiological release projected to exceed RG1 EAL at the site boundary within an hour.

Figure J-1
2 of 3
EXPANDED PAR Determination

Note 1: Protective Action Zones (PAZs) are defined in Table 1 on page 3. SIP is Shelter in Place.

(IF a PAZ has been accurately selected for evacuation, it shall remain selected.)

Note 2: Offsite Agencies have provided prior knowledge of offsite impediments to evacuation (such as flooding, bridge/road closures, adverse weather, traffic control not in place, etc.) **AND** specifically requested that site **NOT** issue an evacuation PAR.

Note 3: A short-term release is one that can be accurately projected to be < three hours and controlled by the licensee. This consideration would typically apply to controlled venting of containment.

Note 4: Plant conditions exist which would require the classification of a General Emergency per the EALs. This does NOT include consideration of offsite dose-based EALs.

From INITIAL PAR

Continuous Assessment

Evaluate PAR based on changes in any of the following:

- Increase in dose assessment projected values.
- Increase in field team measured values.
- Shift in 15-minute average wind direction resulting in additional sectors being affected. (Table 3 on page 3)
- Offsite Agencies provides information that offsite impediments no longer exist.
- Hostile action based event has been terminated.
- IF RPSA, when safer to do so consider evacuation of SIP PAZs based upon radiological assessment and discussions with Offsite Agencies.

Is there a **Hostile Action Based event** in progress?

No

Is there a known offsite impediment to to evacuation? (See **Note 2**)

No

Is there a short-term release in progress? (See **Note 3**)

No

GE Conditions? (See **Note 4**)

No

Offsite Projected Dose projections or field measurements exceed PAGs? Table 2

No

Yes

Yes

Yes

Yes

Yes

(See **Note 1**)
- SIP 2-mile Radius
- SIP 2-5 miles Downwind
- SIP additional PAZ(s) that exceed PAGs

PAR

(See **Note 1**)
- Evacuate 2-mile Radius
- Evacuate 2-5 miles Downwind

PAR

Evacuate PAZ(s) that exceed PAGs. If projected dose is ≥ 5 rem Thyroid CDE then recommend the consideration of KI use by the public.

PAR

FIGURE J-1
3 OF 3
GUIDANCE FOR OFFSITE PROTECTIVE ACTIONS

Table 1			
Protective Action Zones			
Wind Direction	2 Mile Radius	2-5 Miles Downwind	5-10 Miles Downwind
0.1 - 22.5	B,C,L,M	D,O,R	E,F,S
22.6 – 45.0	B,C,L,M	D,O,R	E,Q,S
45.1 – 67.5	B,C,L,M	D,N,O,R	E,P,Q,S
67.6 – 90.0	B,C,L,M	D,N,O,R	P,Q,S
90.1 – 112.5	B,C,L,M	N,O,R	K,P,Q,S
112.6 – 135.0	B,C,L,M	A,N,O,R	I,K,P,Q,S
135.1 – 157.5	B,C,L,M	A,N,O	I,K,P,Q
157.6 – 180.0	B,C,L,M	A,N	H,I,J,K,P
180.1 – 202.5	B,C,L,M	A,N	G,H,I,J,K,P
202.6 – 225.0	B,C,L,M	A,D,N	G,H,I,J,K,P
225.1 – 247.5	B,C,L,M	A,D	F,G,H,I,J
247.6 – 270.0	B,C,L,M	A,D	F,G,H,I,J
270.1 – 292.5	B,C,L,M	A,D	E,F,G,H,J
292.6 – 315.0	B,C,L,M	A,D,R	E,F,G
315.1 – 337.5	B,C,L,M	D,R	E,F,G,S
337.6 – 360.0	B,C,L,M	D,R,O	E,F,S

Table 2	
PROTECTIVE ACTION GUIDES (PAGs) (Projected Dose or Field Measurements)	
Total Effective Dose Equivalent (TEDE)	Committed Dose Equivalent (CDE) Thyroid
≥ 1 Rem	≥ 5 Rem

Table 3	
WIND SPEED/DIRECTION	
ENF Radiation Protection Manager	Line 9
McGuire SDS	Group Display **ERORD5**
DPC Meteorological Lab	704-382-0139 704-373-7896
National Weather Service Greer, S.C	864-879-1085 800-268-7785

Figure J-2
Description of Evacuation Regions

Region	Description	Degrees From North:	Sub-Zone																	
			A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
R01	2-Mile Ring	N/A		X	X									X	X						
R02	5-Mile Ring	N/A	X	X	X	X								X	X	X	X			X	
R03	Full EPZ	N/A	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R04	Catawba County	N/A											X								
R05	Gaston County	N/A																		X	X
R06	Iredell County	N/A	X								X	X									
R07	Lincoln County	N/A												X	X	X	X	X	X		
R08	Mecklenburg County	N/A	X	X	X	X	X	X	X	X											
Evacuate 2-Mile Radius and Downwind to 5 Miles																					
Region	Wind Direction From:	Degrees From North:	Sub-Zone																	
			A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
R09	N, NNE	0.1 - 45.0		X	X	X								X	X					X	
R10	NE, ENE	45.1 - 90.0		X	X									X	X		X			X	
R11	E,ESE, SE	90.1 - 157.6		X	X									X	X	X	X				
R12	SSE	157.5 - 180.0		X	X									X	X	X					
R13	S	180.1 - 202.5	X	X	X									X	X	X					
R14	SSW, SW	202.6 - 247.5	X	X	X									X	X						
R15	WSW, W	247.6 - 292.5	X	X	X	X								X	X						
R16	WNW, NW, NNW	292.6 - 360.0		X	X	X								X	X						
Evacuate 5-Mile Radius and Downwind to the EPZ Boundary																					
Region	Wind Direction From:	Degrees From North:	Sub-Zone																	
			A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
R17	N	0.1 - 22.5	X	X	X	X	X	X						X	X	X	X			X	X
R18	NNE	22.6 - 45.0	X	X	X	X	X							X	X	X	X			X	X
R19	NE	45.1 - 67.5	X	X	X	X	X							X	X	X	X		X	X	X
R20	ENE	67.6 - 90.0	X	X	X	X								X	X	X	X		X	X	X
R21	E	90.1 - 112.5	X	X	X	X								X	X	X	X	X	X	X	X
R22	ESE	112.6 -135.0	X	X	X	X								X	X	X	X	X	X	X	
R23	SE	135.1 - 157.6	X	X	X	X							X	X	X	X	X	X	X	X	
R24	SSE	157.5 - 180.0	X	X	X	X					X		X	X	X	X	X	X		X	
R25	S	180.1 - 202.5	X	X	X	X					X	X	X	X	X	X	X	X		X	
R26	SSW	202.6 - 225.0	X	X	X	X				X	X	X	X	X	X	X	X	X		X	
R27	SW	225.1 - 247.5	X	X	X	X			X	X	X	X		X	X	X	X			X	
R28	WSW	247.6 - 270.0	X	X	X	X		X	X	X		X		X	X	X	X			X	
R29	W	270.1 - 292.5	X	X	X	X		X	X	X				X	X	X	X			X	

Figure J-2

Region	Description	Degrees From North:	Sub-Zone																	
			A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
R30	WNW	292.6 - 315.5	X	X	X	X		X	X					X	X	X	X			X	
R31	NW	315.1 - 337.5	X	X	X	X	X	X	X					X	X	X	X			X	
R32	NNW	337.6 - 360.0	X	X	X	X	X	X						X	X	X	X			X	
Staged Evacuation - 2-Mile Radius Evacuates, then Evacuate Downwind to 5 Miles																					
Region	Wind Direction From:	Degrees From North:	Sub-Zone																		
			A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
R33	N, NNE	0.1 - 45.0		X	X	X								X	X					X	
R34	NE, ENE	45.1 - 90.0		X	X									X	X		X			X	
R35	E,ESE, SE	90.1 - 157.6		X	X									X	X	X	X				
R36	SSE	157.5 - 180.0		X	X									X	X	X					
R37	S	180.1 - 202.5	X	X	X									X	X	X					
R38	SSW, SW	202.6 - 247.5	X	X	X									X	X						
R39	WSW, W	247.6 - 292.5	X	X	X	X								X	X						
R40	WNW, NW, NNW	292.6 - 360.0		X	X	X								X	X						
R41	5-Mile Ring	N/A	X	X	X	X								X	X	X	X			X	
Sub-Zone(s) Shelter-in-Place until 90% ETE for R01 then Evacuate			**Sub-Zone(s) Shelter-in-Place**											**Sub-Zone(s) Evacuate**							

Figure J-3

MNS ETE Based on 2010 Census

Time to Clear the Indicated Area of 90 Percent of the Affected Population														
	Summer		Summer		Summer	Winter			Winter			Winter	Winter	Summer
	Midweek		Weekend		Midweek Weekend	Midweek			Weekend			Midweek Weekend	Weekend	Midweek
Scenario:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	Midday		Midday		Evening	Midday			Midday			Evening	Midday	Midday
	Good Weather	Rain	Good Weather	Rain	Good Weather	Good Weather	Rain	Ice	Good Weather	Rain	Ice	Good Weather	Special Event	Roadway Impact
Entire 2-Mile Region, 5-Mile Region, EPZ and each County														
R01 (B,C,L,M)	2:35	2:50	1:50	1:50	1:50	2:45	2:55	3:10	1:50	1:50	1:55	1:50	1:50	2:40
R02 (A,B,C,D,L,M,N,O,R)	2:50	3:10	2:25	2:45	2:20	2:45	3:10	3:35	2:25	2:40	3:00	2:20	2:25	3:30
R03 (All Sub-Zones)	4:35	5:00	3:30	3:55	3:10	4:35	5:00	5:40	3:30	3:50	4:10	3:10	3:40	4:50
R04 (K)	2:25	2:25	2:00	2:00	2:00	2:25	2:25	2:25	2:00	2:00	2:00	2:00	2:00	2:25
R05 (R,S)	2:20	2:30	2:10	2:15	2:10	2:20	2:30	2:35	2:05	2:15	2:25	2:05	2:10	2:20
R06 (A,I,J)	2:40	2:50	2:25	2:35	2:20	2:40	2:55	3:15	2:25	2:35	2:55	2:20	2:25	3:25
R07 (L,M,N,O,P,Q)	3:30	3:40	3:05	3:20	2:50	3:20	3:30	3:55	2:50	3:05	3:25	2:40	3:05	3:30
R08 (A,B,C,D,E,F,G,H)	4:35	5:00	3:30	3:55	3:10	4:40	5:05	5:45	3:30	3:50	4:10	3:10	3:35	4:50
2-Mile Region and Keyhole to 5 Miles														
R09 (B,C,D,L,M,R)	2:35	2:50	2:20	2:35	2:30	2:35	2:50	3:10	2:20	2:30	2:55	2:30	2:25	3:35
R10 (B,C,L,M,O)	2:30	2:40	1:55	1:55	1:55	2:35	2:45	2:55	1:55	1:55	2:00	1:55	1:55	2:30
R11 (B,C,L,M,N,O)	2:30	2:35	1:55	1:55	1:55	2:30	2:35	2:50	1:55	1:55	2:00	1:55	1:55	2:30
R12 (B,C,L,M,N)	2:30	2:40	1:55	1:55	1:55	2:35	2:40	2:55	1:55	1:55	1:55	1:55	1:55	2:30
R13 (A,B,C,L,M,N)	2:20	2:40	2:10	2:20	2:00	2:20	2:40	3:00	2:10	2:20	2:40	2:00	2:10	3:45
R14 (A,B,C,L,M)	2:25	2:40	2:10	2:20	2:00	2:25	2:45	3:00	2:10	2:20	2:35	2:00	2:10	3:40

Figure J-3

MNS ETE Based on 2010 Census

	Summer		Summer		Summer	Winter			Winter			Winter	Winter	Summer
	Midweek		Weekend		Midweek Weekend	Midweek			Weekend			Midweek Weekend	Weekend	Midweek
Scenario:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	Midday		Midday		Evening	Midday			Midday			Evening	Midday	Midday
	Good Weather	Rain	Good Weather	Rain	Good Weather	Good Weather	Rain	Ice	Good Weather	Rain	Ice	Good Weather	Special Event	Roadway Impact
2-Mile Region, and Keyhole to 5 Miles														
R15 (A,B,C,D,L,M)	2:50	3:15	2:30	2:45	2:25	2:50	3:10	3:35	2:25	2:40	3:05	2:20	2:30	3:35
R16 (B,C,D,L,M)	2:35	2:50	2:25	2:35	2:30	2:35	2:50	3:10	2:20	2:30	2:55	2:30	2:25	3:40
5-Mile Region and Keyhole to EPZ Boundary														
R17 (A,B,C,D,E,F,L,M,N, O,R,S)	4:10	4:40	3:15	3:35	3:00	4:20	4:40	5:15	3:10	3:30	3:50	2:55	3:10	4:25
R18 (A,B,C,D,E,L,M,N, O,R,S)	2:45	3:05	2:30	2:45	2:30	2:50	3:05	3:25	2:30	2:40	3:00	2:25	2:30	3:15
R19 (A,B,C,D,E,L,M,N, O,Q,R,S)	2:55	3:15	2:35	2:50	2:35	2:55	3:15	3:35	2:35	2:45	3:05	2:35	2:35	3:20
R20 (A,B,C,D,L,M,N, O,Q,R,S)	2:45	3:10	2:25	2:40	2:20	2:45	3:00	3:30	2:20	2:35	2:55	2:20	2:25	3:25
R21 (A,B,C,D,L,M,N, O,P,Q,R,S)	3:00	3:15	2:35	2:55	2:30	2:55	3:15	3:40	2:30	2:45	3:10	2:30	2:35	3:30
R22 (A,B,C,D,L,M,N, O,P,Q,R,S)	3:00	3:20	2:35	2:55	2:35	3:00	3:15	3:40	2:30	2:45	3:10	2:30	2:40	3:30
R23 (A,B,C,D,K,L,M,N, O,P,Q,R)	3:05	3:20	2:40	2:55	2:35	3:00	3:15	3:45	2:30	2:45	3:10	2:30	2:40	3:35
R24 (A,B,C,D,I,K,L,M,N, O,P,R)	3:05	3:25	2:45	3:00	2:45	3:05	3:20	3:45	2:35	2:50	3:15	2:40	2:45	3:30

Figure J-3

MNS ETE Based on 2010 Census

	Summer		Summer		Summer	Winter			Winter			Winter	Winter	Summer
	Midweek		Weekend		Midweek Weekend	Midweek			Weekend			Midweek Weekend	Weekend	Midweek
Scenario:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	Midday		Midday		Evening	Midday			Midday			Evening	Midday	Midday
	Good Weather	Rain	Good Weather	Rain	Good Weather	Good Weather	Rain	Ice	Good Weather	Rain	Ice	Good Weather	Special Event	Roadway Impact
5-Mile Region and Keyhole to EPZ Boundary														
R25 (A,B,C,D,I,J,K,L,M, N,O,P,R)	3:00	3:20	2:45	3:00	2:40	3:05	3:20	3:45	2:40	2:55	3:15	2:35	2:45	3:30
R26 (A,B,C,D,H,I,J,K,L, M,N,O,P,R)	3:15	3:35	2:50	3:05	2:40	3:15	3:30	4:00	2:45	3:00	3:25	2:35	2:50	3:45
R27 (A,B,C,D,G,H,I,J, L,M,N,O,R)	3:45	4:05	3:10	3:30	2:55	3:40	4:05	4:35	3:10	3:25	3:50	2:50	3:15	4:35
R28 (A,B,C,D,F,G,H,J, L,M,N,O,R)	4:30	5:00	3:30	3:50	3:05	4:35	5:05	5:35	3:25	3:45	4:10	3:00	3:35	4:50
R29 (A,B,C,D,F,G,H,L, M,N,O,R)	4:30	4:55	3:25	3:45	3:00	4:30	4:55	5:35	3:20	3:35	4:05	3:00	3:25	4:40
R30 (A,B,C,D,F,G,L,M, N,O,R)	4:25	4:45	3:15	3:40	3:00	4:25	4:50	5:20	3:15	3:35	4:00	3:00	3:25	4:35
R31 (A,B,C,D,E,F,G,L, M,N,O,R)	4:35	4:55	3:35	3:45	3:05	4:30	5:05	5:30	3:25	3:45	4:05	3:05	3:35	4:40
R32 (A,B,C,D,E,F,L,M, N,O,R)	4:10	4:35	3:10	3:30	2:55	4:20	4:40	5:10	3:15	3:30	3:50	2:55	3:15	4:20

Figure J-3

	Summer				Summer	Winter			Winter			Winter	Winter	Winter
	Midweek		Weekend		Midweek Weekend	Midweek			Weekend			Midweek Weekend	Weekend	Midweek
Scenario:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	Midday		Midday		Evening	Midday			Midday			Evening	Midday	Midday
	Good Weather	Rain	Good Weather	Rain	Good Weather	Good Weather	Rain	Ice	Good Weather	Rain	Ice	Good Weather	Special Event	Roadway Impact
Staged Evacuation - 2 Mile Region and Keyhole to 5 miles														
R33 (B,C,D,L,M,R)	3:10	3:20	3:10	3:20	3:30	3:10	3:20	3:30	3:15	3:20	3:30	3:30	3:15	4:00
R34 (B,C,L,M,O)	2:30	2:40	2:25	2:25	2:25	2:35	2:45	2:55	2:25	2:25	2:25	2:25	2:25	2:30
R35 (B,C,L,M,N,O)	2:40	2:45	2:35	2:40	2:35	2:40	2:50	2:55	2:35	2:40	2:45	2:35	2:35	2:40
R36 (B,C,L,M,N)	2:40	2:45	2:35	2:35	2:35	2:40	2:45	2:55	2:35	2:35	2:40	2:35	2:35	2:40
R37 (A,B,C,L,M,N)	2:45	2:55	2:45	2:50	2:50	2:45	2:55	3:05	2:45	2:55	3:00	2:55	2:45	3:35
R38 (A,B,C,L,M)	2:50	2:55	2:50	2:55	2:55	2:50	2:55	3:10	2:50	2:55	3:05	2:55	2:45	3:45
R39 (A,B,C,D,L,M)	3:15	3:25	3:15	3:20	3:25	3:15	3:30	3:45	3:15	3:20	3:35	3:25	3:15	4:00
R40 (B,C,D,L,M)	3:15	3:20	3:15	3:20	3:30	3:15	3:20	3:35	3:15	3:20	3:30	3:30	3:15	4:00
R41 (A,B,C,D,L,M, N,O,R)	3:15	3:25	3:10	3:15	3:20	3:15	3:20	3:40	3:10	3:20	3:30	3:20	3:10	3:55

Figure J-4

MNS ETE Based on 2010 Census

Time to Clear the Indicated Area of 100 Percent of the Affected Population														
	Summer		Summer		Summer	Winter			Winter			Winter	Winter	Summer
	Midweek		Weekend		Midweek Weekend	Midweek			Weekend			Midweek Weekend	Weekend	Midweek
Scenario:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	Midday		Midday		Evening	Midday			Midday			Evening	Midday	Midday
	Good Weather	Rain	Good Weather	Rain	Good Weather	Good Weather	Rain	Ice	Good Weather	Rain	Ice	Good Weather	Special Event	Roadway Impact
Entire 2-Mile Region, 5-Mile Region, EPZ and each County														
R01 (B,C,L,M)	4:30	4:30	4:30	4:30	4:30	4:30	4:35	4:35	4:30	4:30	4:30	4:30	4:30	4:30
R02 (A,B,C,D,L,M,N,O,R)	4:35	4:35	4:35	4:35	4:35	4:35	4:35	5:00	4:35	4:35	4:35	4:35	4:35	4:45
R03 (All Sub-Zones)	6:10	6:50	5:00	5:25	5:05	6:20	7:15	7:55	5:05	5:15	5:40	5:05	5:00	7:10
R04 (K)	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35
R05 (R,S)	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35
R06 (A,I,J)	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	5:20
R07 (L,M,N,O,P,Q)	4:35	4:50	4:35	4:35	4:35	4:35	4:35	5:05	4:35	4:35	4:35	4:35	4:35	4:35
R08 (A,B,C,D,E,F,G,H)	6:05	6:50	4:45	5:10	4:40	6:20	7:00	7:45	4:40	5:15	5:40	4:40	4:50	7:05
2-Mile Region and Keyhole to 5 Miles														
R09 (B,C,D,L,M,R)	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	5:15
R10 (B,C,L,M,O)	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35
R11 (B,C,L,M,N,O)	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35
R12 (B,C,L,M,N)	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35

Figure J-4

	Summer		Summer		Summer	Winter			Winter			Winter	Winter	Summer
	Midweek		Weekend		Midweek Weekend	Midweek			Weekend			Midweek Weekend	Weekend	Midweek
Scenario:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	Midday		Midday		Evening	Midday			Midday			Evening	Midday	Midday
	Good Weather	Rain	Good Weather	Rain	Good Weather	Good Weather	Rain	Ice	Good Weather	Rain	Ice	Good Weather	Special Event	Roadway Impact
Entire 2-Mile Region, and Keyhole to 5 miles														
R13 (A,B,C,L,M,N)	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	5:30
R14 (A,B,C,L,M)	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	5:30
R15 (A,B,C,D,L,M)	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	5:45
R16 (B,C,D,L,M)	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:40	4:35	4:35	4:35	4:35	4:35	5:20
5-Mile Region and Keyhole to EPZ Boundary														
R17 (A,B,C,D,E,F,L,M,N, O,R,S)	5:55	6:10	5:00	5:10	5:00	6:15	6:30	7:20	5:05	5:10	5:35	5:00	5:05	6:40
R18 (A,B,C,D,E,L,M,N, O,R,S)	4:40	4:40	4:40	4:40	4:40	4:40	4:40	5:10	4:40	4:40	4:40	4:40	4:40	5:40
R19 (A,B,C,D,E,L,M,N, O,Q,R,S)	5:15	6:00	4:55	5:10	4:55	5:35	6:05	6:20	4:55	5:05	5:30	4:55	5:00	5:40
R20 (A,B,C,D,L,M,N, O,Q,R,S)	4:40	4:40	4:40	4:40	4:40	4:40	4:40	5:05	4:40	4:40	4:40	4:40	4:40	5:45
R21 (A,B,C,D,L,M,N, O,P,Q,R,S)	4:40	5:05	4:40	4:40	4:40	4:40	5:05	5:15	4:40	4:40	4:40	4:40	4:40	5:45
R22 (A,B,C,D,L,M,N, O,P,Q,R)	4:40	4:45	4:40	4:40	4:40	4:40	4:40	5:10	4:40	4:40	4:40	4:40	4:40	5:40

Figure J-4

	Summer		Summer		Summer	Winter			Winter			Winter	Winter	Summer
	Midweek		Weekend		Midweek Weekend	Midweek			Weekend			Midweek Weekend	Weekend	Midweek
Scenario:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	Midday		Midday		Evening	Midday			Midday			Evening	Midday	Midday
	Good Weather	Rain	Good Weather	Rain	Good Weather	Good Weather	Rain	Ice	Good Weather	Rain	Ice	Good Weather	Special Event	Roadway Impact
5-Mile Region and Keyhole to EPZ Boundary														
R23 (A,B,C,D,K,L,M,N,O,P,Q,R)	4:40	5:10	4:40	4:40	4:40	4:40	4:50	5:25	4:40	4:40	4:45	4:40	4:40	5:45
R24 (A,B,C,D,I,K,L,M,N,O,P,R)	4:40	5:05	4:40	4:40	4:40	4:40	4:50	5:20	4:40	4:40	4:40	4:40	4:40	5:40
R25 (A,B,C,D,I,J,K,L,M,N,O,P,R)	4:40	5:05	4:40	4:40	4:40	4:40	4:45	5:20	4:40	4:40	4:40	4:40	4:40	5:40
R26 (A,B,C,D,H,I,J,K,L,M,N,O,P,R)	4:40	5:05	4:40	4:40	4:40	4:40	4:45	5:20	4:40	4:40	4:40	4:40	4:40	6:05
R27 (A,B,C,D,G,H,I,J,L,M,N,O,R)	5:05	5:25	4:40	4:40	4:40	4:55	5:30	6:05	4:40	4:40	4:40	4:40	4:40	6:40
R28 (A,B,C,D,F,G,H,J,L,M,N,O,R)	6:00	6:30	4:40	4:55	4:40	6:15	7:05	7:30	4:40	4:45	5:30	4:40	4:55	7:10
R29 (A,B,C,D,F,G,H,L,M,N,O,R)	6:10	6:25	4:40	5:00	4:40	6:20	7:00	7:30	4:40	4:45	5:25	4:40	4:40	7:05
R30 (A,B,C,D,F,G,L,M,N,O,R)	6:10	6:35	4:40	4:45	4:40	6:15	6:55	7:20	4:40	4:45	5:20	4:40	4:40	7:00
R31 (A,B,C,D,E,F,G,L,M,N,O,R)	6:05	6:45	4:45	5:10	4:40	6:15	7:15	7:50	4:50	5:05	5:35	4:40	4:50	6:55
R32 (A,B,C,D,E,F,L,M,N,O,R)	6:00	6:30	4:40	4:50	4:40	6:05	6:35	7:00	4:55	5:00	5:20	4:40	4:55	6:30

Figure J-4

	Summer		Summer		Summer	Winter			Winter			Winter	Winter	Winter
	Midweek		Weekend		Midweek Weekend	Midweek			Weekend			Midweek Weekend	Weekend	Midweek
Scenario:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	Midday		Midday		Evening	Midday			Midday			Evening	Midday	Midday
	Good Weather	Rain	Good Weather	Rain	Good Weather	Good Weather	Rain	Ice	Good Weather	Rain	Ice	Good Weather	Special Event	Roadway Impact
Staged Evacuation - 2 mile Region and Keyhole to 5 Miles														
R33 (B,C,D,L,M,R)	4:35	4:55	4:35	4:40	4:35	4:35	4:50	5:10	4:35	4:45	5:10	4:35	4:35	5:25
R34 (B,C,L,M,O)	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35
R35 (B,C,L,M,N,O)	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35
R36 (B,C,L,M,N)	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35
R37 (A,B,C,L,M,N)	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	5:30
R38 (A,B,C,L,M)	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	5:30
R39 (A,B,C,D,L,M)	4:40	4:55	4:35	4:45	4:35	4:40	5:05	5:15	4:35	4:45	5:10	4:35	4:35	5:55
R40 (B,C,D,L,M)	4:35	4:55	4:35	4:45	4:35	4:50	4:50	5:10	4:35	4:45	5:10	4:35	4:35	5:25
R41 (A,B,C,D,L,M, N,O,R)	4:55	5:00	4:35	4:45	4:35	5:00	5:10	5:20	4:35	4:50	5:10	4:35	4:35	5:55

Figure J-5

Evacuation Route map for MNS

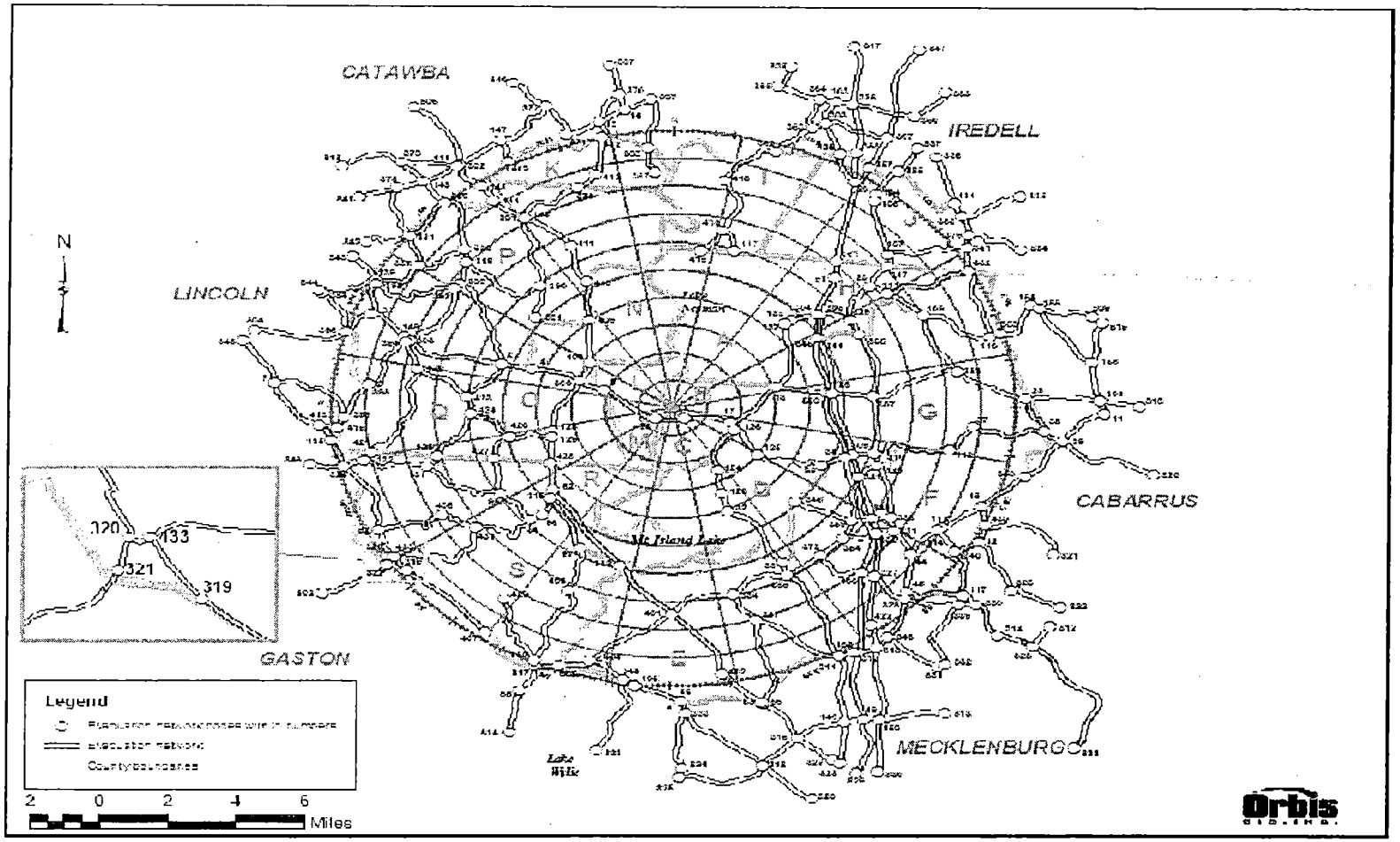


Figure J-6

Summary of Population and Demand

Sub-Zone	Residents	Transit-Dependent	Transients	Employees	Special Facilities	Schools	Shadow Population	External Traffic	Total
A	18433	335	1478	3632	0	338			24,216
B	931	17	0	2231	0	896			4,075
C	1484	27	0	0	0	0			1,511
D	22994	418	2065	1163	102	4900			31,642
E	37228	674	472	2354	0	4134			44,862
F	30364	552	7850	14154	740	6591			60,251
G	25408	462	1150	3311	149	5356			35,836
H	9665	176	694	2604	0	4826			17,965
I	8053	146	19	121	0	0			8,339
J	7447	135	128	1398	107	1471			10,686
K	2272	41	111	0	0	0			2,424
L	1247	23	13	0	0	0			1,283
M	238	4	0	0	0	0			242
N	5381	98	134	1079	0	509			7,201
O	3705	67	0	501	0	0			4,273
P	10377	189	5232	1048	112	3408			20,366
Q	3394	62	13	56	0	0			3,525
R	1667	30	0	43	0	0			1,740
S	14970	272	0	756	236	1652			17,886
Shadow Region						9085	61906		70,991
Total	205,258	3,728	19,359	34,451	1,446	43,166	61,906		369,314

NOTE: Shadow population has been reduced to 20%.
NOTE: Shadow Facilities include both medical facilities and correctional facilities.

10 CFR 50.54(q) Screening Evaluation Form

Screening and Evaluation Number	Applicable Sites	
EREG #: 2134823	BNP	☐
	CNS	☐
	CR3	☐
	HNP	☐
5AD #: 2134822	MNS	x
	ONS	☐
	RNP	☐
	GO	☐

Document and Revision
MNS Emergency Plan Section N EXERCISES AND DRILLS rev 17-1

Part I. Description of Activity Being Reviewed (event or action, or series of actions that may result in a change to the emergency plan or affect the implementation of the emergency plan):

N.2.b
"Fire drills shall be conducted in accordance with Nuclear System Directive (NSD) 112, Fire Brigade Organization Training and Responsibilities."

Changed to

"Fire drills shall be conducted in accordance with AD-OP-ALL-0207 Fire Brigade and Hazmat Administrative Control."

Part II. Activity Previously Reviewed?	Yes		No	X
Is this activity Fully bounded by an NRC approved 10 CFR 50.90 submittal or Alert and Notification System Design Report? If yes, identify bounding source document number or approval reference and ensure the basis for concluding the source document fully bounds the proposed change is documented below: Justification:	10 CFR 50.54(q) Effectiveness Evaluation is not required. Enter justification below and complete Attachment 4, Part V.		Continue to Attachment 4 , 10 CFR 50.54(q) Screening Evaluation Form, Part III	
Bounding document attached (optional)		☐		

10 CFR 50.54(q) Screening Evaluation Form

Part III. Editorial Change	Yes	X	No	
Is this activity an editorial or typographical change only, such as formatting, paragraph numbering, spelling, or punctuation that does not change intent? Justification: This is an editorial change where the number and title of a procedure were corrected due to a new fleet procedure being issued. The new procedure still meets the intent of the superseded procedure This change does not change the intent of Section N of the MNS Emergency Plan.	10 CFR 50.54(q) Effectiveness Evaluation is not required. Enter justification and complete Attachment 4, Part V & VI.		Continue to Attachment 4, Part IV and address non editorial changes	

Part IV. Emergency Planning Element and Function Screen (Reference Attachment 1, Considerations for Addressing Screening Criteria) Does this activity involve any of the following, including program elements from NUREG-0654/FEMA REP-1 Section II? If answer is yes, then check box.		
1	10 CFR 50.47(b)(1) Assignment of Responsibility (Organization Control)	
1a	Responsibility for emergency response is assigned.	☐
1b	The response organization has the staff to respond and to augment staff on a continuing basis (24-7 staffing) in accordance with the emergency plan.	☐
2	10 CFR 50.47(b)(2) Onsite Emergency Organization	
2a	Process ensures that onshift emergency response responsibilities are staffed and assigned	☐
2b	The process for timely augmentation of onshift staff is established and maintained.	☐
3	10 CFR 50.47(b)(3) Emergency Response Support and Resources	
3a	Arrangements for requesting and using off site assistance have been made.	☐
3b	State and local staff can be accommodated at the EOF in accordance with the emergency plan. (NA for CR3)	☐
4	10 CFR 50.47(b)(4) Emergency Classification System	
4a	A standard scheme of emergency classification and action levels is in use. (Requires final approval of Screen and Evaluation by EP CFAM.)	☐
5	10 CFR 50.47(b)(5) Notification Methods and Procedures	
5a	Procedures for notification of State and local governmental agencies are capable of initiating notification of the declared emergency within 15 minutes (30 minutes for CR3) after declaration of an emergency and providing follow-up notification.	☐
5b	Administrative and physical means have been established for alerting and providing prompt instructions to the public within the plume exposure pathway. (NA for CR3)	☐
5c	The public ANS meets the design requirements of FEMA-REP-10, Guide for Evaluation of Alert and Notification Systems for Nuclear Power Plants, or complies with the licensee's FEMA-approved ANS design report and supporting FEMA approval letter. (NA for CR3)	☐

10 CFR 50.54(q) Screening Evaluation Form

Part IV. Emergency Planning Element and Function Screen (cont.)		
6	10 CFR 50.47(b)(6) Emergency Communications	
6a	Systems are established for prompt communication among principal emergency response organizations.	☐
6b	Systems are established for prompt communication to emergency response personnel.	☐
7	10 CFR 50.47(b)(7) Public Education and Information	
7a	Emergency preparedness information is made available to the public on a periodic basis within the plume exposure pathway emergency planning zone (EPZ). (NA for CR3)	☐
7b	Coordinated dissemination of public information during emergencies is established.	☐
8	10 CFR 50.47(b)(8) Emergency Facilities and Equipment	
8a	Adequate facilities are maintained to support emergency response.	☐
8b	Adequate equipment is maintained to support emergency response.	☐
9	10 CFR 50.47(b)(9) Accident Assessment	
9a	Methods, systems, and equipment for assessment of radioactive releases are in use.	☐
10	10 CFR 50.47(b)(10) Protective Response	
10a	A range of public PARs is available for implementation during emergencies. (NA for CR3)	☐
10b	Evacuation time estimates for the population located in the plume exposure pathway EPZ are available to support the formulation of PARs and have been provided to State and local governmental authorities. (NA for CR3)	☐
10c	A range of protective actions is available for plant emergency workers during emergencies, including those for hostile action events.	☐
10d	KI is available for implementation as a protective action recommendation in those jurisdictions that chose to provide KI to the public.	☐
11	10 CFR 50.47(b)(11) Radiological Exposure Control	
11a	The resources for controlling radiological exposures for emergency workers are established.	☐
12	10 CFR 50.47(b)(12) Medical and Public Health Support	
12a	Arrangements are made for medical services for contaminated, injured individuals.	☐
13	10 CFR 50.47(b)(13) Recovery Planning and Post-accident Operations	
13a	Plans for recovery and reentry are developed.	☐
14	10 CFR 50.47(b)(14) Drills and Exercises	
14a	A drill and exercise program (including radiological, medical, health physics and other program areas) is established.	☐
14b	Drills, exercises, and training evolutions that provide performance opportunities to develop, maintain, and demonstrate key skills are assessed via a formal critique process in order to identify weaknesses.	☐
14c	Identified weaknesses are corrected.	☐
15	10 CFR 50.47(b)(15) Emergency Response Training	
15a	Training is provided to emergency responders.	☐

10 CFR 50.54(q) Screening Evaluation Form

Part IV. Emergency Planning Element and Function Screen (cont.)		
16	10 CFR 50.47(b)(16) Emergency Plan Maintenance	
16a	Responsibility for emergency plan development and review is established.	☐
16b	Planners responsible for emergency plan development and maintenance are properly trained.	☐

PART IV. Conclusion If no Part IV criteria are checked, a 10 CFR 50.54(q) Effectiveness Evaluation is not required, then complete Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part V. Go to Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part VI for instructions describing the NRC required 30 day submittal.	☐
If any Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part IV criteria are checked, then complete Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part V and perform a 10 CFR 50.54(q) Effectiveness Evaluation. Shaded block requires final approval of Screen and Evaluation by EP CFAM.	☐

Part V. Signatures:		
Preparer Name (Print): Randy Gibson	Preparer Signature:	Date: 7/4/17
Reviewer Name (Print): Renard O. Burris	Reviewer Signature:	Date: 8/22/17
Approver (EP Manager Name (Print): Kevin L. Murray	Approver Signature:	Date: 8-24-17
Approver (CFAM, as required) Name (Print) N/A	Approver Signature: N/A	Date: N/A

Part VI. NRC Emergency Plan and Implementing Procedure Submittal Actions	
Create two EREG General Assignments. • One for EP to provide the 10 CFR 50.54(q) summary of the analysis, or the completed 10 CFR 50.54(q), to Licensing.	x
• One for Licensing to submit the 10 CFR 50.54(q) information to the NRC within 30 days after the change is put in effect.	x

QA RECORD

N. EXERCISES AND DRILLS

N.1.a Exercises

McGuire Nuclear Site will conduct emergency exercises in accordance with the requirements of 10CFR50 Appendix E.

The Emergency Operations Facility will participate in each exercise involving full participation by the affected state or local governments.

N.1.b Exercise Scenario/Response

The exercises will be designed to test the integrated capability of those involved and a major portion of the basic elements existing within the plans and organizations. The scenario for these exercises will be varied from exercise to exercise such that all major elements of the plans and organizations will be tested within an eight year period. The eight year exercise matrix is defined in Duke Energy Fleet EP governance documents.

N.2 Drills

McGuire Nuclear Station will conduct drills in accordance with 10CFR50, Appendix E to ensure that adequate emergency response capabilities are maintained between exercises. At least one drill will be conducted between exercises involving a combination of the principal functional areas of McGuire's on-site emergency response capabilities. {PIP 0-G98-0023}

Drills shall be conducted to test, develop and maintain skills in a particular operation. Drills may be a component of an exercise. Drills are developed, conducted, and critiqued under the auspices of Duke Energy Fleet Emergency Preparedness guidance documents.

N.2.a Communications

1. Monthly checks are conducted with the state of North Carolina and with Mecklenburg, Gaston, Catawba, Cabarrus, Lincoln, and Iredell Counties.

2. Monthly checks are also conducted with the NRC Headquarters from the Control Room and EOF. The ENS phone located in the TSC is checked in conjunction with the monthly call from the Control Room. Also a monthly call to the National Weather Service will be made to ensure accessibility.

3. Quarterly checks with Federal emergency response organizations are considered complete with the monthly call to the NRC. The state of North Carolina in the ingestion pathway is called monthly. The state of South Carolina is called quarterly.

4. Annual communications checks are performed between the Control Room, TSC, and EOF; and between the McGuire facility and the North Carolina EOC, Mecklenburg, Gaston, Catawba, Cabarrus, Lincoln and Iredell Counties' EOCs and the field monitoring teams.

5. Annual checks are conducted with Federal emergency response organizations, Dept. of Energy's Savannah River Plant and REAC/TS in Oak Ridge, Tenn. See PT/0/A/4600/089, Periodic Test of Control Room and TSC DEMNET, ENS and Duke ETS.

6. Periodic drills conducted with the ERO teams throughout each calendar year include the aspect of understanding the content of messages.

N.2.b Fire drills shall be conducted in accordance with AD-OP-ALL-0207 Fire Brigade and Hazmat Administrative Control.

N.2.c Medical emergency drills involving a simulated contaminated and injured individual which contains provisions for participation by the local ambulance service shall be conducted annually. The offsite portion of the medical drill may be performed as part of the required biennial exercise.

N.2.d Station environs and radiological monitoring drills (onsite and offsite) shall be conducted annually. These drills shall include collection and analysis of all sample media (e.g. water, vegetation, soil and air).

N.2.e Radiation Protection drills shall be conducted semi-annually which involve response to and analysis of, simulated elevated airborne and liquid samples and direct radiation measurements in the environment. Analysis of samples may be simulated in Radiation Protection drills.

NOTES:

1. Due to ALARA considerations actual elevated samples will not be used in drills.

2. Radiation Protection and Chemistry personnel perform analyses of similar nature routinely and therefore are not required to perform the analysis for drills.

N.3 Exercise and Drill Execution

The Emergency Planning Group is responsible for the overall development and direction of the biennial exercise. An Exercise Director and a key group of controllers will develop the exercise scenario, exercise messages, and simulated data for the site and off-site areas. The Exercise Director will, for each exercise, develop an exercise plan. This plan will include objectives of the exercise and evaluation criteria, the date, time, place, and participating organizations, the exercise scenario, a narrative summary of the event including such things as emergency classification at various times in the simulated accident, off-site assistance, some detail on plant conditions, and a description of the arrangements for official observers.

N.4 Exercise Critique

A critique will be held following each exercise. The critique will be a closed session between Duke and the Nuclear Regulatory Commission. During the critique, the Emergency Planning Manager, the Exercise Director, the NRC and other official observers from state, federal or local governments will make preliminary evaluations of the emergency response.

N.5 Critique Action Items

The verbal evaluations made during the critique and any follow-up written evaluation will be compiled into a Critique Summary. Items from the Critique Summary will be entered into Corrective Action Process. Through this process, items will be tracked until completed. Completion dates will be established during development of the critique summary. The Emergency Planning Manager acting under the authority of the Site Vice President will ensure resolution of each item.

10 CFR 50.54(q) Screening Evaluation Form

Screening and Evaluation Number	Applicable Sites	
EREG #: 2134821	BNP	☐
	CNS	☐
	CR3	☐
	HNP	☐
5AD #: 2134820	MNS	x
	ONS	☐
	RNP	☐
	GO	☐

Document and Revision

MNS Emergency Plan Section O RADIOLOGICAL EMERGENCY RESPONSE TRAINING rev 17-1

Part I. Description of Activity Being Reviewed (event or action, or series of actions that may result in a change to the emergency plan or affect the implementation of the emergency plan):

O.5 Training Period

"Training for LLEA personnel will be conducted in accordance with the Site Security Plan every two years. The new program for a Medical Emergency Response Team was implemented August 1, 1984. Nuclear System Directive 119 (Medical Emergency Response Team (MERT) Program) addresses this program."

changed to

"Training for LLEA personnel will be conducted in accordance with the Site Security Plan every two years. Refer to AD-SY-ALL-0280 Medical Emergency Response Team (MERT) and Technical Rescue Programs."

Part II. Activity Previously Reviewed?	Yes		No	X
Is this activity Fully bounded by an NRC approved 10 CFR 50.90 submittal or Alert and Notification System Design Report? If yes, identify bounding source document number or approval reference and ensure the basis for concluding the source document fully bounds the proposed change is documented below: Justification:	10 CFR 50.54(q) Effectiveness Evaluation is not required. Enter justification below and complete Attachment 4, Part V.		Continue to Attachment 4 , 10 CFR 50.54(q) Screening Evaluation Form, Part III	

10 CFR 50.54(q) Screening Evaluation Form

Bounding document attached (optional)	☐

Part III. Editorial Change	Yes	X	No	
Is this activity an editorial or typographical change only, such as formatting, paragraph numbering, spelling, or punctuation that does not change intent? Justification: This is an editorial change where the number and title of a procedure were corrected due to a new fleet procedure being issued. The new procedure still meets the intent of the superseded procedure This change does not change the intent of Section O of the MNS Emergency Plan. No EALs were affected.	10 CFR 50.54(q) Effectiveness Evaluation is not required. Enter justification and complete Attachment 4, Part V & VI.		Continue to Attachment 4, Part IV and address non editorial changes	

Part IV. Emergency Planning Element and Function Screen (Reference Attachment 1, Considerations for Addressing Screening Criteria)

Does this activity involve any of the following, including program elements from NUREG-0654/FEMA REP-1 Section II? If answer is yes, then check box.

1	10 CFR 50.47(b)(1) Assignment of Responsibility (Organization Control)	
1a	Responsibility for emergency response is assigned.	☐
1b	The response organization has the staff to respond and to augment staff on a continuing basis (24-7 staffing) in accordance with the emergency plan.	☐
2	10 CFR 50.47(b)(2) Onsite Emergency Organization	
2a	Process ensures that onshift emergency response responsibilities are staffed and assigned	☐
2b	The process for timely augmentation of onshift staff is established and maintained.	☐
3	10 CFR 50.47(b)(3) Emergency Response Support and Resources	
3a	Arrangements for requesting and using off site assistance have been made.	☐
3b	State and local staff can be accommodated at the EOF in accordance with the emergency plan. (NA for CR3)	☐
4	10 CFR 50.47(b)(4) Emergency Classification System	
4a	A standard scheme of emergency classification and action levels is in use. (Requires final approval of Screen and Evaluation by EP CFAM.)	☐
5	10 CFR 50.47(b)(5) Notification Methods and Procedures	
5a	Procedures for notification of State and local governmental agencies are capable of initiating notification of the declared emergency within 15 minutes (30 minutes for CR3) after declaration of an emergency and providing follow-up notification.	☐
5b	Administrative and physical means have been established for alerting and providing prompt instructions to the public within the plume exposure pathway. (NA for CR3)	☐
5c	The public ANS meets the design requirements of FEMA-REP-10, Guide for Evaluation of Alert and Notification Systems for Nuclear Power Plants, or complies with the licensee's FEMA-approved ANS design report and supporting FEMA approval letter. (NA for CR3)	☐

10 CFR 50.54(q) Screening Evaluation Form

Part IV. Emergency Planning Element and Function Screen (cont.)		
6	10 CFR 50.47(b)(6) Emergency Communications	
6a	Systems are established for prompt communication among principal emergency response organizations.	☐
6b	Systems are established for prompt communication to emergency response personnel.	☐
7	10 CFR 50.47(b)(7) Public Education and Information	
7a	Emergency preparedness information is made available to the public on a periodic basis within the plume exposure pathway emergency planning zone (EPZ). (NA for CR3)	☐
7b	Coordinated dissemination of public information during emergencies is established.	☐
8	10 CFR 50.47(b)(8) Emergency Facilities and Equipment	
8a	Adequate facilities are maintained to support emergency response.	☐
8b	Adequate equipment is maintained to support emergency response.	☐
9	10 CFR 50.47(b)(9) Accident Assessment	
9a	Methods, systems, and equipment for assessment of radioactive releases are in use.	☐
10	10 CFR 50.47(b)(10) Protective Response	
10a	A range of public PARs is available for implementation during emergencies. (NA for CR3)	☐
10b	Evacuation time estimates for the population located in the plume exposure pathway EPZ are available to support the formulation of PARs and have been provided to State and local governmental authorities. (NA for CR3)	☐
10c	A range of protective actions is available for plant emergency workers during emergencies, including those for hostile action events.	☐
10d	KI is available for implementation as a protective action recommendation in those jurisdictions that chose to provide KI to the public.	☐
11	10 CFR 50.47(b)(11) Radiological Exposure Control	
11a	The resources for controlling radiological exposures for emergency workers are established.	☐
12	10 CFR 50.47(b)(12) Medical and Public Health Support	
12a	Arrangements are made for medical services for contaminated, injured individuals.	☐
13	10 CFR 50.47(b)(13) Recovery Planning and Post-accident Operations	
13a	Plans for recovery and reentry are developed.	☐
14	10 CFR 50.47(b)(14) Drills and Exercises	
14a	A drill and exercise program (including radiological, medical, health physics and other program areas) is established.	☐
14b	Drills, exercises, and training evolutions that provide performance opportunities to develop, maintain, and demonstrate key skills are assessed via a formal critique process in order to identify weaknesses.	☐
14c	Identified weaknesses are corrected.	☐
15	10 CFR 50.47(b)(15) Emergency Response Training	
15a	Training is provided to emergency responders.	☐

10 CFR 50.54(q) Screening Evaluation Form

Part IV. Emergency Planning Element and Function Screen (cont.)		
16	10 CFR 50.47(b)(16) Emergency Plan Maintenance	
16a	Responsibility for emergency plan development and review is established.	☐
16b	Planners responsible for emergency plan development and maintenance are properly trained.	☐
PART IV. Conclusion If no Part IV criteria are checked, a 10 CFR 50.54(q) Effectiveness Evaluation is not required, then complete Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part V. Go to Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part VI for instructions describing the NRC required 30 day submittal.		☐
If any Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part IV criteria are checked, then complete Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part V and perform a 10 CFR 50.54(q) Effectiveness Evaluation. Shaded block requires final approval of Screen and Evaluation by EP CFAM.		☐

Part V. Signatures:		
Preparer Name (Print): Randy Gibson	Preparer Signature:	Date: 7/14/17
Reviewer Name (Print): Renard O. Burris	Reviewer Signature:	Date: 8/22/17
Approver (EP Manager Name (Print): Kevin L. Murray	Approver Signature:	Date: 8-24-17
Approver (CFAM, as required) Name (Print) N/A	Approver Signature: N/A	Date: N/A

Part VI. NRC Emergency Plan and Implementing Procedure Submittal Actions	
Create two EREG General Assignments. • One for EP to provide the 10 CFR 50.54(q) summary of the analysis, or the completed 10 CFR 50.54(q), to Licensing.	x
• One for Licensing to submit the 10 CFR 50.54(q) information to the NRC within 30 days after the change is put in effect.	x

QA RECORD

O. RADIOLOGICAL EMERGENCY RESPONSE TRAINING

O.1 Off-site Agency Training

O.1.a Emergency response training is provided to those organizations who may be called upon to provide assistance in the event of an emergency at McGuire Nuclear Site. See paragraph 0.1.b for exceptions. The scope of the training is to familiarize offsite emergency agencies, who could be asked to respond to McGuire Nuclear Site emergencies, by providing information necessary to allow them to protect themselves and others in providing fire, governmental, law enforcement, and medical support services. This program is further defined in the appropriate approved management document (i.e. Functional Area Manual, lower tier training document, etc.) {0-M98-4534}. Specific lesson guides for these presentations and documentation of the training is available at the Site.

O.1.b Off-site Support Agency - Participation in Training

See Appendix 5, Agreement Letters and the appropriate State/Local Plans. Training will not be conducted for the Oak Ridge, Department of Energy, Radiation Emergency Assistance Center Training Site (REACTS) or the Department of Energy, Savannah River Operations Office by Duke Power personnel except by request from the appropriate agency.

O.2 Site Organization Training

Unless approved by the Emergency Planning Manager, initial training will be completed by newly assigned personnel prior to becoming an ERO member. As long as an individual serves on the ERO he/she shall receive continuing training. Initial and continuing training requirements are outlined in the appropriate management approved document (i.e. Functional Area Manual, lower tier training document, etc.). Specific lesson outlines and documentation of the training is available at the site. Practical drills will be conducted for each group within the organization to allow the individuals to perform their assigned functions. Drill action items will be developed to make enhancements in areas identified.

O.3 First Aid Training

A Medical Emergency Response Team (MERT) program consisting of personnel assigned to the Security organization has been implemented. MERT members are trained to provide basic medical care to employees and visitors who become victims of sudden illness or injury. MERT members are also trained to conduct confined space rescue for individuals who are involved in confined space accidents. Technical rescue training is provided such that rescues can be made for incidences involving workers trapped or stranded from elevated structures.

O.4 Training For Radiological Emergency Response Personnel

Training requirements for the following groups are described in the appropriate management approved document (i.e. Functional Area Manual, EP Group Manual, lower tier training document, etc.). Training objectives and lesson plans are maintained in the site training files.

a. Directors and Coordinators of Response Organizations

b. Personnel Responsible for Accident Assessment

c. Radiological Monitoring Teams and Radiological Assessment Personnel

d. Police, Security and Fire Fighting Personnel

e. Repair and Recovery Teams

f. First Aid and Rescue Personnel

g. Local Support Services Personnel

h. Medical Support Personnel

i. All Emergency Response Organization Personnel

j. Personnel Responsible for Transmission of Emergency Information and Instructions

k. Personnel Responsible for Data Coordination

O.5 Training Period

Emergency Response Training is required on an annual basis (+/- three (3) months) except as noted on the Emergency Planning Training Matrix which is contained in the appropriate management approved document (i.e. Functional Area Manual, lower tier training document, etc.). Training for LLEA personnel will be conducted in accordance with the Site Security Plan every two years. Refer to AD-SY-ALL-0280 Medical Emergency Response Team (MERT) and Technical Rescue Programs.

<< 10 CFR 50.54(q) Screening Evaluation Form >>

Screening and Evaluation Number	Applicable Sites	
EREG #: 02146317	BNP	☐
	CNS	☐
	CR3	☐
	HNP	☐
5AD #: 02147009	MNS	☒
	ONS	☐
	RNP	☐
	GO	☐

Document and Revision	
MNS Emergency Plan Section P.9 (DRR 02143196)	MC-EPLAN-MANUAL McGuire Emergency Plan, Section P

Part I. Description of Activity Being Reviewed (event or action, or series of actions that may result in a change to the emergency plan or affect the implementation of the emergency plan):

Revising MNS Emergency Plan Section P.9 (DRR 02143196) to change the third sentence from "Guidance for performing the assessment against the performance indicators is provided in the Emergency Preparedness Administrative Procedure AD-EP-ALL-0001" to "Guidance for performing the assessment against the performance indicators is provided in the Administrative Procedure AD-NO-ALL-1001."

Part II. Activity Previously Reviewed?	Yes ☐	No ☒
Is this activity Fully bounded by an NRC approved 10 CFR 50.90 submittal or Alert and Notification System Design Report? If yes, identify bounding source document number or approval reference and ensure the basis for concluding the source document fully bounds the proposed change is documented below: Justification:	10 CFR 50.54(q) Effectiveness Evaluation is not required. Enter justification below and complete Attachment 4, Part V.	Continue to Attachment 4 , 10 CFR 50.54(q) Screening Evaluation Form, Part III
Bounding document attached (optional)		☐

<< 10 CFR 50.54(q) Screening Evaluation Form >>

Part III. Editorial Change	Yes ☒	No ☐
Is this activity an editorial or typographical change only, such as formatting, paragraph numbering, spelling, or punctuation that does not change intent? Justification: Correcting reference to a fleet procedure that is no longer applicable (AD-EP-ALL-0001 is being superseded by AD-NO-ALL-1001 and AD-BO-ALL-0002. The relevant procedure for the MNS Emergency Plan is AD-NO-ALL-1001.	10 CFR 50.54(q) Effectiveness Evaluation is not required. Enter justification and complete Attachment 4, Part V & VI.	Continue to Attachment 4, Part IV and address non editorial changes

Part IV. Emergency Planning Element and Function Screen (Reference Attachment 1, Considerations for Addressing Screening Criteria) Does this activity involve any of the following, including program elements from NUREG-0654/FEMA REP-1 Section II? If answer is yes, then check box.		
1	10 CFR 50.47(b)(1) Assignment of Responsibility (Organization Control)	
1a	Responsibility for emergency response is assigned.	☐
1b	The response organization has the staff to respond and to augment staff on a continuing basis (24-7 staffing) in accordance with the emergency plan.	☐
2	10 CFR 50.47(b)(2) Onsite Emergency Organization	
2a	Process ensures that onshift emergency response responsibilities are staffed and assigned	☐
2b	The process for timely augmentation of onshift staff is established and maintained.	☐
3	10 CFR 50.47(b)(3) Emergency Response Support and Resources	
3a	Arrangements for requesting and using off site assistance have been made.	☐
3b	State and local staff can be accommodated at the EOF in accordance with the emergency plan. (NA for CR3)	☐
4	10 CFR 50.47(b)(4) Emergency Classification System	
4a	A standard scheme of emergency classification and action levels is in use. (Requires final approval of Screen and Evaluation by EP CFAM.)	☐
5	10 CFR 50.47(b)(5) Notification Methods and Procedures	
5a	Procedures for notification of State and local governmental agencies are capable of alerting them of the declared emergency within 15 minutes (60 minutes for CR3) after declaration of an emergency and providing follow-up notification.	☐
5b	Administrative and physical means have been established for alerting and providing prompt instructions to the public within the plume exposure pathway. (NA for CR3)	☐
5c	The public ANS meets the design requirements of FEMA-REP-10, Guide for Evaluation of Alert and Notification Systems for Nuclear Power Plants, or complies with the licensee's FEMA-approved ANS design report and supporting FEMA approval letter. (NA for CR3)	☐

<< 10 CFR 50.54(q) Screening Evaluation Form >>

Part IV. Emergency Planning Element and Function Screen (cont.)		
6	10 CFR 50.47(b)(6) Emergency Communications	
6a	Systems are established for prompt communication among principal emergency response organizations.	☐
6b	Systems are established for prompt communication to emergency response personnel.	☐
7	10 CFR 50.47(b)(7) Public Education and Information	
7a	Emergency preparedness information is made available to the public on a periodic basis within the plume exposure pathway emergency planning zone (EPZ). (NA for CR3)	☐
7b	Coordinated dissemination of public information during emergencies is established.	☐
8	10 CFR 50.47(b)(8) Emergency Facilities and Equipment	
8a	Adequate facilities are maintained to support emergency response.	☐
8b	Adequate equipment is maintained to support emergency response.	☐
9	10 CFR 50.47(b)(9) Accident Assessment	
9a	Methods, systems, and equipment for assessment of radioactive releases are in use.	☐
10	10 CFR 50.47(b)(10) Protective Response	
10a	A range of public PARs is available for implementation during emergencies. (NA for CR3)	☐
10b	Evacuation time estimates for the population located in the plume exposure pathway EPZ are available to support the formulation of PARs and have been provided to State and local governmental authorities. (NA for CR3)	☐
10c	A range of protective actions is available for plant emergency workers during emergencies, including those for hostile action events.	☐
10d	KI is available for implementation as a protective action recommendation in those jurisdictions that chose to provide KI to the public.	☐
11	10 CFR 50.47(b)(11) Radiological Exposure Control	
11a	The resources for controlling radiological exposures for emergency workers are established.	☐
12	10 CFR 50.47(b)(12) Medical and Public Health Support	
12a	Arrangements are made for medical services for contaminated, injured individuals.	☐
13	10 CFR 50.47(b)(13) Recovery Planning and Post-accident Operations	
13a	Plans for recovery and reentry are developed.	☐
14	10 CFR 50.47(b)(14) Drills and Exercises	
14a	A drill and exercise program (including radiological, medical, health physics and other program areas) is established.	☐
14b	Drills, exercises, and training evolutions that provide performance opportunities to develop, maintain, and demonstrate key skills are assessed via a formal critique process in order to identify weaknesses.	☐
14c	Identified weaknesses are corrected.	☐
15	10 CFR 50.47(b)(15) Emergency Response Training	
15a	Training is provided to emergency responders.	☐

<< 10 CFR 50.54(q) Screening Evaluation Form >>

Part IV. Emergency Planning Element and Function Screen (cont.)		
16	10 CFR 50.47(b)(16) Emergency Plan Maintenance	
16a	Responsibility for emergency plan development and review is established.	☐
16b	Planners responsible for emergency plan development and maintenance are properly trained.	☐
PART IV. Conclusion If no Part IV criteria are checked, a 10 CFR 50.54(q) Effectiveness Evaluation is not required, then complete Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part V. Go to Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part VI for instructions describing the NRC required 30 day submittal.		☐
Justification: If any Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part IV criteria are checked, then complete Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part V and perform a 10 CFR 50.54(q) Effectiveness Evaluation. Shaded block requires final approval of Screen and Evaluation by EP CFAM.		☐

Part V. Signatures:		
Preparer Name (Print): Ernestine M Kuhr	Preparer Signature:	Date: 8/29/17
Reviewer Name (Print): Randy Gibson	Reviewer Signature:	Date: 9/4/17
Approver (EP Manager Name (Print): Kevin L. Murray	Approver Signature:	Date: 9-6-17
Approver (CFAM, as required) Name (Print) N/A	Approver Signature: N/A	Date: N/A

QA RECORD

P. RESPONSIBILITY FOR THE PLANNING EFFORT

To assure that responsibilities for plan development, review and distribution of emergency plans are established and that the Emergency Planning staff are properly trained.

P.1 Emergency Planning Staff Training

Emergency Planning Group personnel will attend training/workshops, information exchange meetings with other licensees, and conferences held by industry and government agencies, as available, to maintain current knowledge of the overall planning effort. The Emergency Planning Manager is required to attend offsite training on an annual basis. This training will be documented in site Emergency Planning files or the Training group database (i.e. People Soft, etc.).

P.2 Emergency Response Planning

The Site Vice President has the overall authority and responsibility for the Site Emergency Plan. This planning effort is delegated to the Emergency Planning Manager.

P.3 Site Emergency Planning Manager

The Emergency Planning Manager has the overall authority and responsibility for site emergency response planning as well as the responsibility for the development and updating of the site Emergency Plan and coordination of this plan with other response organizations.

P.4 Review of Emergency Plan

Review and updating of the site Emergency Plan and Emergency Plan Implementing Procedures shall be certified to be current on an annual basis. Any changes identified by drills and exercises shall be incorporated into the Site Emergency Plan.

On an annual basis, the Emergency Planning Manager will provide each state and local organization responsible for off-site activation and protective action decision-making, a copy of the nuclear site procedures appropriate for their area on emergency classification and notification. A response will be requested by letter within 30 days that a review has been completed with concurrence with the EAL's used for event classification and for protective action recommendations. If problem areas are identified, the Emergency Planning Manager will ensure resolution.

P.5 Distribution of Revised Plans

The Emergency Plan and approved changes shall be forwarded to individuals and organizations listed in App. 6. Revised pages shall be dated and marked to show where changes have been made.

P.6 Supporting Plans

Figure P-1 gives a detailed listing of supporting plans to the McGuire Nuclear Site Emergency Plan.

P.7 Implementing Procedures

Written procedures will be established, implemented, and maintained covering the activities associated with emergency plan implementation. Each procedure, and changes thereto, shall be reviewed and approved by the responsible implementing manager prior to implementation and shall be reviewed periodically as set forth in administrative procedures.

McGuire Emergency Plan Implementing Procedures are listed in Figure P-2 with a reference to the section of Emergency Plan implemented by each procedure. Figure P-3 contains the distribution list for McGuire Emergency Plan Implementing Procedures.

P.8 Table of Contents

The McGuire Nuclear Site Emergency Plan contains a specific table of contents. The McGuire Nuclear Site Emergency Plan has been cross referenced to the applicable sections of NUREG-0654 Rev. 1.

P.9 Audit of Emergency Plan

The Nuclear Safety Review Board Chairman will arrange for an independent review of McGuire Nuclear Station's Emergency Preparedness Program as necessary, based on an assessment against performance indicators, and as soon as reasonably practicable after a change occurs in personnel, procedures, equipment, or facilities that potentially could adversely affect emergency preparedness, but no longer than 12 months after the change. In any case, all elements of the emergency preparedness program will be reviewed at least once every 24 months. Guidance for performing the assessment against the performance indicators is provided in the Emergency Preparedness Administrative Procedure Procedure AD-NO-ALL-1001. The independent review will be conducted by the Nuclear Oversight - Audits and will include the following plans, procedures, training programs, drills/exercises, equipment, and State/local government interfaces:

1. McGuire Nuclear Site Emergency Plan and Implementing Procedures
2. State/Local Support Agency Training Program
3. Site Training Program
4. Public and Media Training/Awareness
5. Equipment - Communications, Monitoring, Meteorological, Public Alerting
6. State/Local Plan Interface

The review findings will be submitted to the appropriate corporate and nuclear site management. Appropriate portions of the review findings will be reported to the involved federal, state, and local organizations. The corporate or nuclear site management, as appropriate, will evaluate the findings affecting their area of responsibility and ensure effective corrective actions are taken. The result of the review, along with recommendations for improvements, will be documented and retained for a period of five years.

P.10 Telephone Number Updates

Telephone numbers reflected in the online organization charts will be updated quarterly in accordance with PT/0/A/4600/091, Periodic Test of Technical Support Center Communications and Supplies.

DUKE ENERGY
MCGUIRE NUCLEAR SITE
FIGURE P-1

SUPPORTING PLANS

1. North Carolina Emergency Response Plan in support of McGuire Nuclear Site

2. South Carolina Operational Radiological Emergency Response Plan in support of Fixed Nuclear Facilities (McGuire Nuclear Site)

3. Iredell County, N.C., Radiological Emergency Response Plan in Support of the McGuire Nuclear Site

4. Mecklenburg County, N.C., Radiological Emergency Response Plan in Support of the McGuire Nuclear Site

5. Gaston County, N.C., Radiological Emergency Response Plan in Support of the McGuire Nuclear Site

6. Lincoln County, N.C., Radiological Emergency Response Plan in Support of the McGuire Nuclear Site

7. Catawba County, N.C., Radiological Emergency Response Plan in Support of the McGuire Nuclear Site

8. Cabarrus County, N.C., Radiological Emergency Response Plan in Support of the McGuire Nuclear Site

9. Emergency Response Plan, Water Reactors Division, Westinghouse Electric Corporation

10. N.R.C. Region II Incident Response Plan

11. Interagency Radiological Assistance Plan - Region 3 - U.S. Department of Energy

12. INPO Emergency Response Plan

MCGUIRE

FIGURE P-2
PAGE 1 OF 4
EMERGENCY PLAN IMPLEMENTING PROCEDURES

Procedure #	Title	Emergency Plan Section Implemented
AP/0/A/5500/047	Security Events (Proprietary Info)	Section J
RP/0/A/5700/000	Classification of Emergency	Section D, E, I
RP/0/A/5700/001	Notification of Unusual Event	Section D, E, I.1, J.7
RP/0/A/5700/002	Alert	Section D, E, I.1, J.7
RP/0/A/5700/003	Site Area Emergency	Section D, E, I.1, J.7, M.1
RP/0/A/5700/004	General Emergency	Section D, E, I.1, J.7, M.1
RP/0/A/5700/006	Natural Disasters	Section D
RP/0/A/5700/007	Earthquake	Section D, H.6
RP/0/A/5700/008	Release of Toxic or Flammable Gases	Section D
RP/0/A/5700/09	Collisions/Explosions	Section D
RP/0/A/5700/010	NRC Immediate Notification	Section D
RP/0/A/5700/011	Conducting a Site Assembly, Site Evacuation or Containment Evacuation	Section E.2, J, K.7
RP/0/A/5700/012	Activation of the Technical Support Center (TSC)	Section B, H, M.1

MCGUIRE
FIGURE P-2
PAGE 2 OF 4
EMERGENCY PLAN IMPLEMENTING PROCEDURES

Procedure #	Title	Emergency Plan Section Implemented
RP/0/A/5700/018	Notifications to the State and Counties from the TSC	Section E
RP/0/A/5700/019	Core Damage Assessment	
RP/0/A/5700/020	Activation of the Operations Support Center (OSC)	Section H
RP/0/A/5700/022	Spill/Incident Response Procedure	Appendices 7, 8, 9
RP/0/A/5700/024	Recovery and Reentry	Section M
RP/0/A/5700/026	Operations/Engineering Required Actions in the Technical Support Center (TSC)	
RP/0/B/5700/023	Nuclear Communications Emergency Response Plan	Section G
RP/0/B/5700/029	Notifications to Offsite Agencies from the Control Room	Section E
HP/0/B/1009/002	Alternative Methods for Determining Dose Rate within the Reactor Building	Section D, I.6
HP/0/B/1009/003	Recovery Plan	Section M
HP/0/B/1009/006	Procedure for Quantifying High Level Gaseous Radioactivity Release During Accident Conditions	Section D, I.3

MCGUIRE FIGURE P-2 PAGE 3 OF 4 EMERGENCY PLAN IMPLEMENTING PROCEDURES		
Procedure #	Title	Emergency Plan Section Implemented
HP/0/B/1009/010	Releases of Liquid Radioactive Materials Exceeding Selected Licensee Commitments	Section D, I.3
HP/0/B/1009/021	Estimating Food Chain Doses Under Post-Accident Conditions	I.10
HP/0/B/1009/022	Accident and Emergency Response	Section I, Section E
HP/0/B/1009/023	Environmental Monitoring for Emergency Conditions	Section E, I.7, I.8, I.9
HP/0/B1009/024	Personnel Monitoring for Emergency Conditions	J.3, K.7

MCGUIRE FIGURE P-2 PAGE 4 OF 4 EMERGENCY PLAN IMPLEMENTING PROCEDURES		
Procedure #	Title	Emergency Plan Section Implemented
AD-EP-ALL-0202	Emergency Response Offsite Dose Assessment	Section I
AD-EP-ALL-0204	Distribution of Potassium Iodide Tablets in the Event of a Radioiodine Release	J.6
AD-EP-ALL-0203	Protocol for the Field Monitoring Coordinator During Emergency Conditions	Section I.8
SR/0/A/2000/001	Standard Procedure for Corporate Communications Response to the Emergency Operations Facility	Section G
SR/0/A/2000/003	Activation of the Emergency Operations Facility	Section B, H, M.1
SR/0/A/2000/004	Notifications to States and Counties from the EOF	Section E
EP Manual Section 1.1	Emergency Organization	Sections B, E, H
PT/0/A/4600/088	Functional Check of Emergency Vehicle and Equipment	Section H.11

FIGURE P-3
McGUIRE NUCLEAR SITE
EMERGENCY PLAN IMPLEMENTING PROCEDURES DISTRIBUTION

Control No.

2. Radiation Protection Manager
3. Emergency Planning Manager, Oconee
4. McGuire Nuclear Training
5. Operations Staff Manager
6. Site Emergency Planner, MG01EP
7. NRC Site Representative, McGuire Nuclear Site (forwarded by McGuire Emergency Planning)
8. Operator Training Director
13. Emergency Planning Manager, CNS
14. Director, Division of Radiation Protection
16. NCEM REP Program Manager
17. Tina Kuhr, Emergency Planning Consultant/NSRB Staff
19. Emergency Operations Facility, EOF Director's Area (MNS Emergency Planning, custodians)
20. McGuire Nuclear Site, Document Control
21. NCEM Western Branch Office Manager
22. NRC Document Control Desk, Washington D.C. (forwarded 1 copy by McGuire Emergency Planning)

FIGURE P-3
McGUIRE NUCLEAR SITE
EMERGENCY PLAN IMPLEMENTING PROCEDURES DISTRIBUTION

Control No.

23. NRC, Regional Administrator, Atlanta, GA (forwarded 1 copy by McGuire Emergency Planning)
24. NRC, Regional Administrator, Atlanta, GA (forwarded 1 copy by McGuire Emergency Planning)
25. NRC Office of Nuclear Materials Safety and Safeguards

10 CFR 50.54(q) Screening Evaluation Form

Screening and Evaluation Number	Applicable Sites	
EREG #: 2134828	BNP	☐
	CNS	☐
	CR3	☐
	HNP	☐
5AD #: 2134827	MNS	x
	ONS	☐
	RNP	☐
	GO	☐

Document and Revision
MNS Emergency Plan Section Q Appendices rev 17-1

Part I. Description of Activity Being Reviewed (event or action, or series of actions that may result in a change to the emergency plan or affect the implementation of the emergency plan):

Section Q
Appendix Index added page number and rev number
Appendix 1 renumbered page numbers
Appendix 9 step 4.3.3 Training added references to Duke fleet procedure AD-TQ-ALL-0086 Fire Brigade and Hazmat Training

Part II. Activity Previously Reviewed?	Yes		No	X
Is this activity Fully bounded by an NRC approved 10 CFR 50.90 submittal or Alert and Notification System Design Report? If yes, identify bounding source document number or approval reference and ensure the basis for concluding the source document fully bounds the proposed change is documented below: Justification:	10 CFR 50.54(q) Effectiveness Evaluation is not required. Enter justification below and complete Attachment 4, Part V.		Continue to Attachment 4 , 10 CFR 50.54(q) Screening Evaluation Form, Part III	
Bounding document attached (optional)				☐

Part III. Editorial Change	Yes	X	No	

10 CFR 50.54(q) Screening Evaluation Form

Is this activity an editorial or typographical change only, such as formatting, paragraph numbering, spelling, or punctuation that does not change intent? Justification: This is an editorial change where page number and rev number were added to Appendix Index. This is an editorial change where page numbers were corrected on Appendix 1. This is an editorial change where the number and title of a procedure were added due to a new fleet procedure being issued. The new procedure still meets the intent of the requirements of Appendix 9. These changes do not change the intent of Section Q of the MNS Emergency Plan.	10 CFR 50.54(q) Effectiveness Evaluation is not required. Enter justification and complete Attachment 4, Part V & VI.	Continue to Attachment 4, Part IV and address non editorial changes

Part IV. Emergency Planning Element and Function Screen (Reference Attachment 1, Considerations for Addressing Screening Criteria)

Does this activity involve any of the following, including program elements from NUREG-0654/FEMA REP-1 Section II? If answer is yes, then check box.

1	10 CFR 50.47(b)(1) Assignment of Responsibility (Organization Control)	
1a	Responsibility for emergency response is assigned.	☐
1b	The response organization has the staff to respond and to augment staff on a continuing basis (24-7 staffing) in accordance with the emergency plan.	☐
2	10 CFR 50.47(b)(2) Onsite Emergency Organization	
2a	Process ensures that onshift emergency response responsibilities are staffed and assigned	☐
2b	The process for timely augmentation of onshift staff is established and maintained.	☐
3	10 CFR 50.47(b)(3) Emergency Response Support and Resources	
3a	Arrangements for requesting and using off site assistance have been made.	☐
3b	State and local staff can be accommodated at the EOF in accordance with the emergency plan. (NA for CR3)	☐
4	10 CFR 50.47(b)(4) Emergency Classification System	
4a	A standard scheme of emergency classification and action levels is in use. (Requires final approval of Screen and Evaluation by EP CFAM.)	☐
5	10 CFR 50.47(b)(5) Notification Methods and Procedures	
5a	Procedures for notification of State and local governmental agencies are capable of initiating notification of the declared emergency within 15 minutes (30 minutes for CR3) after declaration of an emergency and providing follow-up notification.	☐
5b	Administrative and physical means have been established for alerting and providing prompt instructions to the public within the plume exposure pathway. (NA for CR3)	☐
5c	The public ANS meets the design requirements of FEMA-REP-10, Guide for Evaluation of Alert and Notification Systems for Nuclear Power Plants, or complies with the licensee's FEMA-approved ANS design report and supporting FEMA approval letter. (NA for CR3)	☐

Part IV. Emergency Planning Element and Function Screen (cont.)

10 CFR 50.54(q) Screening Evaluation Form

6	10 CFR 50.47(b)(6) Emergency Communications	
6a	Systems are established for prompt communication among principal emergency response organizations.	☐
6b	Systems are established for prompt communication to emergency response personnel.	☐
7	10 CFR 50.47(b)(7) Public Education and Information	
7a	Emergency preparedness information is made available to the public on a periodic basis within the plume exposure pathway emergency planning zone (EPZ). (NA for CR3)	☐
7b	Coordinated dissemination of public information during emergencies is established.	☐
8	10 CFR 50.47(b)(8) Emergency Facilities and Equipment	
8a	Adequate facilities are maintained to support emergency response.	☐
8b	Adequate equipment is maintained to support emergency response.	☐
9	10 CFR 50.47(b)(9) Accident Assessment	
9a	Methods, systems, and equipment for assessment of radioactive releases are in use.	☐
10	10 CFR 50.47(b)(10) Protective Response	
10a	A range of public PARs is available for implementation during emergencies. (NA for CR3)	☐
10b	Evacuation time estimates for the population located in the plume exposure pathway EPZ are available to support the formulation of PARs and have been provided to State and local governmental authorities. (NA for CR3)	☐
10c	A range of protective actions is available for plant emergency workers during emergencies, including those for hostile action events.	☐
10d	KI is available for implementation as a protective action recommendation in those jurisdictions that chose to provide KI to the public.	☐
11	10 CFR 50.47(b)(11) Radiological Exposure Control	
11a	The resources for controlling radiological exposures for emergency workers are established.	☐
12	10 CFR 50.47(b)(12) Medical and Public Health Support	
12a	Arrangements are made for medical services for contaminated, injured individuals.	☐
13	10 CFR 50.47(b)(13) Recovery Planning and Post-accident Operations	
13a	Plans for recovery and reentry are developed.	☐
14	10 CFR 50.47(b)(14) Drills and Exercises	
14a	A drill and exercise program (including radiological, medical, health physics and other program areas) is established.	☐
14b	Drills, exercises, and training evolutions that provide performance opportunities to develop, maintain, and demonstrate key skills are assessed via a formal critique process in order to identify weaknesses.	☐
14c	Identified weaknesses are corrected.	☐
15	10 CFR 50.47(b)(15) Emergency Response Training	
15a	Training is provided to emergency responders.	☐
Part IV. Emergency Planning Element and Function Screen (cont.)		
16	10 CFR 50.47(b)(16) Emergency Plan Maintenance	
16a	Responsibility for emergency plan development and review is established.	☐

10 CFR 50.54(q) Screening Evaluation Form

16b	Planners responsible for emergency plan development and maintenance are properly trained.	☐

PART IV. Conclusion If no Part IV criteria are checked, a 10 CFR 50.54(q) Effectiveness Evaluation is not required, then complete Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part V. Go to Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part VI for instructions describing the NRC required 30 day submittal.	☐
If any Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part IV criteria are checked, then complete Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part V and perform a 10 CFR 50.54(q) Effectiveness Evaluation. Shaded block requires final approval of Screen and Evaluation by EP CFAM.	☐

Part V. Signatures:		
Preparer Name (Print): Randy Gibson	Preparer Signature:	Date: 7/6/17
Reviewer Name (Print): Renard O. Burris	Reviewer Signature:	Date: 8/22/17
Approver (EP Manager Name (Print): Kevin L. Murray	Approver Signature:	Date: 8-24-17
Approver (CFAM, as required) Name (Print) N/A	Approver Signature: N/A	Date: N/A

Part VI. NRC Emergency Plan and Implementing Procedure Submittal Actions

Create two EREG General Assignments. • One for EP to provide the 10 CFR 50.54(q) summary of the analysis, or the completed 10 CFR 50.54(q), to Licensing.	x
• One for Licensing to submit the 10 CFR 50.54(q) information to the NRC within 30 days after the change is put in effect.	x

QA RECORD

DUKE ENERGY
MCGUIRE NUCLEAR SITE

SECTION Q

APPENDIX INDEX

APPENDIX 1

1.0 DEFINITIONS

AFFECTED PERSONS
Persons who have received radiation exposure or have been physically injured as a result of an accident to a degree requiring special attention as individuals, e.g., decontamination, first aid or medical services.

ANNUAL
For periodic emergency planning requirements, annual is defined as twelve months, with a maximum interval of 456 days.

ASSESSMENT ACTION
Those actions taken during or after an accident to obtain and process information that is necessary to make decisions to implement specific emergency measures.

BIENNIAL
For periodic emergency planning requirements, biennial is defined as at least once every two years, with a maximum interval of 912 days. (Note that this does not apply to the scheduling of biennial exercises. An exercise can occur at any time during the second calendar year after the previous exercise.)

CORRECTIVE ACTIONS
Emergency measures taken to ameliorate or terminate an emergency situation at or near the source of the problem to prevent an uncontrolled release of radioactive material or to reduce the magnitude of the release, e.g., shutting down equipment, fire-fighting, repair and damage control.

DEGRADING

- Plant parameters (ex. temperature, pressure, level, voltage, frequency) are trending unfavorably away from expected or desired values **AND** plant conditions could result in a higher classification or Protective Action Recommendation (PAR) before the next follow-up notification.

- Site conditions (ex. wind, ice/snow, ground tremors, hazardous/toxic/radioactive material leak, fire, security event) impacting plant operations or personnel safety are worsening **AND** plant conditions could result in a higher classification or Protective Action Recommendation (PAR) before the next follow-up notification.

DRILL
A drill is a supervised instruction period aimed at testing, developing, and maintaining skills in a particular operation.

EMERGENCY ACTION LEVELS (EAL's)
A pre-determined, site-specific, observable threshold for a plant Initiating Condition that places the plant in a given emergency class. An EAL can be: an instrument reading; an equipment status indicator; a measurable parameter (onsite or offsite); a discrete, or another phenomenon which, if it occurs, indicates entry into a particular emergency class.

EMERGENCY OPERATIONS FACILITY (EOF)
The Emergency Operations Facility is the facility utilized for direction and control of all emergency and recovery activities with emphasis on the coordination of off-site activities such as dispatching mobile emergency monitoring teams, communications with local, state and federal agencies, and coordination of corporate and other outside support.

EMERGENCY PLANNING ZONE (EPZ)
The area for which planning is needed to assure that prompt and effective actions can be taken to protect the public in the event of an accident. The plume exposure EPZ is about 10 miles in radius and the ingestion exposure EPZ is about 50 miles in radius.

EXCLUSION AREA
The nuclear site property out to a radius of 2500 feet, that meets the 10CFR100 definition.

EXERCISE
An exercise is an event that tests the integrated capability and a major portion of the basic elements existing within emergency preparedness plans and organizations.

IMPROVING
- Plant parameters (ex. temperature, pressure, level, voltage, frequency) are trending favorably toward expected or desired values **AND** plant conditions could result in a lower classification or emergency termination before the next follow-up notification.

- Site conditions (ex. wind, ice/snow, ground tremors, hazardous/toxic/radioactive material leak, fire, security event) have become less of a threat to plant operations or personnel safety **AND** plant conditions could result in a lower classification or emergency termination before the next follow-up notification.

INGESTION EXPOSURE PATHWAY
The principle exposure from this pathway would be from ingestion of contaminated water or foods such as milk or fresh vegetables. The time of potential exposure could range in length from hours to months.

MONTHLY
For periodic emergency planning requirements, monthly is defined as once each month, with a maximum interval of 38 days.

OPERATIONAL SUPPORT CENTER (OSC)
In the event of an emergency, shift support personnel (e.g., auxiliary operators and technicians) other than those required and allowed in the control room shall report to this center for further orders and assignment.

PLUME EXPOSURE PATHWAY
The principle exposure sources from this pathway are (a) external exposure to gamma radiation from the plume and from deposited material and (b) inhalation exposure from the passing radioactive plume. The time of potential exposure could range from hours to days.

POPULATION-AT-RISK
Those persons for whom protective actions are being or would be taken.

PROTECTED AREA
An area encompassed by physical barriers and to which access is controlled.

PROTECTIVE ACTIONS
Those emergency measures taken after an uncontrolled release of radioactive materials has occurred, for the purpose of preventing or minimizing radiological exposures to persons that would be likely to occur if the actions were not taken.

PROTECTIVE ACTION GUIDES (PAG)
Projected radiological dose or dose-commitment values to individuals in the general population that warrant protective action following a release of radioactive material. Protective actions would be warranted provided the reduction in individual dose expected to be achieved by carrying out the preventive action is not offset by excessive risks to individual safety in taking the protective action. The PAG does not include the dose that has unavoidably occurred prior to the assessment.

QUARTERLY
For periodic emergency planning requirements, quarterly is defined as once every three months, with a maximum interval of 112 days.

RECOVERY ACTIONS
Those actions taken after the emergency to restore affected property as nearly as practicable to its pre-emergency condition.

SEMI-ANNUAL
For periodic emergency planning requirements, semi-annual is defined as once every 6 months, with a maximum interval of 228 days.

SITE
That part of the nuclear site property consisting of the Reactor, Auxiliary, Turbine, Service Buildings and grounds, contained within the outer security area fence.

STABLE
Plant conditions are neither degrading nor improving.

TECHNICAL SUPPORT CENTER (TSC)
This on-site center is for use by plant management, technical and engineering support personnel. In an emergency, this center shall be used for assessment of plant status and potential off-site impact in support of the control room command and control function.

TRIENNIAL
For periodic emergency planning requirements, triennial is defined as at least once every three years, with maximum interval of 1369 days.

VITAL AREA
Areas within the Protected Area that house equipment important for nuclear safety. Access to a Vital Area is allowed only if an individual has been authorized to be in that area per the Security plan, therefore Vital Area is a Security term.

WEEKLY
For periodic emergency planning requirements, weekly is defined as once every 7 days, with a maximum interval of 9 days.

DUKE ENERGY
McGUIRE NUCLEAR SITE
EMERGENCY PLAN
APPENDIX 9

HAZARDOUS MATERIALS RESPONSE PLAN

Revision 004

This Hazardous Materials (HazMat) Response Plan for the McGuire Nuclear Site is established for the protection of life, property and the environment in chemical emergency situations. It applies to those emergency situations where the health and safety of site personnel and the general public may be involved.

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HAZMAT RESPONSE PLAN

1.0 Introduction

1.1 Objective

The objective of this plan is to establish a comprehensive response plan to minimize the effects to humans and the environment when hazardous materials releases occur such as with spills, fires or explosions at the McGuire Nuclear Site.

1.2 Scope

As required by 29 CFR 1910.120, employers who allow their employees to respond to incidents involving hazardous substance releases must develop a written emergency response plan. The plan must be developed and implemented to handle anticipated emergencies prior to the commencement of any emergency response activities.

1.3 Plan Revisions

The plan will be updated as necessary based on incidents and/or regulatory changes.

1.4 Regulatory Summary

The Occupational Safety and Health Administration (OSHA) promulgated Interim Final Hazardous Waste Operations and Emergency Response Standard in 29 CFR 1910.120, on December 19, 1986, as required by Congress in the Superfund Amendments and Reauthorization Act of 1986 (SARA). The final rule was published in the Federal Registry on March 6, 1989 and became effective on March 6, 1990. This rule regulates the safety and health of employees involved in any emergency response incidents involving hazardous substances.

2.0 Definitions

Confinement - Actions taken to keep a material in a defined or local area.

Containment - Actions procedures taken to keep a material in its container.

Contaminant/Contamination - a substance that poses a threat to life, health, or the environment. that has escaped from its normal storage or use container.

Control - the procedures, techniques, and methods used in the mitigation of a hazardous materials incident, including containment, extinguishment, and confinement.

Control Zones - the designation of areas at a hazardous materials incident based upon safety and the degree of hazard. Many terms are used to describe the zones involved in a hazardous materials incident. For our purposes, we will define them as the hot, warm and cold zones.

Degradation - a chemical action involving the molecular breakdown of a protective clothing material due to contact with a chemical. The term degradation may also refer to the molecular breakdown of the spilled or released material to render it less hazardous.

Emergency - a sudden and unexpected event calling for immediate action.

Emergency Coordinator - responsible for over-all management of the emergency incident at McGuire Nuclear Site.

Environmental Hazard - a condition capable of posing an unreasonable risk to air, water, or soil quality and plants or wildlife.

Safety Officer - The Incident Commander shall appoint a Safety Officer. The Safety Officer will assist the Incident Commander by providing appropriate advice and by specifically focusing on Safety and Risk Management concerns.

HazMat Commander - the HazMat Team member who has the responsibility for decision making and directing the operations of the HazMat Team at a hazardous materials incident.

Incident - the release or potential release of a hazardous material into the environment.

Incident Command System - an organized system of roles, responsibilities, and standard operating guidelines used to manage and direct emergency operations.

Fire Brigade Leader (Incident Commander) - the person at the scene responsible for all decisions related to the management of the overall incident.

Mitigation - actions taken to prevent or reduce product loss, property damage, human injury or death, and environmental damage due to the release or potential release of hazardous materials.

Monitoring Equipment - instruments and devices used to identify and quantify contaminants.

Penetration - the movement of a material through a suit's closures, such as zippers, buttonholes, seams, flaps, or other design features of chemical - protective clothing, and through punctures, cuts, and tears.

Permeation - a chemical action involving the movement of chemicals, on a molecular level through intact material.

Response - that portion of incident management in which personnel are involved in controlling a hazardous materials incident.

Sampling - sampling is the process of collecting a representative amount of gas, liquid, or solid for analytical purposes.

Size up - the act of gathering information related to an incident such that a plan of action can be formulated.

Stabilization - the period of an incident where the adverse behavior of the hazardous material is controlled.

Waste Minimization - treatment of hazardous spills by procedures or chemicals designed to reduce the hazardous nature of the material and/or to minimize the quantity of waste produced.

3.0 Roles and Responsibilities

Refer to MNS Procedure RP/0/A/5700/022, "Spill/Incident Response Procedure", and Section 4.3 of this response plan for specific Roles and Responsibilities as related to a hazardous materials spills incident.

4.0 Elements of the Plan

4.1 Off Site Support

4.1.1 All off site support for an emergency response and annual training requirements are outlined in the McGuire Nuclear Site Emergency Plan.

4.2 Exception to Off Site Support

4.2.1 Off-site assistance to provide support for hazardous materials response on site is available upon request (e.g. HEPACO, Charlotte Fire Department HAZMAT 13, etc.)..

4.3 HazMat Emergency Response Team Organization

This section addresses the roles and responsibilities in the HazMat Response Team.

4.3.1 Personnel Roles:

4.3.1.1 HazMat Program Administrator - responsible for development and maintenance of the facility's HazMat Response Plan.

4.3.1.2 Fire Brigade Leader - initiates the response effort, gives permission for site access, serves as liaison between the Control Room and HAZMAT/Incident Commander in an effort to coordinate activities with outside parties and identifies all hazardous substances or conditions present. The Fire Brigade Leader shall implement appropriate emergency operations based upon his knowledge of the incident and level of training.

4.3.1.3 HazMat/Incident Commander - coordinates the efforts of the HazMat Team with other groups, implements appropriate SOGs for HazMat Team and assigns the designated HazMat Safety and Health Officer. Upon termination of response activities he is responsible for implementation of decontamination procedures and preparation of a final report and critique.

4.3.1.4 Safety and Health Officer (HazMat Team) - during an incident identifies and evaluates hazards and provides direction with respect to the safety of operations and personnel. This person has the authority to stop work if he/she identifies a problem until the problem is brought to the attention of the HazMat Commander or Fire Brigade Leader.

4.3.1.5 HazMat Team Members

Entry Personnel: enter and initiate containment and clean-up activities as appropriate in the area of the incident.

Backup Personnel: maintain line of sight and communication with the Entry Personnel. May also relieve Entry Personnel.

Decontamination Personnel: responsible for decontamination procedures. May also relieve Backup Personnel.

Resource Personnel: provides necessary technical guidance at the incident scene. May also relieve Backup Personnel.

4.3.1.6 Security - manage the site security during the incident.

4.3.1.7 Employees - recognize a hazardous material incident and initiate the response directives, and trained to follow the SWIM method.

4.3.1.8 Fire Brigade - responds to hazardous material incidents under the command of the Fire Brigade Leader and serves as the first responder.

4.3.1.9 M.E.R.T. - responds to HazMat events for medical support.

4.3.1.10 Skilled Support Personnel - operates specialized equipment to perform necessary, immediate emergency support work under the direction of the Fire Brigade Leader (i.e., backhoe operator, bulldozer operator).

4.3.1.11 Community Relations Representative - responsible for handling news media, if needed.

4.3.1.12 Specialist Employees - (e.g. Safety, Chemistry, Radiation Protection etc.) work with, and are trained in, the hazards of specific hazardous substances and can be called upon to provide technical advice or assistance at a hazardous substance release incident.

4.3.2 Lines of Authority

4.3.2.1 When establishing command of an incident, the first arriving HazMat Team member should initiate the following:

- Assume command as HazMat Commander.
- Perform size up.
- Take turnover from Fire Brigade Leader for HazMat portion of the incident.
- Establish HazMat Command Post.
- Establish a Staging Area.
- Request necessary assistance.
- Turn over command as needed.

4.3.3 Training

Training will be based on the duties and functions to be performed by each member of the HazMat Response Plan. All new team members shall be trained to the appropriate level for their function before they are permitted to take part in actual emergency operations. Refer to AD-TQ-ALL-0086 Fire Brigade and Hazmat Training..

4.3.3.1 Trainers - shall have the training and/or academic credentials and instructional experience necessary to demonstrate competent instructional skills. They should also have base line skills for hazardous material response teams. Refer to AD-TQ-ALL-0086 Fire Brigade and Hazmat Training.

4.3.3.2 Refresher Training - HazMat Team members shall receive training per AD-TQ-ALL-0086 Fire Brigade and Hazmat Training.

4.3.3.3 Documentation - shall be kept on all training. DUKE ENERGY Training Attendance Sheet shall be used for all training documentation.

4.3.3.4 Drills - will be conducted in association with site drills and/or during scheduled refresher training.

4.3.4 Communications

4.3.4.1 Internal
Refer to RP/0/A/5700/022, "Spill/Incident Response Procedure", for activation of HazMat Team.

All requests for outside assistance shall be originated by the Fire Brigade Leader.

4.3.5 Safe Distances and Places of Refuge

4.3.5.1 Safe Distance

The initial response assessment shall be made by the Fire Brigade Leader on zoning distances. All initial safe distances are subject to change at the discretion of the Fire Brigade Leader. Safe distance consideration should include upwind, upgrade, upstream considerations.

4.3.5.2 Places of Refuge

Employees that are evacuated from a work area must be accounted for, decontaminated if needed, and placed in an area for accountability.

4.3.6 Site Security and Control

Refer to NSD 217, Nuclear *Security Program*

4.3.7 Evacuation Routes and Procedures

Refer to RP/0/A/5700/011, Conducting a Site Assembly, Site Evacuation or Containment Evacuation

4.3.8 Decontamination

Refer to the MNS Standard Operating Guidlines for Hazardous Materials Emergency Response section "Chemical Decontamination Process".

4.3.9 Emergency Medical Treatment and First Aid

4.3.9.1 Emergency medical treatment shall be provided on site by the Medical Emergency Response Team (M.E.R.T.).

4.3.9.2 All medical and trauma patients shall be treated by the M.E.R.T. medical protocols while on site, unless the patient's care has been transferred to an outside agency.

4.3.9.3 M.E.R.T. shall provide pre- and post-entry evaluations for all HazMat Team members entering the hot or warm zones where Level B Chemical Protective Clothing or greater must be worn.

4.3.10 Emergency Response Procedures

Refer to HazMat Team's Standard Operating Guidelines for guidance in emergency response.

4.3.11 Critique of Response and Follow-Up Action Items

All incidents involving a response by the site's HazMat Team shall have a critique of the incident involving all participants.

The HazMat Commander shall ensure that all reusable equipment is decontaminated and returned to service. and documentation is performed for equipment that must be replaced or delayed in returning to service.

All employee chemical exposures shall be properly documented on Incident Investigation Report (IIR) Form 00892.

All medical injuries must be reported and documented on the Incident Investigation Report (IIR) Form 00892.

4.3.12 PPE and Emergency Equipment

MNS maintains protective equipment and supplies for fire, explosion, hazardous material/waste spill control at the site. These are located and maintained in designated areas around the site.

Disposable Chemical Protective Clothing shall be inspected prior to use.

Self-Contained Breathing Apparatus (S.C.B.A.) are inspected and maintained by the site Radiation Protection Group.

4.3.13 Medical Surveillance Program

The HazMat Team's medical surveillance program shall follow the corporate medical guidelines.

FIGURE 1

DUKE ENERGY
McGUIRE NUCLEAR SITE

HAZARDOUS MATERIALS RESPONSE
CROSS REFERENCE INDEX

OSHA 1910.120 (P) (8):

(A) Pre-emergency Planning and Coordination with Outside Parties

- Agreement letters - See MNS Site Emergency Plan, Appendix 5

(B) Personnel roles, lines of authority, communication

- Hazardous Materials Response Plan, 4.3.1 - Personnel Roles
- McGuire Site Emergency Plan, Section A, Section 1.d
- McGuire Fire Brigade, NSD 112
- RP/0/A/5700/022, Spill / Incident Response
- MNS Standard Operating Guidelines for Hazardous Materials Emergency Response

(C) Emergency recognition and prevention

- RP/0/A/5700/022, Spill / Incident Response
- MNS Standard Operating Guidelines for Hazardous Materials Emergency Response

(D) Safe distances and places of refuge

- RP/0/A/5700/011, Conducting a Site Assembly or Evacuation

(E) Site security and control

- NSD217, Nuclear Security Program

(F) Evacuation routes and procedures

- RP/0/A/5700/011, Conducting a Site Assembly or Evacuation

(G) Decontamination

- MNS Standard Operating Guidelines for Hazardous Materials Emergency Response

(H) Emergency Medical Treatment and First Aid

- Hazardous Materials Response Plan 4.3.9
- RP/0/A/5700/005, Care and Transportation of Contaminated Injured Individual(s) From Site to Offsite Medical Facility

(I) Emergency Alerting and Response Procedures

- RP/0/A/5700/011, Conducting a Site Assembly or Evacuation
- RP/0/A/5700/022, Spill / Incident Response
- RP/0/A/5700/001, Notification of Unusual Event
- RP/0/A/5700/002, Alert
- RP/0/A/5700/003, Site Area Emergency
- RP/0/A/5700/004, General Emergency

(J) Critique of response and follow-up

- Hazardous Materials Response Plan 4.3.11
- MNS Standard Operating Guidelines for Hazardous Materials Emergency Response "Terminating the Incident"
- Problem Investigation Program

(K) PPE and emergency equipment

- Hazardous Materials Response Plan 4.3.12