

Steven D. Capps
Vice President
McGuire Nuclear Station

**Duke Energy** 

MG01VP | 12700 Hagers Ferry Road Huntersville, NC 28078

> o: 980.875.4805 f: 980.875.4809 Steven.Capps@duke-energy.com

January 30, 2014

Serial No: MNS-14-016

10 CFR 50.54(q)

U. S. Nuclear Regulatory Commission

Attn: Document Control Desk Washington, D. C. 20555-0001

Subject:

Duke Energy Carolinas, LLC

McGuire Nuclear Station, Units 1 and 2

Docket Nos. 50-369, 50-370 Emergency Plan, Revision 14-1

Please find attached Revision 14-1 to the McGuire Nuclear Station Emergency Plan. This revision is submitted in accordance with the requirements of 10 CFR 50.54(q) and does not result in a reduction in the effectiveness of the Emergency Plan or the Emergency Plan Implementing Procedures.

Questions regarding this submittal should be directed to Kay Crane, McGuire Regulatory Affairs, at (980) 875-4306.

Steven D. Capps

**Attachments** 

AX45 NRR U. S. Nuclear Regulatory Commission January 30, 2014 Page 2

(Two Copies)

cc: Mr. V.M. McCree, Regional Administrator, Region II U. S. Nuclear Regulatory Commission Marquis One Tower 245 Peachtree Center Ave., NE, Suite 1200 Atlanta, GA 30303-1257

(One Copy)
Mr. E. William Brach, Director
Office of Nuclear Material Safety and Safeguards
Mail Stop T-8A23
Washington, D. C. 20555-0001

(w/o attachments)

Mr. Jason Paige NRC Project Manager (McGuire) U. S. Nuclear Regulatory Commission One White Flint North, Mail Stop 08C2 11555 Rockville Pike Rockville, MD 20852-2738

Mr. John Zeiler NRC Senior Resident Inspector McGuire Nuclear Station Attachment 1 January 31, 2014 Page 1 of 2

<u>SECTION</u>	REMOVE PAGES	INSERT PAGES
Coversheet	Revision 13-3	Revision 14-1
Emergency Plan Revision List	Revision 13-3	Revision 14-1
List of Effective Pages (LOEP)	Complete Section, Rev. 13-3 Pages 1 thru 4	Complete Section, Rev. 14-1 Pages 1 thru 4
Table of Contents	Complete Section, Rev. 13-3 Pages 1 thru 6	Complete Section, Rev. 14-1 Pages 1 thru 6
Section D	Complete Section, Rev. 13-3 Pages D1 thru D84	Complete Section, Rev. 14-1 Pages D1 thru D83
Section P	Complete Section, Rev. 13-3 Pages P1 thru P10	Complete Section, Rev. 14-1 Pages P1 thru P10

# DUKE ENERGY McGUIRE NUCLEAR SITE EMERGENCY PLAN

**APPROVED:** 

SITE VICE PRESIDENT

DATE APPROVED: JAN 30, 2014

**REVISION 14-1: January, 2014** 

**EFFECTIVE DATE: January, 2014** 

ORIGINAL DATE: August 25, 1980

#### DUKE ENERGY COMPANY McGUIRE NUCLEAR SITE EMERGENCY PLAN REVISION LIST

August 25, 1980 Date Issued	Revision 37, March 1992
Change 1, October, 1980	Revision 92-1, August 1992
Change 2, February, 1981	Revision 92-2, October 1992
Change 3, June, 1981	Rev. 93-1, April 1993
Change 4, August, 1981	Rev. 93-2, June, 1993
Revision 1, November 16, 1981	Rev. 93-3, December 1993
Revision 2, February, 1982	Rev. 94-1, January, 1994
Revision 3, February, 1982	Rev. 94-2, June, 1994
Revision 4, April, 1982	Rev. 94-3, August 1994
Revision 5, June, 1982	Rev. 94-4, October 1994
Revision 6, July, 1982	Rev. 95-1, February 1995
Revision 7, September, 1982	Rev. 95-2, April 1995
Revision 8, November, 1982	Rev. 96-1, April 1996
Revision 9, January, 1983	Rev. 96-2, July 1996
Revision 10, February, 1983	Rev. 97-1, April 1997
Revision 11, June, 1983	Rev. 97-2, May 1997
Revision 12, November, 1983	Rev. 97-3, July, 1997
Revision 13, March, 1984	Rev. 98-1, January, 1998
Revision 14, August, 1984	Rev. 98-2, February, 1998
Revision 15, January, 1985	Rev. 98-3, May, 1998
Revision 16, March, 1985	Rev. 98-4, July, 1998
Revision 17, May, 1985	Rev. 98-5, August, 1998
Revision 18, November, 1985	Rev. 98-6, November, 1998
Revision 19, January, 1986	Rev. 99-1, March, 1999
Revision 20, July, 1986	Rev. 99-2, July, 1999
Revision 21, May, 1987	Rev. 99-3 November, 1999
Revision 22, June, 1987	Rev. 00-1, April, 2000
Revision 23, November, 1987	Rev. 00-2, May, 2000
Revision 24, March, 1988	Rev. 00-3, November, 2000
Revision 25, July, 1988	Rev. 01-1, January, 2001
Revision 26, July, 1989	Rev. 01-2, June, 2001
Revision 27, September, 1989	Rev. 02-1, March, 2002
Revision 28, October, 1989	Rev. 02-2, August, 2002
Revision 29, November, 1989	Rev. 03-1, April, 2003
Revision 30, March, 1990	Rev. 03-2, June, 2003
Revision 31, April, 1991	Rev. 04-1, February, 2004
Revision 32, July, 1991	Rev. 04-2, July, 2004
Revision 33, September, 1991	Rev. 05-1, July, 2005
Revision 34, October, 1991	Rev. 06-1, January, 2006
Revision 35, December, 1991	Rev. 06-2, September, 2006
Revision 36, January, 1992	Rev. 07-1, May, 2007

Rev. 07-2, December, 2007

Rev. 08-1, September, 2008

Rev. 09-1, July, 2009

Rev. 09-2, December, 2009

Rev. 10-1, May, 2010

Rev. 10-2, November, 2010

Rev. 11-1, March, 2011

Rev. 11-2, August, 2011

Rev. 11-3, October, 2011

Rev. 12-1, May, 2012

Rev. 12-2, June, 2012

Rev. 12-3, November, 2012

Rev. 12-4, December, 2012

Rev. 13-1, March, 2013

Rev. 13-2, June, 2013

Rev. 13-3, October, 2013

Rev. 14-1, January, 2014

**Emergency Plan Approval Cover Sheet** 

Coversheet Rev. 13-3 October, 2013

**Emergency Plan Revision List** 

Page 1 thru 2 Rev. 13-3 October, 2013

**Table of Contents** 

Page 1 thru 6 Rev. 13-3 October, 2013

**List of Figures** 

Page 1 thru 2 Rev. 13-3 October, 2013

**Introduction** 

Pages i-1 thru i-7 Rev. 13-3 October, 2013

A. Assignment of Responsibility

Pages A-1 thru A-5 Rev. 13-3 October, 2013

**B.** Onsite Emergency Organization

Pages B-1 thru B-13 Rev. 13-3 October, 2013

C. Emergency Response Support & Resources

Pages C-1 thru C-2 Rev. 09-1 July, 2009

D. Emergency Class System/EAL Basis Document

Pages D-1 thru D-83 Rev. 14-1 January, 2014

E. Notification Methods & Procedures

Pages E-1 thru E-11 Rev. 12-1 May, 2012

F. Emergency Communications

Pages F-1 thru F-7 Rev. 06-2 September, 2006

**G. Public Education & Information** 

Pages G-1 thru G-4 Rev. 13-3 October, 2013

H. Emergency Facility & Equipment

Pages H-1 thru H-17 Rev. 13-3 October, 2013

I. Accident Assessment

Pages I-1 thru I-3 Rev. 12-1 May, 2012

J. Protected Response

Pages J-1 thru J-22 Rev. 13-3 October, 2013

K. Radiological Exposure Control

Pages K-1 thru K-4 Rev. 00-3 November, 2000

L. Medical & Public Health Support

Pages L-1 thru L-2 Rev. 13-3 October, 2013

M. Recovery & Re-entry Planning

Pages M-1 thru M-5 Rev. 06-2 September, 2006

N. Exercises & Drills

Pages N-1 thru N-3 Rev. 10-2 November, 2010

### O. Radiological Emergency Response Training

Pages O-1 thru O-2	Rev. 10-2	November, 2010
P. Development Periodic R	Review & Distribution of Emergency Plans	
Pages P-1 thru P-10	Rev. 14-1	January, 2014
O. Appendices 1-4		
Pages Q-1 thru Q-15	Rev. 13-3	October, 2013
Appendix 5 Agreement Lo	<u>etters</u>	
Index - Page Q-16	Rev. 13-3	October, 2013
Agreement Letter 1	Rev. 13-1	March, 2013
Agreement Letter 2	Rev. 13-2	June, 2013
Agreement Letter 3	Rev. 13-1	March, 2013
Agreement Letter 4	Rev. 13-1	March, 2013
Agreement Letter 5	Rev. 00-1 (Deleted)	May, 2000
Agreement Letter 6	Rev. 13-1	March, 2013
Agreement Letter 7	Rev. 13-1	March, 2013
Agreement Letter 8	Rev. 13-1	March, 2013
Agreement Letter 9	Rev. 13-1	March, 2013
Agreement Letter 10	Rev. 13-1	March, 2013
Agreement Letter 11	Rev. 13-1	March, 2013
Agreement Letter 12	Rev. 13-1	March, 2013
Agreement Letter 13	Rev. 12-3	November, 2012
Agreement Letter 14	Rev. 11-2	August, 2011
Agreement Letter 15	Rev. 13-3	October, 2013
Agreement Letter 16	Rev. 13-2	June, 2013
Agreement Letter 17	Rev. 11-2	August, 2011
Agreement Letter 18	Rev. 12-2	June, 2012
Agreement Letter 19	Rev. 12-2	June, 2012
Agreement Letter 20	Rev. 11-2	August, 2011
Agreement Letter 21	Rev. 12-2	June, 2012
Agreement Letter 22	Rev. 12-2	June, 2012

Rev. 14-1 January, 2014

#### **Appendix 6 Emergency Plan Distribution**

Page Q-17 thru Q-20 Rev. 13-3 October, 2013

**Appendix 7 SPCC Plan** 

Coversheet Rev. 12-3 November, 2012

Table of Contents Rev. 12-3 November, 2012

Pages 1 thru 75 Rev. 12-3 November, 2012

**Appendix 8 Hazardous Waste Contingency Plan** 

Pages 1 thru 19 Rev. 13-1 March, 2013

Appendix 9 Hazardous Materials Response Plan

Pages 1 thru 14 Rev. 13-3 October, 2013

. ...

#### DUKE ENERGY MCGUIRE NUCLEAR SITE EMERGENCY PLAN

i.	Introduction		
	A.	Purpose	i-1
	B.	Scope	i-1
	C.	Planning Basis	i-3
A.	Assignment of	f Responsibility	
	A.1.a	Organization	A-1
	A.1.b	Concept of Operations	A-3
	A.1.c	Block Diagram Interrelationships	A-3
	A.1.d	Key Decisionmaking	A-3
	A.1.e	24 Hour Emergency Response	A-4
	A.2.a	Responsibility for and Functions of Emergency	A-4
		Response Organization	
	A.2.b	Legal Basis for Authority	A-4
	A.3	Agreement Letters for Emergency Response Support	A-4
	A.4	Individuals Responsible for Continuity of Resources	A-5
B.	On-site Emer	gency Organization	
	B.1	Plant Staff Under Emergency Conditions	B-1
	B.2	Emergency Coordinator	B-1
	B.3	Emergency Coordinator (line of succession)	B-1
	B.4	Functional Responsibilities of Emergency Coordinator	B-2
	B.5	Minimum Staffing Requirements	B-2
	B.6	On-site Functional Area Interfaces	B-2
	B.7	Augmented Support of On-site Emergency Organization	B-2
	B.8	Contractor and Private Organizations	B-3 thru B-4
	B.9	Local Agency Support Services	B-4
	B.9.a	Law Enforcement, Emergency Traffic Control, Related	B-4
		Police Matters	
	B.9.b	Early Warning or Evacuation of the Populace	B-5
	B.9.c	Radiological Emergency Monitoring Assistance	B-5
	B.9.d	Hospitals, Medical Support	B-5
	B.9.e	Ambulance Service	B-5
	B.9.f	Fire-fighting	B-5
	B.9.g	Public Health and Safety, Evaluation of the	B-5
		Radiological Situation	20
	B.9.h	Local, State and Federal Support Responsibilities	B-6

<u>Tabl</u>	e of Contents		Page #
C.	Emergenc	y Response Support and Resources	
	C.1.a	Individuals Authorized to Request Federal Assistance	C-1
	C.1.b	Federal Resources Arrival Time	C-1
	C.1.c	Emergency Operations Facility Resources Available to Federal Response Organizations	C-1
	C.2.a	State and County Representation at the Emergency Operations Facility (EOF)	C-1
	C.2.b	Licensee Representation at the Off-Site EOC's	C-1
	C.3	Radiological Laboratories-Availability and Capability	C-2
	C.4	Emergency Support From Other Organizations	C-2
D.	Emergenc	y Classification System/EAL Basis Document	
		Emergency Classification System/EAL Basis Document	D-1 thru D-83
E.	Notification	on Methodology	
	E.1	Notification of Response Organization	E-1
	E.2	Activation of Emergency Organization	E-1
	E.2.a	Notification of Unusual Event	E-1
	E.2.b	Alert	E-2
	E.2.c	Site Area Emergency	E-4
	E.2.d	General Emergency	E-6
	E.3	Emergency Message Format (Initial)	E-8
	E.4	Emergency Message Format (Follow-up)	E-9
	E.5	State and Local Organizations-Disseminating Public Information	E-9
	E.6	Alert and Notification System	E-9
	E.7	Supporting Information for Public Information Message	E-9
F.	Emergence	y Communications	
	F.1.a	24 Hour Notification Capability	F-1
	F.1.b	Communications With State/Local Governments	F-1
	F.1.c	Communications With Federal Organizations	F-2
	F.1.d	Communications Between Site, EOF, EOC's and Monitoring Team	F-2
	F.1.e	Activation of Emergency Personnel	F-2
	F.1.f	Communications Between NRC, EOC and Monitoring Teams	F-2
	F.1.g	ERDS Data Transfer	F-2
	F.2	Medical Support Communications	F-3
	F.3	Communications System Testing	F-3

Table	e of Contents		Page #
G.	Public Edu	cation and Information	
	G.1/G.2	Public Education and Information Program	G-1
	G.3.a	News Group - Location and Contacts	G-1
	G.3.b	News Group - Media Center	G-1
	G.4.a	Public Spokesperson	G-2
	G.4.b	Spokesperson Information Exchange	G-2
	G.4.c	Rumor Control	G-2
	G.5	News Media Training Sessions	G-2
H.	Emergency	Facilities and Equipment	
	H.1	Technical Support Center/Operations Support Center	H-1
	H.1.a	Control Room	H-1
	H.1.b	Technical Support Center (TSC)	H-1
	H.1.c	Operations Support Center (OSC)	H-2
	H.1.d	Alternate Facilities	H-2
	H.2	Emergency Operations Facility (EOF)	H-2 thru H-3
	H.3	State and Local Government Emergency Operations Center	H-4
	H.4	Activation and Staffing	H-4
	H.5	Assessment Actions	H-4
	H.5.a	Meteorological, Hydrologic and Seismic	H-4 thru H-5
	H.5.b	Radiological Monitors	H-6
	H.5.c	Plant Parameters	H-6
	H.5.d	Fire Detection	H-6
	H.6	Data, Monitoring Equipment and Analysis Facilities	H-6
	H.7	Off-site Radiological Monitoring	H-7
	H.8	Meteorology Instrumentation and Procedures	H-7
	H.9	Operations Support Center	H-7
	H.10	Emergency Equipment/Instrumentation Inspection, Inventory, Operational Check, Calibration	H-7
	H.11	Emergency Kits	H-7
	H.12	Receipt and Analysis of Field Monitoring Data	H-7
I.	Accident A	assessment	
	I.1	Emergency Action Level Procedures	I-1
	I.2	On-site Capability and Resources to Provide Initial	I-1
		Values and Continuing Assessment	
	I.2.a	Post Accident Sampling	I-1
	I.2.b	Radiation and Effluent Monitors	I-1
	I.2.c	In-plant Iodine Instrumentation	I-2
	I.3.a/	Method for Determining Release Source Term	I-2
	I.3.b		
	I.4	Effluent Monitor Readings Vs On-site/Off-site Exposure	I-2
	I.5	Meteorological Information Availability	I-2
	I.6	Release Rates/Projected Doses for Offscale Instrumentation	I-2

Tabl	e of Contents		Page #
	I.7/	Field Monitoring Within EPZ	I-3
	I.8		
	I.9	Detect and Measure Radioiodine Concentration in the EPZ	I-3
	I.10	Relationship Between Contamination Levels	I-3
		and Integrated Dose/Dose Rates	
	I.11	Plume Tracking	I-3
J.	Protective R	esponse	
	J.1.a thru J.1.d	Onsite Alerting and Notification	J-1
	J.2	Evacuation Routes and Transportation	J-1
	J.3	Personnel Monitoring	J-1
	J.4	Site Evacuation Procedures - Decontamination	J-2
	J.5	Personnel Accountability	J-2
	J.6	Protective Equipment Breathing Apparatus, Protective	J-2
		Clothing, KI	
	J.7	Protective Action Recommendations	J-3
	J.8	Evacuation Time Estimates	J-4
	J.9	Implementing Protective Measures	J-4
	J.10	Implementation of Protective Measures for Plume	J-5
		Exposure Pathway	
	J.10.a	EPZ Maps	J-6
	J.10.b	EPZ Population Distribution Map	J-6
	J.10.c	EPZ Population Alerting and Notification	J-6
	J.10.d	EPZ Protecting Immobile Persons	J-6
	J.10.e	Use of Radioprotective Drugs for Persons in EPZ	J-6
	J.10.f	Conditions for Use of Radioprotective Drugs	J-6
	J.10.g	State/County Relocation Plans	J-6
	J.10.h	Relocation Center Locations	J-6
	J.10.i	Evacuation Route - Traffic Capacities	J-6
	J.10.j	Evacuated Area Access Control	J-6
	J.10.k	Planning for Contingencies in Evacuation	J-6
	J.10.1	State/County Evacuation Time Estimates	J-6
	J.10.m	Bases for Protective Action Recommendations	J-6
	J.11	Ingestion Pathway Planning	J-7
	J.12	Relocation Center - Registering and Monitoring	J-7

<u>Table</u>	e of Contents	<u>S</u>	Page #			
K.	Radiologi	cal Exposure Control				
	K.1	Onsite Exposure Guidelines	K-1			
	K.2	Doses in Excess of 10CFR Part 20	K-1			
	K.3	Emergency Personnel Exposure and Records	K-1			
	K.3.a	Distribution of Dosimetry	K-1			
	K.3.b	Dose Records	K-2			
	K.4	State/Local Plan for Authorizing Doses Exceeding PAG's	K-2			
	K.5	Decontamination	K-2			
	K.5.a	Action Levels for Determining the Need for Decontamination				
	K.5.b	Radiological Decontamination	K-2			
	K.6	Contamination Control Measures	K-2			
	K.6.a	Area Access Control	K-2			
	K.6.b	Drinking Water and Food Supplies	K-2			
	K.6.c	Recovery Efforts	K-3			
	K.7	Decontamination of Personnel at Relocation	K-3			
	,	Assembly Area				
L.	Medical a	nd Public Health Support				
	L.1	Hospital and Medical Support	L-1			
	L.2	On-site First Aid Capability	L-1			
	L.3	Public, Private, Military Hospitals, Emergency Medical Facilities	L-1			
	L.4	Transport of Accident Victims	L-2			
M.	Recovery and Reentry Planning and Post-Accident Operations					
	M.1	Recovery/Reentry Plans and Procedures	M-1			
	M.1.a	Outline of Site Recovery Plans	M-1			
	M.1.b	Outline of Recovery Plans	M-2			
	M.2	Recovery Organization	M-3			
	M.3	Information to Members of Recovery Organization	M-4			
	M.4	Total Population Exposure Estimates	M-4			
N.	Exercises	and Drills				
	N.1.a	Exercises	N-1			
	N.1.b	Exercise Scenario/Response	N-1			
	N.2	Drills	N-1			
	N.2.a	Communications	N-1			
	N.2.b	Fire Drills	N-2			
	N.2.c	Medical Emergency Drills	N-2			
	N.2.d	Radiological Monitoring Drills	N-2			
	N.2.e	Radiation Protection Drills	N-2			
	N.3	Exercise and Drill Execution	N-3			
	N.4	Exercise Critique	N-3			
	N.5	Critique Action Items	N-3			
			Rev. 14-1			
			January, 2014			

<u>Tabl</u>	e of Contents		Page #
O.	Radiological	Emergency Response Training	
	O.1	Offsite Agency Training	O-1
	O.1.a	Emergency Response Training (Offsite Agency)	O-1
	O.1.b	Off-site Support Agency - Participation in Training	O-1
	O.2	Site Organization Training	O-1
	O.3	First Aid Training	O-1
	O.4	Training For Radiological Emergency Response Personnel	O-2
	O.5	Training Period	O-2
P.	Responsibilit	y for the Planning Effort	
	P.1	Emergency Planning Staff Training	P-1
	P.2	Emergency Response Planning	P-1
	P.3	Site Emergency Planning Manager	P-1
	P.4	Review of Emergency Plan	P-1
	P.5	Distribution of Revised Plans	P-1
	P.6	Supporting Plans	P-2
	P.7	Implementing Procedures	P-2
	P.8	Table of Contents	P-2
	P.9	Audit of Emergency Plan	P-2
	P.10	Telephone Number Updates	P-3
Q.	Appendices	Index	Q-1
	Appendix 1	Definitions	Q-2
	Appendix 2	Meteorological Program	Q-6
	Appendix 3	Alert and Notification System Description	Q-10
	Appendix 4	Evacuation Time Estimates	Q-15
	Appendix 5	Agreement Letters	Q-16
	Appendix 6	McGuire Nuclear Site Emergency Plan Distribution	Q-17
	Appendix 7	SPCC Plan	
	Appendix 8	Hazardous Waste Contingency Plan	
	Appendix 9	Hazardous Materials Response Plan	

Activity Description and References:	MNS EPLAN Change 14-1, Section	ion D BLOCK 1
<ul> <li>Add Mode 4 (Hot Shutdown) at Applicability.</li> <li>Delete statement referring to <sup>T</sup>A</li> <li>Add Modes 4 and 5 to Basis.</li> </ul>	nd Mode 5 (Cold Shutdown) to Ope vg≥500°F.	erating Mode
Activity Scope:		BLOCK 2
The activity is a <i>change</i> to the <i>emer</i> The activity is not a <i>change</i> to the <i>emer</i>		
Change Type:	BLOCK 3 Change Type:	BLOCK 4
The change is not editorial or typog	The change doe prior approval	es not conform to an activity that has
Planning Standard Impact Determina		BLOCK 5
\$50.47(b)(1) – Assignment of Resp \$50.47(b)(2) – Onsite Emergency C \$50.47(b)(3) – Emergency Respons \$50.47(b)(4) – Emergency Classif	Organization e Support and Resources	
§50.47(b)(5) – Notification Metho §50.47(b)(6) – Emergency Communication (Section 2014) (Sectio	nications d Information	
§50.47(b)(8) – Emergency Facility §50.47(b)(9) – Accident Assessme	nt*	
§50.47(b)(10) – Protective Responsible Solution (11) – Radiological Exposition (12)	ure Control	
§50.47(b)(12) – Medical and Public §50.47(b)(13) – Recovery Planning	and Post-accident Operations	
§50.47(b)(14) – Drills and Exercises §50.47(b)(15) – Emergency Respon	nder Training	
\$50.47(b)(16) – Emergency Plan M *Risk Significant Planning Standards		
The proposed activity does not impact Determination:	act a Planning Standard	BLOCK 6

Revision 12

# Emergency Planning Functional Area Manual 3.10 10CFR 50.54(q) Evaluations

Attachment 3.10.7.2

The activity does involve a site specific	EP commitment	
Record the commitment or commitment	t reference:	
The activity does not involve a site spec	eific EP commitment	
Results:		BLOCK 7
The activity can be implemented without	ut performing a §50.54(q) effectiv	eness evaluation
The activity <u>cannot</u> be implemented wit	hout performing a §50.54(q) effect	ctiveness evaluation
This change corrects a procedure change mathis condition only applicable in Modes 1, 2 Report dated January 28, 1998, Docket Nos recognizes site-specific levels of reactor coordegradation greater than technical specifical NUMARC EAL. Although the NUMARC 4.2.U.3 is only listed as applicable in Mode are not included in the McGuire IC. This is in either of these conditions. Because it wo the McGuire scheme contains ICs and EAL turn, would trigger either equivalent or high irradiated fuel, loss of reactor vessel, spent is defueled conditions from the equivalent McGuire McGuire from the equivalent from the equivalent McGuire from the equivalent from the equiv	2, and 3. This change conforms to . 50-369 and 50-370. Per the SER clant activity as measured by samption limits. McGuire EAL 4.2.U.3 EAL IC SU4 is listed as applicable at 1-5. The refueling condition (Mobecause there is no technical speculd be impossible to satisfy the IC is for all credible events in these or are classifications than would NUT fuel pit or reactor cavity level), the	the original Safety Evaluation, NUMARC EAL SU4.2 ple as indicators of fuel cladding 3-1 is listed as equivalent to this is in operating modes, McGuire IC pde 6) and the defueled condition ification limit for coolant activity in these conditions, and because perating conditions, which, in MARC IC SU4 (e.g., damage to be deletion of refueling and
Preparer Name: Renard Burris	Preparer Signature	Date: 1/16/14
Reviewer Name: Kandy Gibson	Reviewer Signature	Date: 416/14

Revision 12 2

#### D. EMERGENCY CLASSIFICATION SYSTEM

Regulatory Guide 1.101, Rev. 3, August 1992, approved the guidance provided by NUMARC/NESP-007, Revision 2, as an alternative methodology for the development of Emergency Action Levels. McGuire Nuclear Site used the NUMARC guidance for the development of initiating conditions and emergency action levels. The emergency action levels provided in this section have been modified to implement the guidance provided in NRC Bulletin 2005-02, NEI guidance as endorsed in Regulatory Issue Summary 2006-12 and to support the implementation of NEI 03-12.

The emergency classification system utilizes four categories for classification of emergency events.

#### D.I.a UNUSUAL EVENT

Events are in process or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection has been initiated. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

The purpose of this class is to provide notification of the emergency to the station staff, State and Local Government representatives, and the NRC.

Specific initiating conditions and their corresponding emergency action levels are provided in this Basis Document.

#### D.I.b ALERT

Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of hostile action. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.

The purpose of this class is to assure that emergency personnel are readily available to:

- 1. Activate the onsite response centers.
- 2. Respond if the situation becomes more serious or to perform confirmatory radiation monitoring if required.
- 3. Provide offsite authorities current status information.

Specific initiating conditions and their corresponding emergency action levels are provided in this Basis Document.

#### D.I.c. SITE AREA EMERGENCY

Events are in process or have occurred which involve actual or likely major failures of plant functions needed for protection of the public or hostile action that results in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) that prevent effective access to equipment needed for protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels beyond the site boundary.

The purpose of the Site Area Emergency is to:

- 1. Activate the offsite response centers.
- 2. Assure that monitoring teams are mobilized.
- 3. Assure that personnel required for taking protective actions of near site areas are at duty stations should the situation become more serious.
- 4. Provide current information to the public and be available for consultation with offsite authorities.

Specific initiating conditions and their corresponding emergency action levels are provided in this Basis Document.

#### D.I.d. GENERAL EMERGENCY

Events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or hostile action that results in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area.

The purpose of the General Emergency is to:

- 1. Initiate predetermined protective actions for the public.
- Provide continuous assessment of information from onsite and offsite measurements.
- 3. Initiate additional measures as indicated by event releases or potential releases.
- 4. Provide current information to the public and be available for consultation with offsite authorities.

Specific initiating conditions and their corresponding emergency action levels are provided in this Basis Document.

#### D.2. INITIATING CONDITIONS

The initiating conditions and their corresponding emergency action levels are contained in the Basis Document beginning on page D6. Classification procedure (RP/0/A/5700/000) provides the guidance necessary to classify events and promptly declare the appropriate emergency conditions within 15 minutes after the availability of indications to cognizant facility staff that an emergency action level threshold has been exceeded. Specific response procedures are in place which delineate the required response during the appropriate classification.

#### D.3. ALPHABETICAL LIST OF IMPORTANT DEFINED TERMS FOR EVENT CLASSIFICATION (5)

ALL - (As relates to Operating Mode Applicability) - At all times.

BOMB - Refers to a explosive device suspected of having sufficient force to damage plant systems or structures.

CIVIL DISTURBANCE - A group of ten (10) or more people violently protesting station operations or activities at the site. A civil disturbance is considered to be violent when force has been used in an attempt to injure site personnel or damage plant property.

COGNIZANT FACILITY STAFF - Any member of facility staff, who by virtue of training and experience, is qualified to assess the indications or reports for validity and to compare the same to the EALs in the licensee's emergency classification scheme. (Does not include staff whose positions require they report, rather than assess, abnormal conditions to the facility.)

CONFINEMENT BOUNDARY - The barrier(s) between areas containing radioactive substances and the environment.

EXPLOSION - A rapid, violent unconfined combustion, or a catastrophic failure of pressurized/energized equipment that imparts energy of sufficient force to potentially damage permanent structures, systems or components.

EXTORTION - An attempt to cause an action at the site by threat of force.

FIRE - Combustion characterized by heat and light. Sources of smoke such as slipping drive belts or overheated electrical equipment do not constitute fires. Observation of flames is preferred but is NOT required if large quantities of smoke and heat are observed. An electrical breaker flash that creates high temperatures for a short duration and merely localized scorching to that breaker and its compartment should not be considered a fire.

HOSTAGE - A person(s) held as leverage against the station to ensure demands will be met by the station.

HOSTILE ACTION - An act toward a NPP or its personnel that includes the use of violent force to destroy equipment, take **HOSTAGES**, and / or intimidate the licensee to achieve an end. This includes attack by air, land, or water using guns, explosives, **PROJECTILES**, vehicles, or other devices used to deliver destructive force. Other acts that satisfy the overall intent may be included. **HOSTILE ACTION** should not be construed to include acts of civil disobedience or felonious acts that are not part of a concerted attack on the NPP. Non-terrorism-based EALs

should be used to address such activities, (i.e., this may include violent acts between individuals in the owner controlled area).

HOSTILE FORCE - One or more individuals who are engaged in a determined assault, overtly or by stealth and deception, equipped with suitable weapons capable of killing, maiming, or causing destruction.

IMMINENT - Mitigation actions have been ineffective, additional actions are not expected to be successful, and trended information indicates that the event or condition will occur. Where **IMMINENT** time frames are specified, they shall apply.

INABILITY TO DIRECTLY MONITOR - Operational Aid Computer data points are unavailable or gauges/panel indications are not readily available to the operator.

INTRUSION - A person(s) present in a specified area without authorization. Discovery of a **BOMB** in a specified area is indication of **INTRUSION** into that area by a **HOSTILE FORCE**.

ISFSI - Independent Spent Fuel Storage Installation.

NO MODE - Defueled.

PROJECTILE - An object directed toward a NPP that could cause concern for its continued operability, reliability, or personnel safety.

PROLONGED - a duration beyond normal limits, defined as "greater than 15 minutes" or as determined by the judgement of the Emergency Coordinator.

PROTECTED AREA - Typically the site specific area which normally encompasses all controlled areas within the security **PROTECTED AREA** fence.

REACTOR COOLANT SYSTEM (RCS/NCS) LEAKAGE – RCS Operational Leakage as defined in the Technical Specification Basis B 3.4.13.

RUPTURED - (As relates to Steam Generator) - Existence of primary to secondary leakage of a magnitude sufficient to require or cause a reactor trip and safety injection.

SABOTAGE - Deliberate damage, misalignment, or mis-operation of plant equipment with the intent to render the equipment inoperable. Equipment found tampered with or damaged due to malicious mischief may not meet the definition of **SABOTAGE** until this determination is made by security supervision.

SECURITY CONDITION - Any Security Event as listed in the approved security contingency plan that constitutes a threat/compromise to site security, threat/risk to site personnel, or a potential degradation to the level of safety of the plant. A **SECURITY CONDITION** does not involve a **HOSTILE ACTION**.

SIGNIFICANT TRANSIENT- An unplanned event involving one or more of the following: (I) automatic turbine runback >25% thermal reactor power, (2) electrical load rejection >25% full electrical load; (3) reactor trip, (4) safety injection, (5) thermal power oscillations ≥10%.

SITE BOUNDARY - That area, including the protected area, in which Duke Power Company has the authority to control all activities, including exclusion or removal of personnel and property.

SLC - Selected Licensee Commitments.

SUSTAINED - A duration of time long enough to confirm that the CSF is valid (not momentary). TOTAL EFFECTIVE DOSE EQUIVALENT (TEDE) - The sum of external dose exposure to a radioactive plume, to radionuclides deposited on the ground by the plume, and the internal exposure from inhaled radionuclides deposited in the body.

TOXIC GAS - A gas that is dangerous to life or health by reason of inhalation or skin contact (e.g. chlorine).

UNCONTROLLED - Event is not the result of planned actions by the plant staff.

UNPLANNED - An event or action is UNPLANNED if it is not the expected result of normal operations, testing, or maintenance. Events that result in corrective or mitigative actions being taken in accordance with abnormal or emergency procedures are UNPLANNED.

VALID - An indication or report or condition is considered to be VALID when it is conclusively verified by: (I) an instrument channel check, or (2) indications on related or redundant instrumentation, or (3) by direct observation by plant personnel such that doubt related to the instrument's operability, the condition's existence or the report's accuracy is removed. Implicit in this definition is the need for timely assessment.

VIOLENT - Force has been used in an attempt to injure site personnel or damage plant property.

VISIBLE DAMAGE - Damage to equipment or structure that is readily observable without measurements, testing, or analyses. Damage is sufficient to cause concern regarding the continued operability or reliability of affected safety structure, system, or component. Example damage: deformation due to heat or impact, denting, penetration, rupture, cracking, paint blistering.

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.

## Enclosure 4.1 FISSION PRODUCT BARRIER MATRIX

Use EALs to determine Fission Product Barrier status (Intact, Potential Loss, or Loss). Add points for all 3 barriers. Classify according to the table on page D7.

Note 1: This table is only applicable in Modes 1-4.

Note 2: Also, an event (or multiple events) could occur which results in the conclusion that exceeding the Loss or Potential Loss thresholds is **imminent** (i.e., within 1-3 hours). In this **imminent** loss situation, use judgement and classify as if the thresholds are exceeded.

Note 3: When determining Fission Product Barrier status, the Fuel Clad Barrier should be considered to be lost, or potentially lost, if the conditions for the Fuel Clad Barrier loss or potential loss EALs were met previously (validated and sustained) during the event, even if the conditions do not currently exist.

Note 4: Critical Safety Function (CSF) indications are not meant to include transient alarm conditions which may appear during the start-up of engineered safeguards equipment. A CSF condition is satisfied when the alarmed state is **valid** and **sustained**. The STA should be consulted to affirm if any CSF has been **validated** and an appropriate function restoration procedure implemented prior to that CSF being used as the basis to classify an emergency. {1}

EAL#	Unusual Event	EAL#	Alert	EAL#	Site Area Emergency	EAL#	General Emergency
4.1.U.1	Potential Loss of Containment	4.1.A.1	Loss <u>OR</u> Potential Loss of	4.1.S.1	Loss <u>OR</u> Potential Loss of Both	4.1.G.1	Loss of All Three Barriers
	Contaminent		Nuclear Coolant System		Nuclear Coolant System  AND		Barrors
			Gyoto		Fuel Clad		
4.1.U.2	Loss of Containment	4.1.A.2	Loss OR Potential	4.1.S.2	Loss	4.1.G.2	Loss of Any Two
-	1		Loss of		<u>AND</u>		Barriers <u>AND</u>
			Fuel Clad		Potential Loss		Potential Loss of the
					Combinations of Both		Third
					Nuclear Coolant System		
					AND	i	
1	1			1	Fuel Clad		
		4.1.A.3	Potential Loss of	4.1.S.3	Loss of Containment		
		1	Containment		<u>AND</u>		
			AND		Loss OR Potential Loss		
			Loss OR Potential		of Any Other Barrier		
			Loss of Any Other		-		
			Barrier				

## Enclosure 4.1 FISSION PRODUCT BARRIER MATRIX

NOTE: If a barrier is affected, it has a single point value based on a "potential loss" or a "loss". "Not Applicable" is included in the matrix as a place holder only, and has no point value assigned.

<u>Barrier</u>	Points (1-5)	Potential Loss (X)	Loss (X)	Total Points	Classification
Containment		1	3	1 – 3	Unusual Event
NCS		4	5	4 – 6	Alert
Fuel Clad		4	5	7 – 10	Site Area Emergency
Total Points				11 - 13	General Emergency

- 1. Compare plant conditions against the Fission Product Barrier Matrix on page D8.
- 2. Determine the "potential loss" or "loss" status for each barrier (Containment, NCS and Fuel Clad) based on the EAL symptom description.
- 3. For each barrier, write the highest single point value applicable for the barrier in the "Points" column and mark the appropriate "potential loss" **OR** "loss" column.
- 4. Add the points in the "Points" column and record the sum as "Total Points".
- 5. Determine the classification level based on the number of "Total Points".
- 6. In the table on page D6, under one of the four "classification" columns, select the event (e.g. 4.1.A.1 for Loss of Nuclear Coolant System) that best fits the loss of barrier description.
- 7. Using that EAL number (e.g. 4.1.A.1) select the preprinted notification form **OR** a blank form and complete the required information for Emergency Coordinator/EOF Director approval and transmittal.

4.1.C CONTAINMENT BARRIER	4.1.N NCS BARRIER	4.1.F FUEL CLAD BARRIER	
POTENTIAL LOSS - LOSS - (3 Points) (1 Point)	POTENTIAL LOSS - LOSS - (5 Points) (4 Points)	POTENTIAL LOSS - LOSS - (5 Points) (4 Points)	
1. Critical Safety Function Status	1. Critical Safety Function Status	1. Critical Safety Function Status	
Containment-RED.     Not applicable.	NCS Integrity-RED.     Not applicable.	Core Cooling-ORANGE.     Core Cooling-RED.	
Core cooling - RED path is	● Heat Sink-RED.	Heat Sink-RED.	
indicated for > 15 min.  2. Containment Conditions.	2. NCS Leak Rate	2. Primary Coolant Activity Level	
<ul> <li>Containment Pressure &gt; 15 PSIG.</li> <li>H2 concentration &gt; 9% .</li> <li>Containment pressure greater than 3 psig with either a failure of both</li> <li>Rapid unexplained decrease in containment pressure following initial increase.</li> <li>Containment pressure greater than with LOCA conditions.</li> </ul>	Unisolable leak exceeding the capacity of one charging pump in the normal charging mode with letdown isolated.  GREATER THAN available makeup capacity as indicated by a loss of NCS subcooling.	Not applicable.     Coolant Activity GREATER THAN 300 µCi/cc Dose Equivalent lodine (DEI) I-131.	
trains of NS <u>OR</u> a failure of both trains of VX-CARF  3. Containment Isolation Valves Status After Containment Isolation Actuation	3. SG Tube Rupture	3. Containment Radiation Monitoring	
Not applicable.     Containment isolation is incomplete and a release path from containment exists.	Primary-to-Secondary leak rate exceeds the capacity of one charging pump in the normal charging mode with letdown isolated.  Indication that a SG is Ruptured and has a Non-Isolable secondary line fault.  Indication that a SG is ruptured and a prolonged release of contaminated secondary coolant is occurring from the affected SG to the environment.	Not applicable.      Containment radiation monitor 51     A or 51 B reading at time since shutdown;      0-0.5 hrs. > 99 R/hr     0.5 -2 hrs > 43R/hr     2-4 hrs > 31 R/hr     4-8 hrs > 22 R/hr     >8 hrs > 13 R/hr	
4. SG Secondary Side Release With Primary-to-Secondary Leakage	4. Containment Radiation Monitoring	4. Emergency Coordinator/EOF Director Judgement	
Not applicable.     Release of secondary side to the environment with primary to secondary leakage GREATER THAN Tech Spec allowable.	Not applicable.     Not applicable.	<ul> <li>Any condition, including inability to monitor the barrier, that in the opinion of the Emergency Coordinator/EOF Director indicates LOSS or POTENTIAL LOSS of the fuel clad barrier.</li> </ul>	
5. Significant Radioactive Inventory In Containment	5. Emergency Coordinator/EQF Director Judgement		
<ul> <li>Containment Rad. Monitor</li> <li>EMF51A or 51B</li> <li>Reading @ time since shutdown:</li> <li>&gt; 390 R/hr @ 0 - 0.5 hr</li> <li>&gt; 170 R/hr @ 0.5 - 2 hr</li> <li>&gt; 125 R/hr @ 2 - 4 hr</li> <li>&gt; 90 R/hr @ 4 - 8 hr</li> <li>&gt; 53 R/hr @ &gt; 8 hr.</li> </ul>	Any condition, including inability to monitor the barrier, that in the opinion of the Emergency Coordinator /EOF Director indicates LOSS or POTENTIAL LOSS of the NCS barrier.		
Semergency Coordinator /EOF Director Judgement     Any condition, including inability to monitor the barrier, that in the opinion of			
the Emergency Coordinator/EOF Director indicates LOSS or POTENTIAL LOSS of the containment barrier.			

## ENCLOSURE 4.1 BASIS INFORMATION FOR FISSION PRODUCT BARRIER REFERENCE TABLE

#### **CONTAINMENT BARRIER EALs:**

The Containment Barrier includes the containment building, its connections up to and including the outermost containment isolation valves. This barrier also includes the main steam, feedwater, and blowdown line extensions outside the containment building up to and including the outermost secondary side isolation valve.

Critical Safety Function (CSF) indications are not meant to include transient alarm conditions which may appear during the start-up of engineered safeguards equipment. A CSF condition is satisfied when the alarmed state is valid and sustained.

#### 4.1.C.1 Critical Safety Function Status

- Containment RED indicates containment conditions which may challenge the containment integrity. Therefore, this condition represents a potential loss of the containment barrier.
- Core Cooling RED for greater than 15 minutes in this potential loss EAL
  represents imminent core damage that, if not terminated, could lead to reactor
  vessel failure and an increased potential for containment failure. The potential for
  containment challenge as a result of events at reactor vessel failure makes it
  prudent to consider an unmitigated core damage condition as a potential loss of
  the containment barrier.

Severe accident analyses (e.g., NUREG-1150) have concluded that function restoration procedures can arrest core degradation within the reactor vessel in a significant fraction of the core damage scenarios, and that the likelihood of containment failure is very small in these events. Given this, it is appropriate to provide a reasonable period to allow function restoration procedures to arrest the core melt sequence. Whether or not the procedures will be effective should be apparent within 15 minutes. The Emergency Coordinator/EOF Director should make the declaration as soon as it is determined that the procedures have been, or will be, ineffective.

• There is no "Loss" EAL associated with this item.

#### 4.1.C.2 Containment Conditions

• Containment pressure above 15 psig (the design pressure) indicates that the containment or its heat removal systems are not functioning as intended. This degradation of containment pressure control represents a potential loss of containment integrity.

Rev. 14-1 January, 2014

- A containment hydrogen concentration of 9 volume percent is sufficient to expect
  that any ignition would result in complete combustion of the hydrogen in
  containment and a significant pressure rise. At some initial containment
  pressures, this pressure rise may exceed the capacity of the containment.
  Therefore, this level of hydrogen in the containment represents a potential loss of
  containment integrity.
- Once the Residual Heat Removal system is taking suction from the containment sump, with containment pressure greater than 3 psig and procedural guidance, one train of containment spray is manually aligned to the containment sump. If unable to place one NS train in service or without an operating train of VX-CARF (the CARF with a 10-minute delay) a potential loss of containment exists. At this point a significant portion of the ice in the ice condenser would have melted and the NS system would be needed for containment pressure control.

This EAL for a potential loss of containment applies after automatic or manual alignment of the containment spray system has been attempted with containment pressure greater than 3 psig and less than one full train of NS is operating.

This EAL for a potential loss of containment also applies if containment pressure is greater than 3 psig and at least one train of VX-CARF is not operating after a 10 minute delay. Without a single train of VX-CARF in service following actuation, the potential loss should be credited regardless of whether ECCS is in injection or sump recirculation mode.

- Rapid unexplained loss of pressure (i.e., not attributable to containment spray or condensation effects) following an initial pressure increase indicates a loss of containment integrity.
- Containment pressure and sump levels should increase as a result of the mass and energy release into containment from a Loss of Coolant Accident (LOCA).
   Thus, sump level or containment pressure not increasing indicates an interfacing systems LOCA which is a containment bypass and a loss of containment integrity, or some other containment pressure boundary failure.

#### 4.1.C.3 Containment Isolation Valve Status After Containment Isolation Actuation

- There is no "Potential Loss" EAL associated with this item.
- Failure to isolate those containment pathways which would allow containment atmosphere to be released from containment is a loss of the containment barrier. (Containment Isolation Valve(s) not closed AND downstream pathway to the environment exists after Containment Isolation Signal.) PIP G 08-00333

## 4.1.C.4 Steam Generator (SG) Secondary Side Release With Primary To Secondary Leakage

- There is no "Potential Loss" EAL associated with this item.
- Secondary side releases to the environment include those from the condenser air ejectors, CA turbine exhaust, SG Power Operated Relief Valves (PORVs), atmospheric dump valves, faulted steam lines, and main steam safety valves. Steam releases, in combination with primary to secondary leakage, constitute a bypass of the containment and, therefore, a loss of the containment barrier. The appropriate classification can be determined in combination with the SG Tube Rupture EAL under the Reactor Coolant System (NCS) barrier.

#### 4.1.C.5 Significant Radioactive Inventory in Containment

NOTE: If EMF-51A and EMF-51B are unavailable, readings can be calculated from procedure HP/0/B/1009/02, "Alternative Method for Determining Dose Rates within the Reactor Building."

• These values indicate significant fuel damage well in excess of the EALs associated with both loss of Fuel Clad and loss of NCS Barriers. NUREG-1228, Source Estimations During Incident Response to Severe Nuclear Power Plant Accidents, indicates that such conditions do not exist when the amount of clad damage is less than 20%. This amount of activity in containment, if released, could have such severe consequences that it is prudent to treat this as a potential loss of containment.

By treating the radioactive inventory in containment as a potential loss, a General Emergency will be declared when the conditions of the fuel clad and NCS barriers are included in the evaluation. This will allow the appropriate protective actions to be recommended.

• There is no "Loss" EAL associated with this item.

#### 4.1.C.6 Emergency Coordinator/EOF Director Judgement

• This EAL addresses any other factors that are to be used by the Emergency Coordinator/EOF Director in determining whether the containment barrier is lost or potentially lost. In addition, the inability to monitor the barrier should also be incorporated in this EAL as a factor in Emergency Coordinator/EOF Director judgement that the barrier may be considered lost or potentially lost.

#### **REACTOR COOLANT SYSTEM (NCS) BARRIER EALs:**

The NCS Barrier includes the NCS primary side and its connections up to and including the pressurizer safety and relief valves, and other connections up to and including the primary isolation valves.

#### 4.1.N.1 Critical Safety Function Status

- NCS Integrity RED indicates NCS pressure and temperature conditions which may challenge the Reactor Vessel integrity. Heat Sink RED indicates the ultimate heat sink function is under extreme challenge. Either of these conditions indicate a potential loss of the NCS Barrier.
- There is no "Loss" EAL associated with this item.

#### 4.1.N.2 NCS Leak Rate

- Small leaks may result in the inability to maintain normal liquid inventory within the NCS by operation of the Chemical and Volume Control System, which is considered as one centrifugal charging pump discharging to the charging header with the letdown line isolated. If letdown cannot be isolated, and a second charging pump is required, this is still considered a potential loss of the NCS barrier. The need for compensatory action to maintain normal liquid inventory is an indication of a degraded NCS barrier and is considered to be a potential loss of the barrier.
- The loss of subcooling is the fundamental indication that the inventory loss from the primary system exceeds the capacity of the inventory control systems. If the loss of subcooling is indicated, the NCS barrier is considered lost.

#### 4.1.N.3 SG Tube Rupture

- Small Steam Generator tube leaks may result in the inability to maintain normal liquid inventory within the Reactor Coolant System (NCS) by operation of the Chemical and Volume Control System, which is considered as one centrifugal charging pump discharging to the charging header with the letdown line isolated. If letdown cannot be isolated, and a second charging pump is required, this is still considered a potential loss of the NCS barrier. The need for compensatory action to maintain normal liquid inventory is an indication of a degraded NCS barrier and is considered to be a potential loss of the barrier.
- A tube rupture with an unisolable secondary line fault is generally indicated by a
  reduction in primary coolant inventory, increased secondary radiation levels, and
  an uncontrolled or complete depressurization of the ruptured SG. This set of
  conditions represents a loss of the NCS and containment fission product barriers.
  In conjunction with containment barrier loss #4, this condition will result in the

Rev. 14-1 January, 2014

- declaration of a Site Area Emergency. Escalation to a General Emergency would be indicated by at least a potential loss of the fuel clad barrier.
- Secondary radiation increases should be observed via radiation monitoring of Condenser Air Ejector Discharge, SG Blowdown, Main Steam, and/or SG Sampling System. Determination of the "uncontrolled" depressurization of the ruptured SG should be based on indication that the pressure decrease in the ruptured steam generator is not a function of operator action. This should prevent declaration based on a depressurization that results from an EOP induced cooldown of the NCS that does not involve the prolonged release of contaminated secondary coolant from the affected SG to the environment. This EAL should encompass steam breaks, feed breaks, and stuck open safety or relief valves. These conditions represents a loss of the NCS and containment fission product barriers.

#### 4.1.N.4 Containment Radiation Monitoring

• This EAL has been deleted for the following reasons. The containment process radiation monitors (EMF-38, 39, and 40) serve to provide early indication of reactor coolant (NC) leaks in containment to ensure compliance with Technical Specifications and Selected Licensee Commitments. These monitors alarm on small NC leaks in and below the Unusual Event (IC 4.2.U.4) range. Also, these monitors automatically isolate on a safety injection. For these reasons, it is not appropriate to use these monitors as an indication of a loss of the reactor coolant system barrier. The reactor building monitors (EMF-51A and 51B) used for the Fuel Clad EAL 4.1.F.3 are not able to indicate clearly the lower levels of activity in containment resulting from a leak of reactor coolant with normal activity levels. Thus, this EAL will be omitted and other indication will be used to determine a potential loss or loss of the Reactor Coolant System Barrier.

#### 4.1.N.5 Emergency Coordinator/EOF Director Judgement

• This EAL addresses any other factors that are to be used by the Emergency Coordinator/EOF Director in determining whether the NCS barrier is lost or potentially lost. In addition, the inability to monitor the barrier should also be incorporated in this EAL as a factor in Emergency Coordinator/EOF Director judgement that the barrier may be considered lost or potentially lost.

#### **FUEL CLAD BARRIER EALs:**

The Fuel Clad Barrier is the zircalloy tubes that contain the fuel pellets.

#### 4.1.F.1 Critical Safety Function Status

- Core Cooling ORANGE indicates subcooling has been lost and that some clad damage may occur. Heat Sink - RED indicates the ultimate heat sink function is under extreme challenge. Either of these conditions indicate a potential loss of the Fuel Clad Barrier.
- Core Cooling RED indicates significant reactor coolant superheating and core uncovery. Clad damage under these conditions is likely; therefore, this is indication of loss of the Fuel Clad Barrier.

#### 4.1.F.2 Primary Coolant Activity Level

- There is no equivalent "Potential Loss" EAL for this item.
- The value of 300 μCi/cc I-131 equivalent coolant activity is well above that expected for iodine spikes and corresponds to about 2% to 5% fuel clad damage. This amount of clad damage indicates significant clad damage and thus the Fuel Clad Barrier is considered lost.

#### 4.1.F.3 Containment Radiation Monitoring

• There is no "Potential Loss" EAL associated with this item.

NOTE: If EMF-51A and EMF-51B are unavailable, readings can be calculated from procedure HP/0/B/1009/02, "Alternative Method for determining Dose Rates within the Reactor Building."

• These values indicate the release of reactor coolant, with elevated activity indicative of fuel damage, into the containment. Reactor coolant concentrations of this magnitude are several times larger than the maximum concentrations (including iodine spiking) allowed within technical specifications and are therefore indicative of fuel damage (approximately 5% clad failure depending on core inventory and NCS volume). This EAL indicates a loss of both the fuel clad barrier and a loss of NCS barrier.

#### 4.1.F.4 Emergency Coordinator/EOF Director Judgement

 This EAL addresses any other factors that are to be used by the Emergency Coordinator/EOF Director in determining whether the Fuel Clad barrier is lost or potentially lost. In addition, the inability to monitor the barrier should also be incorporated in this EAL as a factor in Emergency Coordinator/EOF Director judgement that the barrier may be considered lost or potentially lost.

REFERENCE: NUMARC/NESP-007, REV. 2, 01/92, BASIS INFORMATION FOR TABLE 4

## ENCLOSURE 4.2 SYSTEM MALFUNCTIONS

UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
4.2.U.1 Inability to Reach Required Shutdown Within Technical Specification Limits.	4.2.A.1 Unplanned Loss of Most or All Safety System Annunciation or Indication in Control Room With Either (1) a Significant Transient in Progress, or (2) Compensatory Non-Alarming Indicators Unavailable.	4.2.S.1 Inability to Monitor a Significant Transient in Progress.	N/A
4.2.U.2 Unplanned Loss of Most or All Safety System Annunciation or Indication in the Control Room for Greater Than 15 Minutes.			
4.2.U.3 Fuel Clad Degradation.			
4.2.U.4 Reactor Coolant System (NCS) Leakage.			
4.2.U.5 Unplanned Loss of All Onsite or Offsite Communications.			

#### ENCLOSURE 4.2 SYSTEM MALFUNCTIONS

#### **UNUSUAL EVENT**

4.2.U.1 Inability to Reach Required Shutdown Within Technical Specification Limits.

**OPERATING MODE APPLICABILITY: Mode 1 (Power Operation)** 

Mode 2 (Startup)
Mode 3 (Hot Standby)
Mode 4 (Hot Shutdown)

#### **EMERGENCY ACTION LEVEL:**

**4.2.U.1-1** Plant is not brought to required operating mode within Technical Specifications LCO Action Statement Time.

#### **BASIS:**

Limiting Conditions of Operation (LCOs) require the plant to be brought to a required shutdown mode when the Technical Specification required configuration cannot be restored. Depending on the circumstances, this may or may not be an emergency or precursor to a more severe condition. In any case, the initiation of plant shutdown required by the site Technical Specifications requires a one hour report under 10 CFR 50.72 (b) Non-emergency events. The plant is within its safety envelope when being shut down within the allowable action statement time in the Technical Specifications. An immediate Notification of an Unusual Event is required when the plant is not brought to the required operating mode within the allowable action statement time in the Technical Specifications. Declaration of an Unusual Event is based on the time at which the LCO-specified action statement time period elapses under the site Technical Specifications and is not related to how long a condition may have existed. Other required Technical Specification shutdowns that involve precursors to more serious events are addressed by other System Malfunction, Hazards, or Fission Product Barrier Degradation ICs.

REFERENCE: NUMARC/NESP-007, REV. 2, 01/92, SU2

#### SYSTEM MALFUNCTIONS

#### **UNUSUAL EVENT**

4.2.U.2 Unplanned Loss of Most or All Safety System Annunciation or Indication in the Control Room for Greater Than 15 Minutes.

**OPERATING MODE APPLICABILITY:** Mode 1 (Power Operation)

Mode 2 (Startup) Mode 3 (Hot Standby) Mode 4 (Hot Shutdown)

#### **EMERGENCY ACTION LEVEL:**

- **4.2.U.2-1** The following conditions exist:
  - a. Unplanned loss of most (>50%) annunciators associated with safety systems for greater than 15 minutes.

#### AND

b. In the opinion of the Operations Shift Manager/Emergency Coordinator/EOF Director, the loss of the annunciators or indicators requires additional personnel (beyond normal shift compliment) to safely operate the unit.

#### **BASIS:**

This IC and its associated EAL are intended to recognize the difficulty associated with monitoring changing plant conditions without the use of a major portion of the annunciation or indication equipment. "Unplanned" loss of annunciators or indicator excludes scheduled maintenance and testing activities. Quantification of "most" is arbitrary; however, this judgement is supported by the specific opinion of the Operations Shift Manager/Emergency Coordinator/EOF Director that additional operating personnel will be required to provide increased monitoring of system operation to safely operate the unit. Fifteen minutes was selected as a threshold to exclude transient or momentary power losses.

This Unusual Event will be escalated to an Alert if a transient is in progress during the loss of annunciation or indication.

Due to the limited number of safety systems in operation during cold shutdown, refueling, and defueled modes, no IC is indicated during these modes of operation.

REFERENCE: NUMARC/NESP-007, REV. 2, 01/92, SU3

#### **SYSTEM MALFUNCTIONS**

#### **UNUSUAL EVENT**

4.2.U.3 Fuel Clad Degradation.

**OPERATING MODE APPLICABILITY:** Mode 1 (Power Operation)

Mode 2 (Startup)
Mode 3 (Hot Standby)
Mode 4 (Hot Shutdown)
Mode 5 (Cold Shutdown)

#### **EMERGENCY ACTION LEVEL:**

**4.2.U.3-1** Dose Equivalent I-131 greater than the Technical Specification allowable limit.

#### **BASIS:**

This IC is included as an Unusual Event because it is considered to be a potential degradation in the level of safety of the plant and a potential precursor of more serious problems. The EAL addresses coolant samples exceeding coolant technical specifications for iodine spike. Escalation of this IC to the Alert level is via the Fission Product Barrier Degradation Monitoring ICs. This EAL applies in Modes 1, 2, 3, 4, and 5

REFERENCE: NUMARC/NESP-007, REV. 2, 01/92, SU4

#### UNUSUAL EVENT

4.2.U.4 Reactor Coolant System (NCS) Leakage.

**OPERATING MODE APPLICABILITY:** 

**Mode 1 (Power Operations)** 

Mode 2 (Startup) Mode 3 (Hot Standby) Mode 4 (Hot Shutdown)

# **EMERGENCY ACTION LEVELS:**

**4.2.U.4-1** Unidentified leakage  $\geq 10$  gpm.

**4.2.U.4-2** Pressure boundary leakage  $\geq 10$  gpm.

**4.2.U.4-3** Identified leakage  $\geq$  25 gpm.

#### **BASIS:**

This IC is included as an Unusual Event because it may be a precursor of more serious conditions and, as a result, is considered to be a potential degradation of the level of safety of the plant. NCS leakage is leakage into the containment area or outside the containment area from the Reactor Coolant Pressure Boundary (RCPB). The RCPB is defined by 10CFR50.2 (Definitions) and from this definition the RCPB applicability at McGuire is:

RCPB means all those pressure-containing components of pressurized water-cooled reactors, such as pressure vessels, piping, pumps, and valves, which are:

- 1. Part of the Reactor Coolant System, or
- 2. Connected to the Reactor Coolant System, up to and including any and all of the following:
  - a. The outermost containment isolation valve in system piping which penetrates containment,
  - b. The second of two valves normally closed during normal reactor operation in system piping which does not penetrate containment (MNS has not currently identified any examples),
  - c. The pressurizer safety valves and PORVs.

Interconnected system leakage (ie: letdown, RHR) that can be easily detected and readily isolated is not included in this IC. This IC applies to any leak source that cannot be readily detected or isolated (ie: intersystem LOCA, letdown that cannot be isolated). NCS leakage, identified and unidentified, are used in this IC as their Tech Spec definitions. The 10 gpm value for the unidentified and pressure boundary leakage was selected as it is observable with normal control room indications. Lesser values must generally be determined through time-consuming surveillance tests (e.g., mass balances). The EAL for identified leakage is set at a higher value due to the lesser significance of identified leakage in comparison to unidentified or pressure boundary leakage. In either case, escalation of this IC to the Alert level is via Fission Product Barrier Degradation ICs or IC, "Inability to Maintain Plant in Cold Shutdown."

REFERENCE: NUMARC/NESP-007, REV. 2, 01/92, SU5

Rev. 14-1 January, 2014

# **UNUSUAL EVENT**

4.2.U.5 Unplanned Loss of All Onsite or Offsite Communications.

OPERATING MODE APPLICABILITY: All

#### **EMERGENCY ACTION LEVELS:**

- **4.2.U.5-1** Loss of all onsite communications capability (internal phone system, PA system, onsite radio system) affecting the ability to perform routine operations.
- **4.2.U.5-2** Loss of all offsite communications capability (Selective Signaling, NRC ETS lines, offsite radio system, commercial phone system) affecting the ability to communicate with offsite authorities.

#### **BASIS:**

The purpose of this IC and its associated EALs is to recognize a loss of communications capability that either defeats the plant operations staff ability to perform routine tasks necessary for plant operations or the ability to communicate problems with offsite authorities. The loss of offsite communications ability is expected to be significantly more comprehensive than the condition addressed by 10 CFR 50.72.

This EAL is intended to be used only when extraordinary means are being utilized to make communications possible (relaying of information from radio transmissions, individuals being sent to offsite locations, etc.).

#### **ALERT**

4.2.A.1 Unplanned Loss of Most or All Safety System Annunciation or Indication in Control Room With Either (1) a Significant Transient in Progress, or (2) Compensatory Non-Alarming Indicators Unavailable.

**OPERATING MODE APPLICABILITY:** Mode 1 (Power Operation)

Mode 2 (Startup)
Mode 3 (Hot Standby)
Mode 4 (Hot Shutdown)

#### **EMERGENCY ACTION LEVEL:**

**4.2.A.1-1** The following conditions exist:

a. Unplanned loss of most (>50%) annunciators associated with safety systems for greater than 15 minutes.

#### AND

b. In the opinion of the Operations Shift Manager/Emergency Coordinator/EOF Director, the loss of the annunciators or indicators requires additional personnel (beyond normal shift compliment) to safely operate the unit.

#### **AND**

- c. Either of the following:
  - A significant plant transient is in progress.
  - Loss of the Operator Aid Computer (OAC).

# **BASIS:**

This IC and its associated EAL are intended to recognize the difficulty associated with monitoring changing plant conditions without the use of a major portion of the annunciation or indication equipment during a transient. Quantification of "Most" is arbitrary; however, this judgement is supported by the specific opinion of the Operations Shift Manager/Emergency Coordinator/EOF Director that additional operating personnel will be required to provide increased monitoring of system operation to safely operate the unit. Fifteen minutes was selected as a threshold to exclude transient or momentary power losses.

"Significant Transient" includes response to automatic or manually initiated functions such as reactor trips, runbacks involving greater than 25% thermal power change, ECCS injections, or thermal power oscillations of 10% or greater.

Significant indication is available from the OAC. Loss of the OAC in conjunction with the loss of other indications would further impair the ability to monitor plant parameters.

Due to the limited number of safety systems in operation during cold shutdown, refueling and defueled modes, no IC is indicated during these modes of operation.

This Alert will be escalated to a Site Area Emergency if the operating crew cannot monitor the transient in progress.

#### SITE AREA EMERGENCY

4.2.S.1 Inability to Monitor a Significant Transient in Progress.

**OPERATING MODE APPLICABILITY:** Mode 1 (Power Operation)

Mode 2 (Startup) Mode 3 (Hot Standby)

Mode 4 (Hot Shutdown)

#### **EMERGENCY ACTION LEVEL:**

- **4.2.S.1-1** The following conditions exist:
  - a. Loss of most (>50%) annunciators associated with safety systems.

#### AND

b. A significant plant transient is in progress.

# **AND**

c. Loss of the OAC.

#### **AND**

- d. Inability to provide manual monitoring of any of the following Critical Safety Functions:
  - subcriticality
  - core cooling
  - heat sink
  - containment.

#### **BASIS:**

This IC and its associated EAL are intended to recognize the inability of the control room staff to monitor the plant response to a transient. A Site Area Emergency is considered to exist if the control room staff cannot monitor safety functions needed for protection of the public.

"Significant Transient" includes response to automatic or manually initiated functions such as trips, runbacks involving greater than 25% thermal power change, ECCS injections, or thermal power oscillations of 10% or greater.

# **GENERAL EMERGENCY**

Not Applicable

Rev. 14-1 January, 2014

# ENCLOSURE 4.3 ABNORMAL RAD LEVELS/RADIOLOGICAL EFFLUENT

UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
4.3.U.1 Any Unplanned Release of Gaseous or Liquid Radioactivity to the Environment that Exceeds Two Times the SLC Limits for 60 Minutes or Longer.	4.3.A.1 Any Unplanned Release of Gaseous or Liquid Radioactivity to the Environment that Exceeds 200 Times the SLC Limits for 15 Minutes or Longer.	4.3.S.1 Boundary Dose Resulting from an Actual or Imminent Release of Radioactivity that Exceeds 100 mRem TEDE or 500 mRem CDE Adult Thyroid for the Actual or Projected Duration of the Release.	4.3.G.1 Boundary Dose Resulting from an Actual or Imminent Release of Radioactivity that Exceeds 1000 mRem TEDE or 5000 mRem CDE Adult Thyroid for the Actual or Projected Duration of the Release.
4.3.U.2 Unexpected Increase in Plant Radiation or Airborne Concentration.	4.3.A.2 Major Damage to Irradiated Fuel or Loss of Water Level that Has or Will Result in the Uncovering of Irradiated Fuel Outside the Reactor Vessel.		
	4.3.A.3 Release of Radioactive Material or Increases in Radiation Levels Within the Facility That Impedes Operation of Systems Required to Maintain Safe Operations or to Establish or Maintain Cold Shutdown.		

# ENCLOSURE 4.3 ABNORMAL RAD LEVELS/RADIOLOGICAL EFFLUENT

#### UNUSUAL EVENT

4.3.U.1 Any Unplanned Release of Gaseous or Liquid Radioactivity to the Environment that Exceeds Two Times the SLC Limits for 60 Minutes or Longer.

**OPERATING MODE APPLICABILITY: All** 

# **EMERGENCY ACTION LEVELS:**

NOTE: If monitor reading is sustained for the time period indicated in the EALs **AND** the required assessments (procedure calculations) cannot be completed within this period, declaration must be made based on the valid radiation monitor reading.

- **4.3.U.1-1** A valid indication on radiation monitor EMF-49L, EMF-44L, or EMF-31 (when aligned to RC) of  $\geq 5.45E+06$  cpm for  $\geq 60$  minutes or will likely continue for  $\geq 60$  minutes, which indicates that the release may have exceeded the initiating condition and indicates the need to assess the release with procedure HP/0/B/1009/010, HP/0/B/1009/029, or SH/0/B/2005/001.
- **4.3.U.1-2** A valid indication on radiation monitor EMF-36L of ≥ 2.05E+04 cpm for ≥ 60 minutes or will likely continue for ≥60 minutes, which indicates that the release may have exceeded the initiating condition and indicates the need to assess the release with procedure HP/0/B/1009/010, HP/0/B/1009/029, or SH/0/B/2005/001.
- 4.3.U.1-3 A valid indication on radiation monitor EMF-31 (when aligned to WC or WWCB) of ≥ 9.174E+03 cpm for ≥ 60 minutes or will likely continue for ≥60 minutes, which indicates that the release may have exceeded the initiating condition and indicates the need to assess the release with procedure HP/0/B/1009/010, HP/0/B/1009/029, or SH/0/B/2005/001.
- **4.3.U.1-4** Gaseous effluent being released exceeds two times SLC 16.11-6 for ≥ 60 minutes as determined by Radiation Protection (RP) procedure.
- **4.3.U.1-5** Liquid effluent being released exceeds two times SLC 16.11-1 for  $\geq$  60 minutes as determined by Radiation Protection (RP) procedure.

#### **BASIS:**

The term "Unplanned", as used in this context, includes any release for which a liquid waste release (LWR) or gaseous waste release (GWR) package was not prepared, or a release that exceeds the conditions (e.g., minimum dilution flow, maximum discharge flow, alarm set points, etc.) on the applicable package.

Valid means that a radiation monitor reading has been confirmed to be correct.

Unplanned releases in excess of two times the site Selected Licensee Commitments (SLC) that continue for 60 minutes or longer represent an uncontrolled situation and hence, a potential degradation in the level of safety. It is not intended that the release be averaged over 60 minutes. The event should be declared as soon as it is determined that the release duration has or will likely exceed 60 minutes.

The gaseous release rate SLC and Technical Specification (TS) are based on limiting gaseous release rates to the SITE BOUNDARY to 500 mr/year total body.

The liquid release rate SLC and TS are based on limiting liquid release rates to the UNRESTRICTED AREA to 10 times the Effluent Concentration (EC) valves given in 10CFR20.1001-20.2401, Appendix B, Table 2, Column 2.

Monitor indications are based on the methodology of the site Offsite Dose Calculation Manual (ODCM). Annual average meteorology has been used. Radiation Protection will use HP/0/B/1009/010, "Release of Radioactive Effluents Exceeding Selected Licensee Commitments", HP/0/B/1009/029, "Initial Response On-Shift Dose Assessment" or SH/0/B/2005/001 "Emergency Response Offsite Dose Projections" to quantify a release.

# ABNORMAL RAD LEVELS/RADIOLOGICAL EFFLUENT

#### UNUSUAL EVENT

4.3.U.2 Unexpected Increase in Plant Radiation or Airborne Concentration.

**OPERATING MODE APPLICABILITY: All** 

# **EMERGENCY ACTION LEVELS:**

- **4.3.U.2-1** Indication of uncontrolled water level decrease of greater than 6 inches in the reactor refueling cavity with all irradiated fuel assemblies remaining covered by water.
- **4.3.U.2-2** Uncontrolled water level decrease of greater than 6 inches in the spent fuel pool and fuel transfer canal with all irradiated fuel assemblies remaining covered by water.
- **4.3.U.2-3** Unplanned valid area EMF reading exceeds the levels shown in Enclosure 4.10 of RP/0/A/5700/000.

#### **BASIS:**

Valid means that a radiation monitor reading has been confirmed to be correct.

All of the above events tend to have long lead times relative to potential for radiological release outside the site boundary; thus, impact to public health and safety is very low.

In light of reactor cavity seal failure incidents, explicit coverage of these types of events via EALs 1 and 2 is appropriate given their potential for increased doses to plant staff. A threshold value of 6 inches is used to allow time for mitigating actions to successfully terminate the inventory loss. Credit should not be taken for inventory additions to maintain level above the 6 inch threshold. Classification as an Unusual Event is warranted as a precursor to a more serious event.

EAL 3 addresses unplanned increases in in-plant radiation levels that represent a degradation in the control of radioactive material, and represent a potential degradation in the level of safety of the plant. The EMF readings for an Unusual Event are 1000 times the normal value. Enclosure 4.10 of RP/0/A/5700/000 will provide the actual readings for these monitors. This EAL escalates to an Alert if the increases impair safe operation.

# ABNORMAL RAD LEVELS/RADIOLOGICAL EFFLUENT

#### ALERT

4.3.A.1 Any Unplanned Release of Gaseous or Liquid Radioactivity to the Environment that Exceeds 200 Times the SLC limits for 15 Minutes or Longer.

**OPERATING MODE APPLICABILITY: All** 

# **EMERGENCY ACTION LEVELS:**

NOTE: If monitor reading is sustained for the time period indicated in the EALs **AND** the required assessments (procedure calculations) cannot be completed within this period, declaration must be made based on the valid radiation monitor reading.

- **4.3.A.1-1** A valid indication on radiation monitor EMF-49H of ≥ 1.56E+03 cpm for ≥ 15 minutes or will likely continue for ≥15 minutes, which indicates that the release may have exceeded the initiating condition and indicates the need to assess the release with procedure HP/0/B/1009/010, HP/0/B/1009/029, or SH/0/B/2005/001.
- **4.3.A.1-2** A valid indication on radiation monitor EMF-36L of ≥ 2.05E+06 cpm for ≥ 15 minutes or will likely continue for ≥15 minutes, which indicates that the release may have exceeded the initiating condition and indicates the need to assess the release with procedure HP/0/B/1009/010, HP/0/B/1009/029, or SH/0/B/2005/001.
- **4.3.A.1-3** Gaseous effluent being released exceeds 200 times the level of SLC 16.11-6 for  $\geq$  15 minutes as determined by Radiation Protection (RP) procedure.
- **4.3.A.1-4** Liquid effluent being released exceeds 200 times the level of SLC 16.11-1 for  $\geq$  15 minutes as determined by Radiation Protection (RP) procedure.

#### **BASIS:**

The term "Unplanned", as used in this context, includes any release for which a liquid waste release (LWR) or gaseous waste release (GWR) package was not prepared, or a release that exceeds the conditions (e.g., minimum dilution flow, maximum discharge flow, alarm set points, etc.) on the applicable package.

Valid means that a radiation monitor reading has been confirmed to be correct.

This event escalates from the Unusual Event by escalating the magnitude of the release by a factor of 100.

Rev. 14-1 January, 2014 It is not intended that the release be averaged over 15 minutes. The event should be declared as soon as it is determined that the release duration has or will likely exceed 15 minutes.

The gaseous release rate SLC and Technical Specification (TS) are based on limiting gaseous release rates to the SITE BOUNDARY to 500 mr/year total body.

The liquid release rate SLC and TS are based on limiting liquid release rates to the UNRESTRICTED AREA to 10 times the Effluent Concentration (EC) valves given in 10CFR20.1001-20.2401, Appendix B, Table 2, Column 2.

Monitor indications are based on the methodology of the site Offsite Dose Calculation Manual (ODCM). Annual average meteorology has been used. Radiation Protection will use HP/0/B/1009/010, "Release of Radioactive Effluents Exceeding Selected Licensee Commitments,", HP/0/B/1009/029, "Initial Response On-Shift Dose Assessment", or SH/0/B/2005/001 "Emergency Response Offsite Dose Projections" to quantify a release.

# ABNORMAL RAD LEVELS/RADIOLOGICAL EFFLUENT

#### **ALERT**

4.3.A.2 Major Damage to Irradiated Fuel or Loss of Water Level that Has or Will Result in the Uncovering of Irradiated Fuel Outside the Reactor Vessel.

Does not apply to spent fuel in dry cask storage. Refer to basis for additional information.

# **OPERATING MODE APPLICABILITY: All**

#### **EMERGENCY ACTION LEVELS:**

- **4.3.A.2-1** An unplanned valid trip II alarm on any of the following radiation monitors:
  - a. Spent Fuel Building Refueling Bridge

1EMF-17

2EMF-4.

b. Spent Fuel Pool Ventilation

1EMF-42

2EMF-42.

c. Reactor Building Refueling Bridge

1EMF-16 (Applies to Mode 6 and No Mode Only)

2EMF-3 (Applies to Mode 6 and No Mode Only).

d. Containment Noble Gas Monitors

1EMF-39 (Applies to Mode 6 and No Mode Only)

2EMF-39 (Applies to Mode 6 and No Mode Only).

- **4.3.A.2-2** Plant personnel report that water level drop in reactor refueling cavity, spent fuel pool, or fuel transfer canal has or will exceed makeup capacity such that any irradiated fuel will become uncovered.
- **4.3.A.2-3** NC system wide range level < 358 inches after initiation of NC system make-up.

#### AND

Any irradiated fuel assembly not capable of being lowered into spent fuel pool or reactor vessel.

**4.3.A.2-4** Spent Fuel Pool or Fuel Transfer Canal level decrease of >2 feet after initiation of make-up.

# **AND**

Any irradiated fuel assembly not capable of being fully lowered into the spent fuel pool racks or transfer canal fuel transfer system basket.

#### **BASIS:**

This IC applies to spent fuel requiring water coverage and does not apply to spent fuel in dry cask storage. There is time available to take corrective actions, and there is little potential for substantial fuel damage. Thus, an Alert Classification for this event is appropriate. Escalation, if appropriate, would occur via Abnormal Rad Level/Radiological Effluent or Emergency Coordinator/EOF Director Judgement.

The intent of the "does not apply to spent fuel in dry cask storage" statement is to ensure that spent fuel in dry cask storage is not considered for application under Initiating Condition 4.3.A.2. Spent fuel in dry cask storage can be defined as spent fuel assemblies stored in an Independent Spent Fuel Storage Installation (ISFSI) cask which has been totally evacuated of liquid coolant and completely sealed to preclude leakage to the environment.

It is NOT the intent of the "does not apply to spent fuel in dry cask storage" statement to eliminate any or all consideration of Initiating Condition 4.3.A.2 where spent fuel or other equipment is being manipulated to support loading, evacuating, sealing, or preparing a dry cask for transportation to the ISFSI pads. Several examples of this include:

- 1) Spent fuel is physically damaged during handling operations to support loading a cask with spent fuel, resulting in a valid trip II alarm on a listed radiation monitor. EAL 4.3.A.2-1 would apply in this case.
- 2) A dry cask which has been loaded, evacuated, and sealed is tipped over or dropped greater than 12 inches while still in the Spent Fuel Building, resulting in a valid trip II alarm on a listed radiation monitor. In this case, EAL 4.3.A.2-1 would not apply, but EAL 4.7.U.1-6 Independent Spent Fuel Cask tipped over or dropped greater than 12 inches would apply because the cask has been loaded, evacuated, and sealed as a unit.
- 3) During dry cask operations, actual spent fuel damage occurs prior to evacuating and sealing the cask due to other unassociated events, resulting in a valid trip II alarm on a listed radiation monitor. EAL 4.3.A.2-1 would apply in this case.

The key to evaluating such an event is <u>when</u> the spent fuel damage occurs. After a dry cask has been evacuated and sealed, this IC does not apply, but IC 4.7.U.1 could apply. Damage to spent fuel that may occur in the dry cask storage process prior to completion of evacuation and sealing of the dry cask should be considered under this IC.

EAL 2: Due to concerns for ALARA and personnel safety, personnel should not remain in the area to observe that irradiated fuel is uncovered. Personnel should exit the area as quickly as possible and report the occurrence to the Control Room.

# ABNORMAL RAD LEVELS/RADIOLOGICAL EFFLUENT

#### ALERT

4.3.A.3 Release of Radioactive Material or Increases in Radiation Levels Within the Facility That Impedes Operation of Systems Required to Maintain Safe Operations or to Establish or Maintain Cold Shutdown.

# **OPERATING MODE APPLICABILITY: All**

# **EMERGENCY ACTION LEVELS:**

- **4.3.A.3-1** Valid reading on EMF-12 greater than 15 mR/hr in the Control Room.
- **4.3.A.3-2** Valid indication of radiation levels greater than 15 mR/hr in the Central Alarm Station (CAS) or Secondary Alarm Station (SAS).
- **4.3.A.3-3** Valid area EMF reading exceeds the limits shown in Enclosure 4.10 of RP/0/A/5700/000.

# **BASIS**:

Valid means that a radiation monitor reading has been confirmed to be correct.

This initiating condition (IC) addresses increased radiation levels that impede necessary access to operating stations, or other areas containing equipment that must be operated manually, in order to maintain safe operation or perform a safe shutdown. It is this impaired ability to operate the plant that results in the actual or potential substantial degradation of the level of safety of the plant. This situation is indicative of a significant radiological problem that warrants additional resources to assess and mitigate.

This IC is not intended to apply to anticipated temporary increases due to planned events (e.g., incore detector movement, radwaste container movement, depleted resin transfers, etc.)

The Control Room, CAS, and SAS are areas that require continuous occupancy. The value of 15 mR/hr is derived from the GDC 19 (general design criteria) value of 5 Rem in 30 days with adjustment for expected occupancy times.

McGuire has chosen to use a generic emergency action level of greater than or equal to 5000 mRad/hr for areas in the plant that are normally accessible as low dose rate areas that have equipment installed, operated, and used for safe operation or safe shutdown of the unit. Radiation levels at or above this range may make it difficult to complete tasks necessary for safe operation of the plant or to establish or maintain cold shutdown without exceeding normal occupational dose limits of 5 Rem per year TEDE. Enclosure 4.10 of RP/0/A/5700/000 provides the monitor number and the location of the area monitor.

# ABNORMAL RAD LEVELS/RADIOLOGICAL EFFLUENT

#### SITE AREA EMERGENCY

4.3.S.1 Boundary Dose Resulting from an Actual or Imminent Release of Radioactivity that Exceeds 100 mRem TEDE or 500 mRem CDE Adult Thyroid for the Actual or Projected Duration of the Release.

# **OPERATING MODE APPLICABILITY: All**

# **EMERGENCY ACTION LEVELS:**

NOTE 1: These EMF readings are calculated based on average annual meteorology, site boundary dose rate, and design unit vent flow rate. Calculations by the dose assessment team use actual meteorology, release duration, and unit vent flow rate. Therefore, these EMF readings should not be used if dose assessment team calculations are available.

NOTE 2: If dose assessment team calculations cannot be completed in 15 minutes, then valid monitor readings should be used for emergency classification.

- **4.3.S.1-1** A valid indication on radiation monitor EMF-36H of  $\geq$  3.4E +03 cpm sustained for >15 minutes.
- **4.3.S.1-2** Dose assessment team calculations indicate dose consequences greater than 100 mRem TEDE or 500 mRem CDE Adult Thyroid at the site boundary.
- 4.3.S.1-3 Analysis of field survey results or field survey samples indicates dose consequences greater than 100 mRem TEDE or 500 mRem CDE Adult Thyroid at the site boundary.

# **BASIS:**

Valid means that a radiation monitor reading has been confirmed to be correct.

The 100 mRem integrated dose in this initiating condition is based on 10 CFR 20 annual average population exposure. This value also provides a desirable gradient (one order of magnitude) between the Alert, Site Area Emergency, and General Emergency classes. These values are 10% of the EPA Protective Action Guide (PAG) values given in EPA-400-R-92-001.

# ABNORMAL RAD LEVELS/RADIOLOGICAL EFFLUENT

#### GENERAL EMERGENCY

4.3.G.1 Boundary Dose Resulting from an Actual or Imminent Release of Radioactivity that Exceeds 1000 mRem TEDE or 5000 mRem CDE Adult Thyroid for the Actual or Projected Duration of the Release.

# OPERATING MODE APPLICABILITY: All

# **EMERGENCY ACTION LEVELS:**

NOTE 1: These EMF readings are calculated based on average annual meteorology, site boundary dose rate, and design unit vent flow rate. Calculations by the dose assessment team use actual meteorology, release duration, and unit vent flow rate. Therefore, these EMF readings should not be used if dose assessment team calculations are available.

NOTE 2: If dose assessment team calculations cannot be completed in 15 minutes, then valid monitor readings should be used for emergency classification.

- **4.3.G.1-1** A valid indication on radiation monitor EMF-36H of  $\geq$  3.4 E +04 cpm sustained for  $\geq$ 15 minutes.
- **4.3.G.1-2** Dose assessment team calculations indicate dose consequences greater than 1000 mRem TEDE or 5000 mRem CDE Adult Thyroid at the site boundary.
- **4.3.G.1-3** Analysis of field survey results or field survey samples indicates dose consequences greater than 1000 mRem TEDE or 5000 mRem CDE Adult Thyroid at the site boundary.

# **BASIS:**

Valid means that a radiation monitor reading has been confirmed to be correct.

The 1000 mRem TEDE and 5000 mRem CDE thyroid integrated doses are based on the EPA PAG values given in EPA-400-R-92-001, which indicates that public protective actions are indicated if doses exceed these values. This is consistent with the emergency class description of a general emergency.

# ENCLOSURE 4.4 LOSS OF SHUTDOWN FUNCTIONS

UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
N/A	4.4.A.1 Failure of Reactor Protection System Instrumentation to Complete or Initiate an Automatic Reactor Trip Once a Reactor Protection System Setpoint Has Been Exceeded and Manual Trip WAS Successful.	4.4.S.1 Failure of Reactor Protection System Instrumentation to Complete or Initiate an Automatic Reactor Trip Once a Reactor Protection System Setpoint Has Been Exceeded and Manual Trip WAS NOT Successful.	4.4.G.1 Failure of the Reactor Protection System to Complete an Automatic Trip and Manual Trip WAS NOT Successful and There is Indication of an Extreme Challenge to the Ability to Cool the Core.
	4.4.A.2 Inability to Maintain Plan in Cold Shutdown.	t 4.4.S.2 Complete Loss of Function Needed to Achieve or Maintain Hot Shutdown.	
		4.4.S.3 Loss of Water Level in the Reactor Vessel That Has or Will Uncover Fuel in the Reactor Vessel.	

# **ENCLOSURE 4.4**

# **LOSS OF SHUTDOWN FUNCTIONS**

# **UNUSUAL EVENT**

Not Applicable

# **ALERT**

4.4.A.1 Failure of Reactor Protection System Instrumentation to Complete or Initiate an Automatic Reactor Trip Once a Reactor Protection System Setpoint Has Been Exceeded and Manual Trip WAS Successful.

**OPERATING MODE APPLICABILITY:** Mode 1 (Power Operation)

Mode 2 (Startup)
Mode 3 (Hot Standby)

# **EMERGENCY ACTION LEVEL:**

- **4.4.A.1-1** The following conditions exist:
  - a. Valid reactor trip signal received or required and automatic reactor trip was not successful.

#### AND

b. Manual reactor trip from the control room is successful and reactor power is less than 5% and decreasing.

#### **BASIS:**

This condition indicates failure of the automatic protection system to trip the reactor. This condition is more than a potential degradation of a safety system in that a front line automatic protection system did not function in response to a plant transient and thus the plant safety has been compromised, and design limits of the fuel may have been exceeded. An Alert is indicated because conditions exist that lead to potential loss of fuel clad or NCS. Reactor protection system setpoint being exceeded (rather than limiting safety system setpoint being exceeded) is specified here because failure of the automatic protection system is the issue. A manual trip is any set of actions by the reactor operator(s) at the reactor control console which causes control rods to be RAPIDLY inserted into the core and brings the reactor subcritical. Operator action to drive rods does NOT constitute a reactor trip, i.e. does not meet the rapid insertion criterion.

Failure of manual trip would escalate the event to a Site Area Emergency.

#### **ALERT**

4.4.A.2 Inability to Maintain Plant in Cold Shutdown.

OPERATING MODE APPLICABILITY: Mode 5 (Cold Shutdown)
Mode 6 (Refueling)

#### **EMERGENCY ACTION LEVEL:**

**4.4.A.2-1** Total loss of Residual Heat Removal (ND) and/or Nuclear Service Water (RN) and/or Component Cooling (KC)

#### **AND**

One of the following:

- Inability to maintain reactor coolant temperature below 200 °F
- Uncontrolled reactor coolant temperature rise to >180°F.

#### **BASIS:**

This EAL addresses loss of functions required for core cooling during cold shutdown and refueling conditions. This IC and associated EALs are based on concerns raised by Generic Letter 88-17, "Loss of Decay Heat Removal." A number of phenomena such as pressurization, vortexing, steam generator U-tube draining, NCS level differences when operating at a mid-loop condition, decay heat removal system design, and level instrumentation problems can lead to conditions where decay heat removal is lost and core uncovery can occur. NRC analyses show that sequences that can cause core uncovery in 15 to 20 minutes and severe core damage within an hour after decay heat removal is lost.

Escalation to the Site Area Emergency is by, "Loss of Water Level in the Reactor Vessel That Has or Will Uncover Fuel in the Reactor Vessel," or by Abnormal Rad Levels/Radiological Effluent ICs.

#### SITE AREA EMERGENCY

4.4.S.1 Failure of Reactor Protection System Instrumentation to Complete or Initiate an Automatic Reactor Trip Once a Reactor Protection System Setpoint Has Been Exceeded and Manual Trip WAS NOT Successful.

**OPERATING MODE APPLICABILITY:** Mode 1 (Power Operation)

#### **EMERGENCY ACTION LEVEL:**

- **4.4.S.1-1** The following conditions exist:
  - a. Valid reactor trip signal received or required and automatic reactor trip was not successful.

#### AND

b. Manual reactor trip from the control room <u>was not</u> successful in reducing reactor power to less than 5% and decreasing.

#### **BASIS:**

Automatic and manual trip are not considered successful if action away from the reactor control console is required to trip the reactor. This EAL is equivalent to the Subcriticality CSF-RED.

Under these conditions, the reactor is producing more heat than the maximum decay heat load for which the safety systems are designed. A Site Area Emergency is indicated because conditions exist that lead to imminent loss or potential loss of both fuel clad and NCS. Although this IC may be viewed as redundant to the Fission Product Barrier Degradation IC, its inclusion is necessary to better assure timely recognition and emergency response. Escalation of this event to a General Emergency would be via Fission Product Barrier Degradation or Emergency Coordinator/EOF Director Judgement ICs.

#### SITE AREA EMERGENCY

4.4.S.2 Complete Loss of Function Needed to Achieve or Maintain Hot Shutdown.

**OPERATING MODE APPLICABILITY:** Mode 1 (Power Operation)

Mode 2 (Startup) Mode 3 (Hot Standby) Mode 4 (Hot Shutdown)

# **EMERGENCY ACTION LEVELS:**

**4.4.S.2-1** Subcriticality CSF-RED.

4.4.S.2-2 Heat Sink CSF-RED.

# **BASIS:**

This EAL addresses complete loss of functions, including ultimate heat sink and reactivity control, required for hot shutdown with the reactor at pressure and temperature. Under these conditions, there is an actual major failure of a system intended for protection of the public. Thus, declaration of a Site Area Emergency is warranted. Escalation to General Emergency would be via Abnormal Rad Levels/Radiological Effluent, Emergency Coordinator/EOF Director Judgement, or Fission Product Barrier Degradation ICs.

#### SITE AREA EMERGENCY

4.4.S.3 Loss of Water Level in the Reactor Vessel That Has or Will Uncover Fuel in the Reactor Vessel.

OPERATING MODE APPLICABILITY: Mode 5 (Cold Shutdown)
Mode 6 (Refueling)

#### **EMERGENCY ACTION LEVELS:**

**4.4.S.3-1** a. Failure of heat sink causes loss of cold shutdown conditions.

#### **AND**

- b. Lower range Reactor Vessel Level Indication System (RVLIS) decreasing after initiation of NC system makeup.
- **4.4.S.3-2** a. Failure of heat sink causes loss of cold shutdown conditions.

#### **AND**

- b. Reactor Coolant (NC) system narrow range level less than 6 inches and decreasing after initiation of NC system makeup.
- 4.4.S.3-3 a. Failure of heat sink causes loss of cold shutdown conditions.

#### **AND**

b. Either train ultrasonic level indication less than 6 inches and decreasing after initiation of NC system makeup.

#### **BASIS:**

Under the conditions specified by this IC, severe core damage may be imminent due to prolonged boiling following loss of decay heat removal.

Thus, declaration of a Site Area Emergency is warranted under the conditions specified by the IC. Escalation to a General Emergency is via radiological effluent IC.

#### **GENERAL EMERGENCY**

4.4.G.1 Failure of the Reactor Protection System to Complete an Automatic Trip and Manual Trip WAS NOT Successful and There is Indication of an Extreme Challenge to the Ability to Cool the Core.

**OPERATING MODE APPLICABILITY: Mode 1 (Power Operation)** 

# **EMERGENCY ACTION LEVEL:**

- **4.4.G.1-1** The following conditions exist:
  - a. Valid reactor trip signal received or required and automatic reactor trip <u>was</u> not successful.

#### AND

b. Manual reactor trip from the control room <u>was not</u> successful in reducing reactor power to less than 5% and decreasing.

#### **AND**

- c. Either of the following conditions exist:
  - Core Cooling CSF-RED
  - Heat Sink CSF-RED.

#### **BASIS**

Automatic and manual trip are not considered successful if action away from the reactor control console is required to trip the reactor.

Under the conditions of this IC and its associated EALs, the efforts to bring the reactor subcritical have been unsuccessful and, as a result, the reactor is producing more heat than the maximum decay heat load for which the safety systems were designed.

The extreme challenge to the ability to cool the core is intended to mean that the core exit temperatures are at or approaching 1200°F or that the reactor vessel water level is below the top of active fuel. This equates to a Core Cooling-RED condition.

Another consideration is the inability to initially remove heat during the early stages of this sequence. If emergency feedwater flow is insufficient to remove the amount of heat required by

Rev. 14-1 January, 2014 design from at least one steam generator, an extreme challenge should be considered to exist. This equates to a Heat Sink-RED condition.

In the event either of these challenges occurs during or following a time that the reactor has not been brought below the power associated with the safety system design, core damage may be imminent. For this reason, the General Emergency declaration is intended to be anticipatory of the fission product barrier matrix declaration to permit maximum offsite intervention time.

# **ENCLOSURE 4.5 LOSS OF POWER**

UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
4.5.U.1 Loss of All Offsite Power to Essential Busses for Greater Than 15 Minutes.	4.5.A.1 Loss of All Offsite Power and Loss of All Onsite AC Power to Essential Busses During Cold Shutdown Or Refueling Mode.	4.5.S.1 Loss of All Offsite Power and Loss of All Onsite AC Power to Essential Busses.	4.5.G.1 Prolonged Loss of All (Offsite and Onsite) AC Power.
4.5.U.2 Unplanned Loss of Required DC Power During Cold Shutdown or Refueling Mode for Greater than 15 Minutes.	4.5.A.2 AC Power to Essential Busses Reduced to a Single Power Source for Greater Than 15 Minutes Such That an Additional Single Failure Could Result in Station Blackout.	4.5.S.2 Loss of All Vital DC Power.	

# ENCLOSURE 4.5 LOSS OF POWER

#### UNUSUAL EVENT

4.5.U.1 Loss of All Offsite Power to Essential Busses for Greater Than 15 Minutes.

**OPERATING MODE APPLICABILITY: Mode 1 (Power Operation)** 

Mode 2 (Startup)
Mode 3 (Hot Standby)
Mode 4 (Hot Shutdown)

# **EMERGENCY ACTION LEVEL:**

# **4.5.U.1-1** The following conditions exist:

a. Loss of offsite power to essential buses ETA and ETB for greater than 15 minutes.

# AND

b. Both emergency diesel generators are supplying power to their respective essential busses.

**OPERATING MODE APPLICABILITY: Mode 5 (Cold Shutdown)** 

Mode 6 (Refueling) No Mode (Defueled)

# **EMERGENCY ACTION LEVEL:**

# **4.5.U.1-2** The following conditions exist:

a. Loss of offsite power to essential buses ETA and ETB for greater than 15 minutes.

# **AND**

\_ .

b. One emergency diesel generator is supplying power to its respective essential bus.

# **BASIS:**

Prolonged loss of AC power reduces required redundancy and potentially degrades the level of safety of the plant by rendering the plant more vulnerable to a complete Loss of AC Power (Station Blackout). When in cold shutdown, refueling, or defueled mode the event can be classified as an Unusual Event, because of the significantly reduced decay heat, lower temperature and pressure, increasing the time to restore one of the essential busses, relative to that specified for the Alert EAL The event will escalate to an Alert in these modes if both essential busses are lost. Fifteen minutes was selected as a threshold to exclude transient or momentary power losses.

#### UNUSUAL EVENT

4.5.U.2 Unplanned Loss of Required DC Power During Cold Shutdown or Refueling Mode for Greater than 15 Minutes.

**OPERATING MODE APPLICABILITY: Mode 5 (Cold Shutdown)** 

Mode 6 (Refueling)

# **EMERGENCY ACTION LEVEL:**

- **4.5.U.2-1** The following conditions exist:
  - a. Unplanned loss of both unit related EVDA and EVDD busses as indicated by bus voltage less than 110 VDC.

**AND** 

b. Failure to restore power to at least one required DC bus within 15 minutes from the time of loss.

# BASIS:

The purpose of this IC and its associated EALs is to recognize a loss of DC power compromising the ability to monitor and control the removal of decay heat during Cold Shutdown or Refueling operations. This EAL is intended to be anticipatory in as much as the operating crew may not have necessary indication and control of equipment needed to respond to the loss.

"Unplanned" is included in this IC and EAL to preclude the declaration of an emergency as a result of planned maintenance activities.

If this loss results in the inability to maintain cold shutdown, the escalation to an Alert is via "Inability to Maintain Plant in Cold Shutdown."

#### **ALERT**

4.5.A.1 Loss of All Offsite Power and Loss of All Onsite AC Power to Essential Busses During Cold Shutdown Or Refueling Mode.

**OPERATING MODE APPLICABILITY: Mode 5 (Cold Shutdown)** 

Mode 6 (Refueling)
No Mode (Defueled)

# **EMERGENCY ACTION LEVEL:**

- **4.5.A.1-1** Loss of all offsite and onsite AC power as indicated by:
  - a. Loss of power on essential buses ETA and ETB.

# **AND**

b. Failure to restore power to at least one essential bus within 15 minutes.

#### **BASIS:**

Loss of all AC power compromises all plant safety systems requiring electric power including Residual Heat Removal (RHR), Emergency Core Cooling Systems (ECCS), Containment Heat Removal, Spent Fuel Heat Removal and the Ultimate Heat Sink. When in cold shutdown, refueling, or defueled mode the event can be classified as an Alert, because of the significantly reduced decay heat, lower temperature and pressure, increasing the time to restore one of the essential busses, relative to that specified for the Site Area Emergency EAL. Escalating to Site Area Emergency, if appropriate, is by Abnormal Rad Levels/Radiological Effluent, or Emergency Coordinator/EOF Director Judgement ICs. Fifteen minutes was selected as a threshold to exclude transient or momentary power losses.

#### **ALERT**

4.5.A.2 AC Power to Essential Busses Reduced to a Single Power Source for Greater Than 15 Minutes Such That an Additional Single Failure Could Result in Station Blackout.

**OPERATING MODE APPLICABILITY:** Mode 1 (Power Operation)

Mode 2 (Startup)

Mode 3 (Hot Standby)

Mode 4 (Hot Shutdown)

# **EMERGENCY ACTION LEVEL:**

**4.5.A.2-1** The following condition exists:

AC power capability has been degraded to one essential bus powered from a single power source for > 15 min. due to the loss of all but one of:

**SATA** 

**SATB** 

**ATC** 

ATD

D/G A

D/G B.

#### **BASIS:**

This IC and the associated EAL is intended to provide an escalation from IC, "Loss of All Offsite Power To Essential Busses for Greater Than 15 Minutes." The condition indicated by this IC is the degradation of the offsite and onsite power systems such that an additional single failure could result in a station blackout. This condition could occur due to a loss of offsite power with a concurrent failure of one emergency generator to supply power to its essential busses. Another related condition could be the loss of all offsite power and loss of onsite emergency diesels with only one train of essential busses being back fed from the unit main generator, or the loss of onsite emergency diesels with only one train of essential busses being back fed from offsite power. The subsequent loss of this single power source would escalate the event to a Site Area Emergency in accordance with IC, "Loss of All Offsite and Loss of All Onsite AC Power to Essential Busses."

#### SITE AREA EMERGENCY

4.5.S.1 Loss of All Offsite Power and Loss of All Onsite AC Power to Essential Busses.

**OPERATING MODE APPLICABILITY:** Mode 1 (Power Operation)

Mode 2 (Startup)
Mode 3 (Hot Standby)
Mode 4 (Hot Shutdown)

#### **EMERGENCY ACTION LEVEL:**

- **4.5.S.1-1** Loss of all offsite and onsite AC power as indicated by:
  - a. Loss of power on essential buses ETA and ETB.

# AND

b. Failure to restore power to at least one essential bus within 15 minutes.

#### **BASIS:**

Loss of all AC power compromises all plant safety systems requiring electric power including RHR, ECCS, Containment Heat Removal and the Ultimate Heat Sink. Prolonged loss of all AC power will cause core uncovering and loss of containment integrity; thus, this event can escalate to a General Emergency.

Escalation to General Emergency is via Fission Product Barrier Degradation or IC, "Prolonged Loss of All Offsite Power and Prolonged Loss of All Onsite AC Power."

#### SITE AREA EMERGENCY

4.5.S.2 Loss of All Vital DC Power.

**OPERATING MODE APPLICABILITY: Mode 1 (Power Operation)** 

Mode 2 (Startup)
Mode 3 (Hot Standby)
Mode 4 (Hot Shutdown)

# **EMERGENCY ACTION LEVEL:**

# **4.5.S.2-1** The following conditions exist:

a. Loss of both unit related EVDA and EVDD busses as indicated by bus voltage less than 110 VDC.

# **AND**

b. Failure to restore power to at least one required DC bus within 15 minutes from the time of loss.

#### **BASIS:**

Loss of all DC power compromises ability to monitor and control plant safety functions. Prolonged loss of all DC power will cause core uncovering and loss of containment integrity when there is significant decay heat and sensible heat in the reactor system. Escalation to a General Emergency would occur by Abnormal Rad Levels/Radiological Effluent, Fission Product Barrier Degradation, or Emergency Coordinator/EOF Director Judgement ICs. Fifteen minutes was selected as a threshold to exclude transient or momentary power losses.

#### **LOSS OF POWER**

#### GENERAL EMERGENCY

4.5.G.1 Prolonged Loss of All (Offsite and Onsite) AC Power.

**OPERATING MODE APPLICABILITY: Mode 1 (Power Operation)** 

Mode 2 (Startup) Mode 3 (Hot Standby) Mode 4 (Hot Shutdown)

#### **EMERGENCY ACTION LEVEL:**

- **4.5.G.1-1** Prolonged loss of all offsite and onsite AC power as indicated by:
  - a. Loss of power on essential buses ETA and ETB for greater than 15 minutes.

#### AND

b. Standby Shutdown Facility (SSF) fails to supply NC pump seal injection **OR** CA supply to steam generators.

#### AND

- c. At least one of the following conditions exist:
  - Restoration of at least one essential bus within 4 hours is **NOT** likely.
  - Indication of continuing degradation of core cooling based on Fission Product Barrier monitoring.

#### **BASIS:**

Loss of all AC power compromises all plant safety systems requiring electric power including RHR, ECCS, Containment Heat Removal and the Ultimate Heat Sink. Prolonged loss of all those functions necessary to maintain hot shutdown will lead to loss of fuel clad, NCS, and containment.

The SSF is capable of providing the necessary functions (reactor coolant pump seal injection and auxiliary feedwater supply to the steam generators) to maintain a hot shutdown condition for up to 72 hours. No fission product barrier degradation would be expected if the SSF is functioning as intended.

Analysis in support of the station blackout coping study indicates that the plant can cope with a station blackout for 4 hours without core damage.

The likelihood of restoring at least one essential bus should be based on a realistic appraisal of the situation since a delay in an upgrade decision based on only a chance of mitigating the event could result in a loss of valuable time in preparing and implementing public protective actions.

In addition, under these conditions, fission product barrier monitoring capability may be degraded. Although it may be difficult to predict when power can be restored, it is necessary to give the Emergency Coordinator/EOF Director a reasonable idea of how quickly (s)he may need to declare a General Emergency based on two major considerations:

- 1. Are there any present indications that core cooling is already degraded to the point that Loss or Potential Loss of Fission Product Barriers is IMMINENT?
- 2. If there are no present indications of such core cooling degradation, how likely is it that power can be restored in time to assure that a loss of two barriers with a potential loss of the third barrier can be prevented?

Thus, indication of continuing core cooling degradation must be based on Fission Product Barrier monitoring with particular emphasis on Emergency Coordinator/EOF Director judgement as it relates to IMMINENT Loss or Potential Loss of fission product barriers and degraded ability to monitor fission product barriers.

# ENCLOSURE 4.6 FIRE/EXPLOSION AND SECURITY EVENTS

<b>UNUSUAL EVENT</b>	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
4.6.U.1 Fire Within Protected Area Boundary NOT Extinguished Within 15 Minutes of Detection OR Explosion Within the Protected Area Boundary.	4.6.A.1 Fire or Explosion Affecting the Operability of Plant Safety Systems Required to Establish or Maintain Safe Shutdown.	4.6.S.1 HOSTILE ACTION within the PROTECTED AREA	4.6.G.1 HOSTILE ACTION  Resulting in Loss of Physical Control o fthe Facility.
4.6.U.2 Confirmed SECURITY CONDITION or threat Which Indicates a Potential Degradation in the Level of Safety of the Plant.	4.6.A.2 Fire or Explosion Affecting the Operability of Plant Safety Systems Required to Establish or Maintain Safe Shutdown.		
	4.6.A.3 HOSTILE ACTION within the OWNER  CONTROLLED AREA or Airborne Attack Threat		

#### **ENCLOSURE 4.6**

#### FIRE/EXPLOSION AND SECURITY EVENTS

#### UNUSUAL EVENT

4.6.U.1 Fire Within Protected Area Boundary Not Extinguished Within 15 Minutes of Detection OR Explosion Within the Protected Area Boundary.

OPERATING MODE APPLICABILITY: All

#### **EMERGENCY ACTION LEVEL:**

- **4.6.U.1-1** Fire in any of the following areas <u>not</u> extinguished within 15 minutes of control room notification or verification of a control room fire alarm.
  - Reactor Building
  - Auxiliary Building
  - Diesel Generator Rooms
  - Control Room
  - Standby Shutdown Facility (SSF)
  - Central Alarm Station (CAS)
  - Secondary Alarm Station (SAS)
  - Doghouses
  - Refueling Water Storage Tank (FWST)
  - Turbine Building
  - Service Building
  - Interim Radwaste Building
  - Equipment Staging Building
  - ISFSI.
- **4.6.U.1-2** Report by plant personnel of an unanticipated explosion within protected area boundary resulting in visible damage to permanent structures or equipment or to a loaded cask in the ISFSI.

#### **BASIS:**

EAL 1: The purpose of this EAL is to address the magnitude and extent of fires that may be potentially significant precursors to damage to safety systems. Fire is combustion characterized by heat and light. Sources of smoke such as slipping drive belts or overheated electrical equipment do not constitute fires. Observation of flames is preferred but is NOT required if large quantities of smoke and heat are observed. This excludes such items as fires within administration buildings outside the protected area. Waste-basket fires, and other small fires of no safety consequence should easily be extinguished within 15 minutes of detection. This IC applies to buildings and areas contiguous to plant vital areas or other significant buildings or

areas. Verification of the alarm in this context means those actions taken in the control room to determine that the control room alarm is not spurious.

EAL 2: Only those explosions of sufficient force to damage permanent structures or equipment within the protected area or to a loaded cask in the ISFSI area should be considered. As used here, an explosion is a rapid, violent, unconfined combustion, or a catastrophic failure of pressurized equipment, that potentially imparts significant energy to near-by structures and materials. No attempt is made in this EAL to assess the actual magnitude of the damage. The occurrence of the explosion with reports of evidence of damage (e.g., deformation, scorching) is sufficient for declaration. The Emergency Coordinator/EOF Director also needs to consider any security aspects of the explosion, if applicable.

Escalation to a higher emergency class is by, "Fire or Explosion Affecting the Operability of Plant Safety Systems Required to Establish or Maintain Safe Shutdown".

INDEPENDENT SPENT FUEL STORAGE INSTALLATION (ISFSI) These ICs are categorized on the basis of the occurrence of an event of sufficient magnitude that a loaded cask CONFINEMENT BOUNDARY is damaged or violated. This includes classification based on a loaded fuel storage cask CONFINEMENT BOUNDARY loss leading to the degradation of the fuel during storage or posing an operational safety problem with respect to its removal from storage.

ISFSI Technical Specifications allow time to complete required actions if cask seal integrity is not maintained; therefore, classification should not be made based on a loss of seal integrity by itself. However, loss of seal integrity coincident with an accident condition affecting a cask would justify classification.

For these EALs the results of the ISFSI Safety Analysis Report (SAR) per NUREG 1536 was used to develop the site-specific list of accident conditions.

REFERENCE: NUMARC/NESP-007, REV. 2, 01/92, HU2, NEI 99-01 (Methodology for Development of Emergency Action Levels) Draft Final Rev 4, McGuire ISFSI Safety Analysis Report.

#### FIRE/EXPLOSION AND SECURITY EVENTS

#### UNUSUAL EVENT

4.6.U.2 Confirmed SECURITY CONDITION or Threat Which Indicates a Potential Degradation in the Level of Safety of the Plant.

OPERATING MODE APPLICABILITY: All

#### **EMERGENCY ACTION LEVELS:**

- **4.6.U.2-1** A **SECURITY CONDITION** that does **NOT** involve a **HOSTILE ACTION** as reported by the MNS Security shift supervision.
- **4.6.U.2-2** A credible site-specific security threat notification.
- **4.6.U.2-3** A validated notification from NRC providing information of an aircraft threat.

#### **BASIS:**

Note: Timely and accurate communication between security shift supervision and the Control Room is crucial for the implementation of effective Security EALs.

Security events which do not represent a potential degradation in the level of safety of the plant are reported under 10 CFR 73.71 or in some cases under 10 CFR 50.72. Security events assessed as **HOSTILE ACTIONS** are classifiable under 4.6.A.3, 4.6.S.1 and 4.6.G.1.

A higher initial classification could be made based upon the nature and timing of the security threat and potential consequences. The licensee shall consider upgrading the emergency response status and emergency classification level in accordance with the site's Safeguards Contingency Plan and Emergency Plan.

#### **EAL** #1

Reference is made to site specific security shift supervision because these individuals are the designated personnel on-site qualified and trained to confirm that a security event is occurring or has occurred. Training on security event classification confirmation is closely controlled due to the strict secrecy controls placed on the plant Safeguards Contingency Plan.

The threshold is based on site specific security plans. Site specific Safeguards Contingency Plans are based on guidance provided by NEI 03-12.

#### EAL #2

This threshold is included to ensure that appropriate notifications for the security threat are made in a timely manner. This includes information of a credible threat. Only the plant to which the specific threat is made need declare the Notification of an Unusual Event.

The determination of "credible" is made through use of information found in the site specific Safeguards Contingency Plan.

#### **EAL #3**

The intent of this EAL is to ensure that notifications for the aircraft threat are made in a timely manner and thatOROs and plant personnel are at a state of heightened awareness regarding the credible threat. It is not the intent of this EAL to replace existing non-hostile related EALs involving aircraft.

This EAL is met when a plant receives information regarding an aircraft threat from NRC. Validation is performed by calling the NRC or by other approved methods of authentication. Only the plant to which the specific threat is made need declare the Unusual Event.

The NRC Headquarters Operations Officer (HOO) will communicate to the licensee if the threat involves an airliner (airliner is meant to be a large aircraft with the potential for causing significant damage to the plant). The status and size of the plane may be provided by NORAD through the NRC.

Escalation to Alert emergency classification level would be via 4.6.A.3 would be appropriate if the threat involves an airliner within 30 minutes of the plant.

REFERENCE: NEI 99-01 rev 5, (HU4) Methodology for Developement of Emergency Action Levels. This change is to support NEI 03-12 implementation. {PIP G-09-0360}

#### FIRE/EXPLOSION AND SECURITY EVENTS

#### **ALERT**

4.6.A.1 Fire or Explosion Affecting the Operability of Plant Safety Systems Required to Establish or Maintain Safe Shutdown.

**OPERATING MODE APPLICABILITY: Mode 1 (Power Operation)** 

Mode 2 (Startup)
Mode 3 (Hot Standby)
Mode 4 (Hot Shutdown)
Mode 5 (Cold Shutdown)
Mode 6 (Refueling)

#### **EMERGENCY ACTION LEVEL:**

**4.6.A.1-1** The following conditions exist: (includes non-security events)

- a. Fire or explosion in any of the following areas:
  - Reactor Building
  - Auxiliary Building
  - Diesel Generator Rooms
  - Control Room
  - Standby Shutdown Facility
  - CAS
  - SAS
  - FWST
  - Doghouses (Applies in Mode 1, 2, 3, 4 only).

#### **AND**

b. One of the following:

Note: Only one train of a system needs to be affected or damaged in order to satisfy this condition.

- Affected safety system parameter indications show degraded performance
- Plant personnel report visible damage to permanent structures or equipment within the specified area.

#### **BASIS:**

With regard to explosions, only those explosions of sufficient force to damage permanent structures or equipment required for safe operation within the identified plant area should be considered. As used here, an explosion is a rapid, violent, unconfined combustion, or a catastrophic failure of pressurized equipment, that potentially imparts significant energy to nearby structures and materials. Fire is combustion characterized by heat and light. Sources of smoke such as slipping drive belts or overheated electrical equipment do not constitute fires. Observation of flames is preferred but is NOT required if large quantities of smoke and heat are observed. The inclusion of a "report of visible damage" should not be interpreted as mandating a lengthy damage assessment prior to classification.

The key to classifying fires/explosions as an Alert is the damage as a result of the incident. The fact that safety-related equipment required for safe shutdown of the unit has been affected or damaged as a result of the fire/explosion is the driving force for declaring the Alert. It is important to note that this EAL addresses a fire/explosion and not just the degradation of a safety system. The reference to damage of the systems is used to identify the magnitude of the fire/explosion and to discriminate against minor fires/explosions.

Escalation to a higher emergency class, if appropriate, will be based on System Malfunction, Fission Product Barrier Degradation, Abnormal Rad Levels/Radiological Effluent, or Emergency Coordinator/EOF Director Judgement ICs.

#### FIRE/EXPLOSION AND SECURITY EVENTS

#### **ALERT**

4.6.A.2 Fire or Explosion Affecting the Operability of Plant Safety Systems Required to Establish or Maintain Safe Shutdown.

**OPERATING MODE APPLICABILITY:** 

No Mode (Defueled)

#### **EMERGENCY ACTION LEVEL:**

**4.6.A.2-1** The following conditions exist: (includes non-security events)

- a. Fire or explosion in any of the following areas:
  - Spent Fuel Pool
  - Auxiliary Building.

#### AND

b. One of the following:

Note: Only one train of a system needs to be affected or damaged in order to satisfy this condition.

- Spent Fuel Pool level and/or temperature show degraded performance.
- Plant personnel report visible damage to permanent structures or equipment supporting Spent Fuel Pool cooling.

#### **BASIS**:

In a Defueled condition, the plant safety systems of interest are those that support Spent Fuel Pool inventory and cooling.

With regard to explosions, only those explosions of sufficient force to damage permanent structures or equipment required for safe operation within the identified plant area should be considered. As used here, an explosion is a rapid, violent, unconfined combustion, or a catastrophic failure of pressurized equipment, that potentially imparts significant energy to near-by structures and materials. Fire is combustion characterized by heat and light. Sources of smoke such as slipping drive belts or overheated electrical equipment do not constitute fires. Observation of flames is preferred but is NOT required if large quantities of smoke and heat are

observed. The inclusion of a "report of visible damage" should not be interpreted as mandating a lengthy damage assessment prior to classification.

The key to classifying fires/explosions as an Alert is the damage as a result of the incident. The fact that safety-related equipment required for safe shutdown of the unit has been affected or damaged as a result of the fire/explosion is the driving force for declaring the Alert. It is important to note that this EAL addresses a fire/explosion and not just the degradation of a safety system. The reference to damage of the systems is used to identify the magnitude of the fire/explosion and to discriminate against minor fires/explosions.

Escalation to a higher emergency class, if appropriate, will be based on System Malfunction, Fission Product Barrier Degradation, Abnormal Rad Levels/Radiological Effluent, or Emergency Coordinator/EOF Director Judgement ICs.

#### FIRE/EXPLOSION AND SECURITY EVENTS

#### **ALERT**

4.6.A.3 HOSTILE ACTION within OWNER CONTROLLED AREA or airborne attack threat.

OPERATING MODE APPLICABILITY: All

#### **EMERGENCY ACTION LEVEL:**

- **4.6.A.3-1** A **HOSTILE ACTION** is occurring or has occurred within the **OWNER CONTROLLED AREA** as reported by the MNS Security Shift Supervision.
- **4.6.A.3-2** A validated notification from NRC of an airliner attack threat within 30 minutes of the site.

#### **BASIS:**

Note: Timely and accurate communication between Security Shift Supervision and the Control Room is crucial for the implementation of effective Security EALs.

These EALs address the contingency for a very rapid progression of events, such as that experienced on September 11, 2001. They are not premised solely on the potential for radiological release. Rather the issue includes the need for rapid assistance due to the possibility for significant and indeterminate damage from additional air, land or water attack elements.

The fact that the site is under serious attack or is an identified attack target with minimal time available for further preparation or additional assistance to arrive requires a heightened state of readiness and implementation of protective measures that can be effective (such as on-site evacuation, dispersal or sheltering).

#### EAL #1

This EAL addresses the potential for a very rapid progression of events due to a **HOSTILE ACTION**. It is not intended to address incidents that accidental events or acts of civil disobedience, such as small aircraft impact, hunters, or physical disputes between employees with the OCA. Those events are adequately addressed by other EALs.

Note that this EAL is applicable for any **HOSTILE ACTION** occurring, or that has occurred, in the **OWNER CONTROLLED AREA**. This includes ISFSI's that may be outside the **PROTECTED AREA** but still within the **OWNER CONTROLLED AREA**.

[Although nuclear plant security officers are well trained and prepared to protect against **HOSTILE ACTION**, it is appropriate for OROs to be notified and encouraged to begin activation (if they do not normally) to be better prepared should it be necessary to consider further actions.]

[If not previously notified by the NRC that the airborne **HOSTILE ACTION** was intentional, then it would be expected, although not certain, that notification by an appropriate Federal agency would follow. In this case, appropriate federal agency is intended to be NORAD, FBI FAA or NRC. However, the declaration should not be unduly delayed awaiting Federal notification.]

#### EAL #2

This EAL addreses the immediacy of an expected threat arrival or impact on the site within a relatively short time.

The intent of this EAL list to ensure that notifications for the airliner attack threat are made in a timely manner and that OROs and plant personnel are at a state of heightened awareness regarding the credible threat. Airliner is meant to be a large aircraft with the potential for causing significant damage to the plant.

This EAL is met when a plant receives information regarding a airliner attack threat from NRC and the airliner is within 30 minutes of the plant. Only the plant to which the specific threat is made need declare the Alert.

The NRC Headquarters Operations Officer (HOO) will communicate to the licensee if the threat involves an airliner (airliner is meant to be a large aircraft with the potential for causing significant damage to the plant). The status and size of the plane may be provided by NORAD through the NRC.

REFERENCE: EI 99-01 rev 5 (HA4) Methodology for Development of Emergency Action Levels. This change is to support NEI 03-12 implementation. {PIP G-09-0360}

#### FIRE/EXPLOSION AND SECURITY EVENTS

#### SITE AREA EMERGENCY

4.6.S.1 HOSTILE ACTION within the PROTECTED AREA.

OPERATING MODE APPLICABILITY: All

#### **EMERGENCY ACTION LEVELS:**

4.6.S.1-1 A HOSTILE ACTION is occurring or has occurred within the PROTECTED AREA as reported by the MNS Security Shift Supervision.

#### **BASIS:**

This condition represents an escalated threat to plant safety above that contained in the Alert in that a HOSTILE FORCE has progressed from the OWNER CONTROLLED AREA to the PROTECTED AREA.

This EAL addresses the cotingency for a very rapid progression of events, such as that experienced on September 11, 2001. It is not premised solely on the potential for a radiological release. Rather the issue includes the need for rapid assistance due to the possibility for significant and inderterminate damage from additional air, land or water attack elements.

The fact that the site is under serious attack with minimal time available for further preparation or additional assistance to arrive requires ORO readiness and preparation for the implementation of protective measures.

This EAL addresses the potential for a very rapid progression of events due to a **HOSTILE ACTION**. It is not intended to address incidents that are accidental events or acts of civil disobedience, such as small aircraft impact, hunters, or physical disputes between employees within the **PROTECTED AREA**. Those events are adequately addressed by other EALs.

[Although nuclear plant security officers are well trained and prepared to protect against **HOSTILE ACTION**, it is appropriate for OROs to be notified and encouraged to begin preparations for public protective actions (if they do not normally) to be better prepared should it be necessary to consider further actions.]

[If not previously notified by NRC that the airborne **HOSTILE ACTION** was intentional, then it would be expected, although not certain, that notification by an appropriate Federal agency would follow. In this case, appropriate federal agency is intended to be NORAD, FBI, FAA or NRC. However, the declaration should not be unduly delayed awaiting Federal notification.]

Escalation of this emergency classification level, if appropriate, would be based on actual plant status after impact or progression of attack.

REFERENCE: EI 99-01 rev 5 (HS4) Methodology for Development of Emergency Action Levels. This change is to support NEI 03-12 implementation. {PIP G-09-0360}

#### FIRE/EXPLOSION AND SECURITY EVENTS

#### **GENERAL EMERGENCY**

4.6.G.1 HOSTILE ACTION resulting in loss of physical control of the facility.

OPERATING MODE APPLICABILITY: All

#### **EMERGENCY ACTION LEVELS:**

- **4.6.G.1-1** A **HOSTILE ACTION** has occurred such that plant personnel are uable to operate equipment required to maintain safety functions.
- **4.6.G.1-2** A **HOSTILE ACTION** has caused failure of Spent Fuel Cooling Systems and **IMMINENT** fuel damage is likely for a freshly off-loaded reactor core in pool.

#### **BASIS:**

#### **EAL** #1

This EAL encompasses conditions under which a **HOSTILE ACTION** has resulted in a loss of physical control of **VITAL AREAS** (containing vital equipment or controls of vital equipment) required to maintain safety functions and control of that equipment cannot be transferred to and operated from another location.

[Typically, these safety functions are reactivity control (ability to shut down the reactor and keep it shutdown) reactor water level (ability to cool the core), and decay heat removal (ability to maintain a heat sink) for a BWR. The equivalent functions for a PWR are reactivity control, RCS inventory, and secondary heat removal.]

[Loss of physical control of the control room or remote shutdown capability alone may not prevent the ability to maintain safety functions per se. Design of the remote shutdown capability and the location of the transfer switches should be taken into account. Primary emphasis should be placed on those components and instruments that supply protection for and information about safety functions.]

If control of the plant equipment necessary to maintain safety functions can be transferred to another location, then the threshold is not met.

#### EAL #2

This EAL addresses failure of spent fuel cooling systems as a result of **HOSTILE ACTION** if **IMMINENT** fuel damage is likely, such as when a freshly off-loaded reactor core is in the spent fuel pool.

A freshly off-loaded reactor core is: The complete removal and relocation of all fuel assemblies from the reactor core and placed in the spent fuel pool. (Typical of a "No Mode" operation during a refuel outage that allows safety system maintenance to occur and results in maximum decay heat load in the spent fuel pool system).

REFERENCE: NEI 99-01 rev 5 (HG1) Methodology for Development of Emergency Action Levels. This change is to support NEI 03-12 implementation. {PIP G-09-0360}

Rev. 14-1 January, 2014

UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
4.7.U.1 Natural and Destructive Phenomena Affecting the Protected Area.	4.7.A.1 Natural and Destructive Phenomena Affecting the Plant Vital Area.	4.7.S.1 Control Room Evacuation Has Been Initiated and Plant Control Cannot Be Established.	4.7.G.1 Other Conditions Existing Which in the Judgement of the Emergency Coordinator/EOF Director Warrant Declaration of General Emergency.
4.7.U.2 Release of Toxic or Flammable Gases Deemed Detrimental to Safe Operation of the Plant.	4.7.A.2 Release of Toxic or Flammable Gases Within a Facility Structure Which Jeopardizes Operation of Systems Required to Maintain Safe Operations or to Establish or Maintain Cold Shutdown.	4.7.S.2 Other Conditions Existing Which in the Judgement of The Emergency Coordinator/EOF Director Warrant Declaration of Site Area Emergency.	
4.7.U.3 Other Conditions Existing Which in the Judgement of the Emergency Coordinator/EOF Director Warrant Declaration of an Unusual Event.	4.7.A.3 Control Room Evacuation Has Been Initiated.		
5.15555. 2.5515.	4.7.A.4 Other Conditions Existing Which in the Judgement of the Emergency Coordinator/EOF Director Warrant Declaration of an Alert.		

#### UNUSUAL EVENT

4.7.U.1 Natural and Destructive Phenomena Affecting the Protected Area.

#### OPERATING MODE APPLICABILITY: All

#### **EMERGENCY ACTION LEVELS:**

- **4.7.U.1-1** Tremor felt and valid alarm on the Syscom Seismic Monitoring System (OAC M1D2422).
- **4.7.U.1-2** Report by plant personnel of tornado striking within protected area boundary including the ISFSI.
- **4.7.U.1-3** Vehicle crash into plant structures or systems within protected area boundary including the ISFSI.
- **4.7.U.1-4** Report of turbine failure resulting in casing penetration or damage to turbine or generator seals.
- **4.7.U.1-5** ISFSI cask tipped over or dropped greater than 12 inches.
- **4.7.U.1-6** Uncontrolled flooding in the ISFSI area.
- **4.7.U.1-7** Tornado generated missile(s) impacting the ISFSI.

#### **BASIS:**

The protected area boundary is typically that part within the security isolation zone and is defined in the site security plan.

EAL 1: Damage may be caused to some portions of the site, but should not affect ability of safety functions to operate. Method of detection can be based on instrumentation, validated by a reliable source, or operator assessment. As defined in the EPRI-sponsored "Guidelines for Nuclear Plant Response to an Earthquake", dated October 1989, a "felt earthquake" is:

An earthquake of sufficient intensity such that: (a) the vibratory ground motion is felt at the nuclear plant site and recognized as an earthquake based on a consensus of control room operators, and (b) valid alarm on seismic instrumentation occurs.

EAL 2: A tornado striking (touching down) within the protected boundary may have potentially damaged plant structures containing functions or systems required for safe shutdown of the plant. If such damage is confirmed visually or by other in-plant indications, the event may be escalated to Alert. See ISFSI information covered under EAL 5, 6 & 7.

EAL 3: Addresses such items as a car, truck, plane, helicopter, or train crash that may potentially damage plant structures containing functions and systems required for safe shutdown of the plant. If the crash is confirmed to affect a plant vital area, the event may be escalated to Alert. See ISFSI information covered under EAL 5, 6 & 7.

EAL 4: Addresses main turbine rotating component failures of sufficient magnitude to cause observable damage to the turbine casing or to the seals of the turbine generator. Of major concern is the potential for leakage of combustible fluids (lubricating oils) and gases (hydrogen cooling) to the plant environs. Actual fires and flammable gas build up are appropriately classified via other EALs. This EAL is consistent with the definition of an Unusual Event while maintaining the anticipatory nature desired and recognizing the risk to non-safety related equipment. Escalation of the emergency classification is based on potential damage done by the missiles generated by the failure or by the radiological releases in conjunction with a steam generator tube rupture. These latter events would be classified by the Radiological ICs or Fission Product Barrier ICs.

EALs 5, 6 & 7: These ISFSI related ICs are categorized on the basis of the occurrence of an event of sufficient magnitude that a loaded cask CONFINEMENT BOUNDARY is damaged or violated. This includes classification based on a loaded fuel storage cask CONFINEMENT BOUNDARY loss leading to the degradation of the fuel during storage or posing an operational safety problem with respect to its removal from storage.

ISFSI Technical Specifications allow time to complete required actions if cask seal integrity is not maintained; therefore, classification should not be made based on a loss of seal integrity by itself. However, loss of seal integrity coincident with an accident condition affecting a cask would justify classification.

For these EALs the results of the ISFSI Safety Analysis Report (SAR) per NUREG 1536 was used to develop the site-specific list of accident conditions.

REFERENCE: NUMARC/NESP-007, REV. 2, 01/92, HU1, NEI 99-01 (Methodology for Development of Emergency Action Levels) Draft Final Rev 4, McGuire ISFSI Safety Analysis Report.

NOTE: NUMARC EAL #5 moved to Fire/Security Recognition Category

#### UNUSUAL EVENT

4.7.U.2 Release of Toxic or Flammable Gases Deemed Detrimental to Safe Operation of the Plant.

OPERATING MODE APPLICABILITY: All

#### **EMERGENCY ACTION LEVELS:**

- **4.7.U.2-1** Report or detection of toxic or flammable gases that could enter within the site area boundary in amounts that can affect safe operation of the plant.
- **4.7.U.2-2** Report by Local, County or State Officials for potential evacuation of site personnel based on offsite event.

#### **BASIS:**

This IC is based on releases in concentrations within the site boundary that will affect the health of plant personnel or the safe operation of the plant with the plant being within the evacuation area of an offsite event (i.e., tanker truck accident releasing toxic gases, etc.).

Gases within the owner controlled area that are below life threatening or flammable concentrations do not meet this EAL.

#### **UNUSUAL EVENT**

4.7.U.3 Other Conditions Existing Which in the Judgement of the Emergency Coordinator/EOF Director Warrant Declaration of an Unusual Event.

OPERATING MODE APPLICABILITY: All

#### **EMERGENCY ACTION LEVEL:**

**4.7.U.3-1** Other conditions exist which in the judgement of the Emergency Coordinator/EOF Director indicate a potential degradation of the level of safety of the plant.

#### **BASIS:**

This EAL is intended to address unanticipated conditions not addressed explicitly elsewhere but that warrant declaration of an emergency because conditions exist which are believed by the Emergency Coordinator/EOF Director to fall under the Unusual Event emergency class.

#### **BASIS:**

- EAL 1: Based on the FSAR design basis. Seismic events of this magnitude (> OBE) can cause damage to safety functions.
- EAL 2: Based on the available instrumentation and the FSAR design basis. Wind loads of this magnitude can cause damage to safety functions.
- EAL 3: This EAL is intended to address the threat to safety related structures or equipment from uncontrollable and possibly catastrophic events. This list of areas includes areas containing safety-related equipment, their controls, and their power supplies. This EAL is, therefore, consistent with the definition of an ALERT in that if events have damaged areas containing safety-related equipment the potential exists for substantial degradation of the level of safety of the plant.

#### **ALERT**

4.7.A.2 Release of Toxic or Flammable Gases Within a Facility Structure Which Jeopardizes Operation of Systems Required to Maintain Safe Operations or to Establish or Maintain Cold Shutdown.

**OPERATING MODE APPLICABILITY: All** 

#### **EMERGENCY ACTION LEVELS:**

Structures for both EALs:

- Reactor Building
- Auxiliary Building
- Diesel Generator Rooms
- Control Room
- Standby Shutdown Facility
- Doghouses
- CAS
- SAS.
- **4.7.A.2-1** Report or detection of toxic gases within a Facility Structure in concentrations that will be life threatening to plant personnel.
- **4.7.A.2-2** Report or detection of flammable gases within a Facility Structure in concentrations that will affect the safe operation of the plant.

#### **BASIS:**

This IC is based on gases that have entered a plant structure affecting the safe operation of the plant. Safe operations are affected when the area can not be accessed by plant personnel to ensure continued operability or availability of safety systems/components. This IC applies to buildings and areas contiguous to plant Vital Areas or other significant buildings or areas. The intent of this IC is not to include buildings (i.e., warehouses) or other areas that are not contiguous or immediately adjacent to plant Vital Areas. It is appropriate that increased monitoring be done to ascertain whether consequential damage has occurred. Escalation to a higher emergency class, if appropriate, will be based on System Malfunction, Fission Product Barrier Degradation, Abnormal Rad Levels/Radioactive Effluent, or Emergency Coordinator/EOF Director Judgement ICs.

#### **ALERT**

4.7.A.3 Control Room Evacuation Has Been Initiated.

**OPERATING MODE APPLICABILITY: All** 

#### **EMERGENCY ACTION LEVEL:**

**4.7.A.3-1** Control Room evacuation has been initiated per AP/1(2)/A/5500/017 or AP/1(2)/A/5500/024. {2}

#### **BASIS:**

With the control room evacuated, additional support, monitoring and direction through the Technical Support Center and/or Emergency Operations Facility is necessary. Inability to establish plant control from outside the control room, as evidenced by the inability to maintain NCS or SG inventories, will escalate this event to a Site Area Emergency.

#### **ALERT**

4.7.A.4 Other Conditions Existing Which in the Judgement of the Emergency Coordinator/EOF Director Warrant Declaration of an Alert.

**OPERATING MODE APPLICABILITY: All** 

#### **EMERGENCY ACTION LEVEL:**

**4.7.A.4-1** Other conditions exist which in the Judgement of the Emergency Coordinator/EOF Director indicate that plant safety systems may be degraded and that increased monitoring of plant functions is warranted.

#### **BASIS:**

This EAL is intended to address unanticipated conditions not addressed explicitly elsewhere but that warrant declaration of an emergency because conditions exist which are believed by the Emergency Coordinator/EOF Director to fall under the Alert emergency class.

#### SITE AREA EMERGENCY

4.7.S.1 Control Room Evacuation Has Been Initiated and Plant Control Cannot Be Established.

**OPERATING MODE APPLICABILITY: All** 

#### **EMERGENCY ACTION LEVEL:**

- **4.7.S.1-1** The following conditions exist:
  - a. Control room evacuation has been initiated per AP/1(2)/A/5500/017 or AP/1(2)/A/5500/024. {2}

#### AND

b. Control of the plant cannot be established from the Auxiliary Shutdown Panel or the Standby Shutdown Facility within 15 minutes.

#### **BASIS:**

The timely transfer of control to alternate control areas has not been accomplished. This failure to transfer control would be evidenced by deteriorating reactor coolant system or steam generator parameters. For purposes of classification, the 15 minutes begins at the time that the determination to staff the alternate location is made. For most conditions, Reactor Coolant Pump seal LOCAs or steam generator dryout would be indications of failure to accomplish the transfer in the necessary time.

Escalation of this event, if appropriate, would be by Fission Product Barrier Degradation, Abnormal Rad Levels/Radiological Effluent, or Emergency Coordinator/EOF Director Judgement ICs.

#### SITE AREA EMERGENCY

4.7.S.2 Other Conditions Existing Which in the Judgement of the Emergency Coordinator/EOF Director Warrant Declaration of Site Area Emergency.

OPERATING MODE APPLICABILITY: All

#### **EMERGENCY ACTION LEVEL:**

**4.7.S.2-1** Other conditions exist which in the judgement of the Emergency Coordinator/EOF Director indicate actual or likely major failures of plant functions needed for protection of the public.

#### **BASIS:**

This EAL is intended to address unanticipated conditions not addressed explicitly elsewhere but that warrant declaration of an emergency because conditions exist which are believed by the Emergency Coordinator/EOF Director to fall under the emergency class description for Site Area Emergency.

#### **GENERAL EMERGENCY**

4.7.G.1 Other Conditions Existing Which in the Judgement of the Emergency Coordinator/EOF Director Warrant Declaration of General Emergency.

OPERATING MODE APPLICABILITY: All

#### **EMERGENCY ACTION LEVEL:**

**4.7.G.1-1** Other conditions exist which in the judgement of the Emergency Coordinator/EOF Director indicate: (1) actual or imminent substantial core degradation with potential for loss of containment, or (2) potential for uncontrolled radionuclide releases. These releases can reasonably be expected to exceed Environmental Protection Agency Protective Action Guideline levels outside the site boundary.

#### **BASIS:**

This EAL is intended to address unanticipated conditions not addressed explicitly elsewhere but that warrant declaration of an emergency because conditions exist which are believed by the Emergency Coordinator/EOF Director to fall under the General Emergency class.

#### §50.54(q) Screening Evaluation Form

Activity Description and References			BLOCK 1
SR/0/B/A/2000/003 (Activation of the responsibilities and action steps for gr the ERO (Telecommunications, Trans and Procurement) are being placed in Services) rev 000.  Per these Duke Energy Fleet procedure Procedure for EOF Services) was deletered are no impacts upon any planning Response Support and Resources) and	erd Procedure for Emergency Options that do not portation Service new Administrate changes; referenced from McGuing standard espectations and the service of	r EOF Services) and moved actions into erations Facility) rev 001. Roles, routinely report to the EOF but support es, Risk Management and Insurance, tive Procedure AD-EP-DEC-0107 (EOF ence to SR/0/B/2000/002 (Standard ire Emergency Plan Figure P-2. exially 50.47(b)(3) (Emergency mergency Facility and Equipment) or There is no reduction in effectiveness and Private Organizations) and M.2 eness evaluation is not required.	
Activity Scope:			BLOCK 2
The activity is a change to the em	ergency plan		* 4.2 I
☐ The activity <u>is not</u> a <i>change</i> to the	emergency plan	1	
Change Type:	BLOCK 3	Change Type:	BLOCK 4
☐ The change <u>is</u> editorial or typogra ☐ The change <u>is not</u> editorial or typogra		<ul> <li>☐ The change does conform to an act prior approval</li> <li>☑ The change does not conform to an prior approval</li> </ul>	

### 3.10 10CFR 50.54(q) Evaluations

Planning Standard Impact Determin	ation:		BLOCK 5
Solution   Solution	onsibility (Organization Control) Organization the Support and Resources tication System* ds and Procedures* inications d Information and Equipment int* the see* sure Control the Health Support the and Post-accident Operations the see the support of the second of the		
Z The proposed delivity does not imp			
Commitment Impact Determination:			BLOCK 6
☐ The activity does involve a site spectrum Record the commitment or commitment. ☐ The activity does not involve a site.	ment reference:		1
Screening Evaluation Results:			BLOCK 7
☐ The activity <u>can</u> be implemented w.	ithout performing a §50.54(q) effective without performing a §50.54(q) effecti		
Preparer Name: Kandy Gibson	Preparer Signature	Date:	115/14
Reviewer Name: Renard O. Burris	Reviewer Signature	Date:	15/14

#### 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 <u>Emergency Response Planning</u>

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 <u>Distribution of Revised Plans</u>

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 <u>Table of Contents</u>

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 AD-EP-ALL-0001. 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 #	<u>Title</u>	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 #	<u>Title</u>	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 #	<u>Title</u>	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 #	<u>Title</u>	Emergency Plan Section  Implemented
HP/0/B/1009/029	Initial Response On-Shift Dose Assessment	Section I.3.a/b
SH/0/B/2005/001	Emergency Response Offsite Dose Projections	Section I
SH/0/B/2005/002	Protocol for the Field Monitoring Coordinator	Section I.8
SH/0/B/2005/003	Distribution of Potassium Iodide Tablets in the Event of a Radioiodine Release	J.6
SR/0/B/2000/001	Standard Procedure for Public Affairs 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

Change #	Old Step#	Old Step Wording	New Step #	New Step Wording	EP Function	Deviation or Difference or None? <sup>1</sup>
1.	1. Symptoms	An emergency condition exists requiring EOF activation.	AD-EP-DEC- 0107 Step 1. Purpose	Symptoms not required per Duke Energy Procedure Writer's Manual Revision 12 and AD-DC-ALL-0201. Replaced by Purpose: Provides responsibilities and actions for the following areas that support the EOF Services Manager during EOF activation and recovery operations:  Telecommunications Transportation Services Risk Management and Insurance Procurement	N/A	N/A
2.	2. Immediate Actions	Activate the EOF Services functions. The following services functions are established or made available: • Communication Systems (Enclosure 4.1) • Transportation Services (Enclosure 4.2) • Administration/Commissary (Enclosure 4.3) • Risk Management and Insurance (Enclosure 4.4) • Procurement (Enclosure 4.5)	SR/0/A/2000/0 03 Enclosure 6.19 Step 4	Activate the EOF Services Function by establishing duty function contacts for EOF service areas and post in EOF Service area:  • Administration/Commissary  • Communications (24-hour number is 704-382-1961)  • Transportation Services  • Risk Management and Insurance  • Procurement	B.2 - The process for timely augmentation of onshift staff is established and maintained.	Difference
3.	3. Subsequent Actions	Shutdown EOF per Enclosure 4.6.	N/A	Subsequent Actions not required per Duke Energy Procedure Writer's	N/A	N/A

Deviation - differs in wording and is altered in meaning or intent; difference - differs in wording but agrees in meaning and intent; None - wording same as existing procedure. Differences can be screened; deviations will need to be evaluated

Change #	Old Step#	Old Step Wording	New Step #	New Step Wording	EP Function	Deviation or Difference or None? <sup>1</sup>
				Manual Revision 12 and AD-DC-ALL-0201. See Enclosure 4.6 below for specific items.		
4.	4. Enclosures	4.1 Communications 4.2 Transportation Services 4.3 Administration/Commissary 4.4 Risk Management and Insurance 4.5 Procurement 4.6 EOF Shutdown Review Items	See disposition to right	Communications - AD-EP-DEC-0107 Steps 4.1 and 5.1 Transportation Services - AD-EP-DEC- 0107 Steps 4.2 and 5.2 Risk Management and Insurance - AD- EP-DEC-0107 Steps 4.3 Procurement - AD-EP-DEC-0107 Steps 4.4 and 5.3 EOF Shutdown Review Items - SR/0/A/2000/003 Enclosures 6.11 and 6.19	N/A	N/A

Chang e #	Old Step#	Old Step Wording	New Step #	New Step Wording	EP Function	Deviation or Difference or None? <sup>2</sup>
5.	Enclosure 4.1	Communications	4.1	Telecommunications		
6.	1. Purpose	Provides the telephone and radio requirements of the overall recovery organization as well as electrical needs.	AD-EP- DEC-0107 Step 4.3	Corrects problems within the telecommunications network, phones, pagers; and radios for the Emergency Response Organization.	F.2 - Systems are established for prompt communication among principal emergency response organizations. H.2 - Adequate facilities are maintained to support emergency response.	Deviation: Responsibilities of the Information Technology Department in support of Nuclear Generation are specified in NPM Chapter 7. It does not include electrical hookups.
7.	2. Major Functions		4.1	Responsibilities		
8.	2.1	Install and maintain telephone system.	AD-EP- DEC-0107 Step 4.1.1	Installs and maintains the telephone system used by the Emergency Response Organization.	F.2 - Systems are established for prompt communication among principal emergency response organizations.	Difference. This procedure describes the responsibilities of the Communications group during a declared event. Responsibilities of the Information Technology Department in support of Nuclear Generation are specified in NPM Chapter 7.

<sup>&</sup>lt;sup>2</sup> Deviation - differs in wording and is altered in meaning or intent; difference - differs in wording but agrees in meaning and intent; None - wording same as existing procedure. Differences can be screened; deviations will need to be evaluated

Chang e #	Old Step#	Old Step Wording	New Step#	New Step Wording	EP Function	Deviation or Difference or None? <sup>2</sup>
9.	2.2	Supply mobile radios and radio pagers.	AD-EP- DEC-0107 Step 4.1.2	Provides mobile radios and pagers for the Emergency Response Organization.	F.2 - Systems are established for prompt communication among principal emergency response organizations.	Difference. This procedure describes the responsibilities of the Communications group during a declared event. Responsibilities of the Information Technology Department in support of Nuclear Generation are specified in NPM Chapter 7.
10.	2.3	Install additional electrical hookups as needed:	N/A	N/A	H.2 - Adequate facilities are maintained to support emergency response.	Deviation. Responsibilities of the Information Technology Department in support of Nuclear Generation are specified in NPM Chapter 7. Electrical hookups are not included.
11.	Note before Step 2.4	NOTE: Telecommunications Operations Center (704-382-1961) is staffed 7 days a week, 24 hours a day.	N/A	Not an Action Step. Phone number moved into AD-EP-DEC-0107 Step 5.1	N/A	N/A
12.	2.4	Notify Telecommunications Operations Center should any additional problem	AD-EP- DEC-0107	Notify the Telecommunications Operations Center (704-382-1961) if	H.2 - Adequate facilities are	Difference

Chang e #	Old Step#	Old Step Wording	New Step #	New Step Wording	EP Function	Deviation or Difference or None? <sup>2</sup>
		solving be necessary and/or additional personnel be required.	Step 5.1	any communication systems problem solving is necessary or additional personnel are required.	maintained to support emergency response.	
13.	3. Communications Systems	Telephone System  The system consists of independent lines for use by Emergency Response personnel and provisions are made for phones for NRC use and special off-site agency coordination use.	AD-EP- DEC-0107 Step 3.11	Telephone System: Independent lines for use by Emergency Operations Facility personnel with access to commercial local and long distance service and the Duke Energy telecommunications network. Telephones are located throughout the facility.	F.2 - Systems are established for prompt communication among principal emergency response organizations.	Difference
14.		Radio Systems  These systems consist of independent systems for use by the Off-site Communicators, State Field Monitoring and Duke Field Monitoring (800 MHz system).	AD-EP- DEC-0107 Step 3.5	Radio Systems: Independent systems for use by the Offsite Agency Communicators, State Field Monitoring team, and Duke Field Monitoring teams located in the Offsite Agency Communicator (ECI-0124-03) and Offsite Monitoring (ECI-0126) rooms.	F.2 - Systems are established for prompt communication among principal emergency response organizations.	Difference
15.		Satellite Telephones  The EOF has independent satellite telephones in two locations in the EOF. One is located in the Off-site Communications area; the other is located in the Field Monitoring area.	AD-EP- DEC-0107 Step 3.7	Satellite Telephones (Fixed): Satellite radio and telephones with access to the North Carolina Emergency Management talk groups located in the Offsite Agency Communicator room (ECI-0124-03) and the Offsite Monitoring room (ECI-0126).	F.2 - Systems are established for prompt communication among principal emergency response organizations.	Difference
16.	4. Equipment	Communications: All communication	N/A	N/A	F.2 - Systems are	Difference

Chang e #	Old Step#	Old Step Wording	New Step #	New Step Wording	EP Function	Deviation or Difference or None? <sup>2</sup>
	·	equipment for the EOF is in each individual room and location.			established for prompt communication among principal emergency response organizations.	
17.		Telephones (commercial, microwave, and cellular) are located throughout the facility.	AD-EP- DEC-0107 Step 3.11	Telephone System: Independent lines for use by Emergency Operations Facility personnel with access to commercial local and long distance service and the Duke Energy telecommunications network. Telephones are located throughout the facility.	F.2 - Systems are established for prompt communication among principal emergency response organizations.	Difference
18.		Selective Signal Telephone     (state/county notification equipment) is     located in the Off-site Agency     Communicator room.	AD-EP- DEC-0107 Step 3.9	Selective Signaling System: State and County notification equipment located in the Offsite Agency Communicator room (ECI-0124-03).	F.2 - Systems are established for prompt communication among principal emergency response organizations.	Difference
19.		• Emergency Telecommunications System (formerly FTS2000 System) is located in the NRC room (NRC telephones and LAN connections for laptop computers), Accident Assessment Room and Dose Assessment Room.	AD-EP- DEC-0107 Step 3.4	Emergency Telecommunications System: Formerly known as the FTS2000 System. NRC communications system located in the NRC room (ECI-0124-04), Accident Assessment room (ECI-0124-01) and Radiological Assessment room (ECI-0125).	F.2 - Systems are established for prompt communication among principal emergency response organizations.	Difference

Chang e #	Old Step#	Old Step Wording	New Step #	New Step Wording	EP Function	Deviation or Difference or None? <sup>2</sup>
20.	·	SC Emergency Radios are located in the Off-site Agency Communicator room and Field Monitoring room.	AD-EP- DEC-0107 Step 3.10	South Carolina (SC) Emergency Radios: Radios on the SC Emergency Management Frequency located in the Off-site Agency Communicator room (ECI-0124-03) and Offsite Monitoring room (ECI-0126).	F.2 - Systems are established for prompt communication among principal emergency response organizations.	Difference
21.		Duke Power Emergency Radio System (800 MHz system) is located in the Field Monitoring room.	AD-EP- DEC-0107 Step 3.3	Duke Energy Emergency Radio System: 800 MHz system located in the Offsite Monitoring room (ECI- 0126).	F.2 - Systems are established for prompt communication among principal emergency response organizations.	Difference
22.		<ul> <li>Ringdown Telephones (connected to MNS &amp; CNS TSCs) are located in the EOF Director's Area.</li> </ul>	AD-EP- DEC-0107 Step 3.6	Ringdown Telephones: Special telephones connected point to point to the McGuire and Catawba TSCs located in the EOF Director's area (ECI-0124).	F.2 - Systems are established for prompt communication among principal emergency response organizations.	Difference
23.		• Decision Line Telephones (State/County communications network) are located in the EOF Director's area.	AD-EP- DEC-0107 Step 3.2	Decision Line Telephones: State and County communications network used for off-site agency coordination located in the EOF Director's area (ECI-0124).	F.2 - Systems are established for prompt communication among principal emergency response organizations.	Difference

Chang e #	Old Step#	Old Step Wording	New Step #	New Step Wording	EP Function	Deviation or Difference or None? <sup>3</sup>
24.	Enclosure 4.2	Transportation Services	4.2	Transportation Services		
25.	1. Purpose	Provides necessary equipment for movement of material and personnel.	AD-EP- DEC-0107 Step 4.2.1	Provides transportation needs for movement of material, personnel, supplies, and equipment.	C.1 - Arrangements for requesting and using offsite assistance have been made.	Difference
26.	2. Major Functions		4.2	Responsibilities - Transportation Services		
27.	2.1	Provide vehicles and operators for personnel and equipment movement.	AD-EP- DEC-0107 Step 4.2.2	Provides vehicles and operators for personnel and equipment movement.	C.1 - Arrangements for requesting and using offsite assistance have been made.	Difference
28.	2.2	Provide common carrier and specialized carrier service for specific material and personnel needs.	AD-EP- DEC-0107 Step 4.2.3	Provides common carrier and specialized carrier service for specific material and personnel needs.	C.1 - Arrangements for requesting and using offsite assistance have been made.	Difference
29.	2.3	Coordinate, trace, and expedite material deliveries and shipments in and out of recovery site.	AD-EP- DEC-0107 Step 4.2.4	Coordinates, traces, and expedites material deliveries and shipments in and out of recovery site.	C.1 - Arrangements for requesting and using offsite assistance have	Difference

<sup>&</sup>lt;sup>3</sup> Deviation - differs in wording and is altered in meaning or intent; difference - differs in wording but agrees in meaning and intent; None - wording same as existing procedure. Differences can be screened; deviations will need to be evaluated

Chang e #	Old Step #	Old Step Wording	New Step #	New Step Wording	EP Function	Deviation or Difference or None? <sup>3</sup>
			<u></u>		been made.	
30.	2.4	Provide fuel for on-site recovery vehicles.	AD-EP- DEC-0107 Step 4.2.5	Provide fuel for on-site recovery vehicles.	C.1 - Arrangements for requesting and using offsite assistance have been made.	Difference
31.	2.5	Transport environmental samples for analysis upon request by the Radiological Assessment Group.	AD-EP- DEC-0107 Step 4.2.6	Transport environmental samples for analysis.	C.1 - Arrangements for requesting and using offsite assistance have been made.	Difference
32.	3. Additional Personnel Required	Additional personnel may be required to handle functions such as shuttle service, garbage pickup, environmental sample transport. Immediate needs are to be assessed upon arrival at the site.	AD-EP- DEC-0107 Step 5.2.2.1	Determine whether additional personnel are required for functions such as shuttle service, garbage pickup, and environmental sample transport.	C.1 - Arrangements for requesting and using offsite assistance have been made.	Difference
33.	4. First Call-Out		AD-EP- DEC-0107 Step 5.2.1	First Call-Out		
34.	4.1	On the first call-out, the director or designee will organize and transport the equipment and operating personnel needed initially.	AD-EP- DEC-0107 Step 5.2.1.2	Obtain and transport equipment and operating personnel needed initially.	C.1 - Arrangements for requesting and using offsite assistance have been made.	Difference
35.	4.2	The first contingency will begin with establishment of base operations. This	AD-EP- DEC-0107	Establish a base of operations, including personnel and transport equipment.	C.1 - Arrangements for	Difference

Chang e #	Old Step#	Old Step Wording	New Step #	New Step Wording	EP Function	Deviation or Difference or None? <sup>3</sup>
		will include personnel establishment and transport equipment assessment.	Step 5.2.1.4		requesting and using offsite assistance have been made.	
36.	4.3	Equipment presently harbored at the General Office, Toddville, McGuire, Catawba and Oconee sites, depending on the magnitude and need, is available for use at the onset. An assessment of availability will be made on arrival of the first transportation contingency.	AD-EP- DEC-0107 Note before Step 5.2.1.1, Step 5.2.1.1	NOTE: Equipment stored at the General Office, Toddville, McGuire, Catawba and Oconee sites, depending on the magnitude and need, is available for use at the onset of an event.  5.2.1.1 Assess immediate needs upon arrival at the site.	C.1 - Arrangements for requesting and using offsite assistance have been made.	Difference
37.	4.4	Environmental samples transport requests will be initiated by the Radiological Assessment Group. The time and location of sample pick-up will be determined by the Transportation Director and Field Monitoring Coordinator. Sample destination will be the Applied Science Center (ASC) or unaffected station, as specified by the Radiological Assessment Group.	AD-EP- DEC-0107 Step 5.2.1.5	Transport environmental samples as requested by the Radiological Assessment Group.  a. Determine the time and location of sample pick-up with the Field Monitoring Coordinator.  b. Obtain sample destination from the Radiological Assessment Group.	C.1 - Arrangements for requesting and using offsite assistance have been made.	Difference

Chang e #	Old Step#	Old Step Wording	New Step #	New Step Wording	EP Function	Deviation or Difference or None? <sup>4</sup>
38.	Enclosure 4.3	Administration/Commissary	SR/0/A/2000 /003 Enclosure 6.11	EOF Services Administration/Commissary Checklist		
39.	1. Purpose	To provide general administrative office support and supplies and meet basic nutritional and personal needs of the recovery organization.	N/A	Not required for an SR Enclosure. Not an action step.	N/A	N/A
40.	2. Major Functions		N/A	N/A		
41.	2.1	Provide office supplies and equipment.	SR/0/A/2000/ 003 Enclosure 6.11 Step 6	Provide administrative office support and supplies, such as:  Office supplies and equipment	H.2 - Adequate facilities are maintained to support emergency response.	Difference
42.	2.2	Provide secretarial/clerical services.	SR/0/A/2000/ 003 Enclosure 6.11 Step 6	Provide administrative office support and supplies, such as:  • Secretarial/clerical services	H.2 - Adequate facilities are maintained to support emergency response.	Difference
43.	2.3	Provide copy services.	SR/0/A/2000/ 003 Enclosure 6.11 Step 6	Provide administrative office support and supplies, such as:  • Copy center/fax services	H.2 - Adequate facilities are maintained to support emergency	Difference

<sup>&</sup>lt;sup>4</sup> Deviation - differs in wording and is altered in meaning or intent; difference - differs in wording but agrees in meaning and intent; None - wording same as existing procedure. Differences can be screened; deviations will need to be evaluated

Chang e #	Old Step#	Old Step Wording	New Step #	New Step Wording	EP Function	Deviation or Difference or None? <sup>4</sup>
			<u> </u>		response.	
44.	2.4	Provide air travel, hotel, and car rental arrangements.	SR/0/A/2000/ 003 Enclosure 6.11 Step 7	Provide for personal needs of ERO, such as:  Air travel, hotel, and car rental arrangements	H.2 - Adequate facilities are maintained to support emergency response.	Difference
45.	2.5	Contact Payroll to get checks for individuals upon request.	N/A	N/A	None	Deviation - With Direct Deposit and mailing paychecks home, considered not necessary:
46.	2.6	Provide assistance for Petty Cash activities.	N/A	N/A	C.1 - Arrangements for requesting and using offsite assistance have been made.	Deviation - With use of Corporate Credit Cards, considered not necessary:
47.	2.7	Provide in-house craft resources as requested.	SR/0/A/2000/ 003 Enclosure 6.11 Step 8	<u>IF</u> requested, provide in-house craft resources	C.1 - Arrangements for requesting and using offsite assistance have been made.	Difference
48.	2.8	Provide food and beverage.	SR/0/A/2000/ 003 Enclosure 6.11 Step 7	Provide for personal needs of ERO, such as:  • Food and beverage	C.1 - Arrangements for requesting and using offsite assistance have been made.	Difference

Chang e #	Old Step#	Old Step Wording	New Step#	New Step Wording	EP Function	Deviation or Difference or None? <sup>4</sup>
49.	2.9	Provide tables and chairs.	SR/0/A/2000/ 003 Enclosure 6.11 Step 7	Provide for personal needs of ERO, such as:  Tables and chairs	C.1 - Arrangements for requesting and using offsite assistance have been made.	Difference
50.	2.10	Provide tents.	SR/0/A/2000/ 003 Enclosure 6.11 Step 7	Provide for personal needs of ERO, such as:  Tents	C.1 - Arrangements for requesting and using offsite assistance have been made.	Difference
51.	2.11	Provide portable toilets.	SR/0/A/2000/ 003 Enclosure 6.11 Step 7	Provide for personal needs of ERO, such as:  • Portable toilets	C.1 - Arrangements for requesting and using offsite assistance have been made.	Difference
52.	2.12	Provide trash receptacles.	SR/0/A/2000/ 003 Enclosure 6.11 Step 7	Provide for personal needs of ERO, such as:  • Trash receptacles	C.1 - Arrangements for requesting and using offsite assistance have been made.	Difference
53.	2.13	Ensure EOF is restocked between uses.	SR/0/A/2000/ 003 Enclosure 6.11 EOF Facility Post Event	Restock office supplies.	H.2 - Adequate facilities are maintained to support emergency response.	Difference

Chang e #	Old Step#	Old Step Wording	New Step #	New Step Wording	EP Function	Deviation or Difference or None? <sup>4</sup>
			Checklist Step 2			
54.	2.14	Maintain positive control of food service personnel while they are within the EOF.	SR/0/A/2000/ 003 Enclosure 6.11, Note before Step 7	NOTE: Personnel without badge access will need to be escorted into the EOF by the Assistant EOF Director, EOF Emergency Planner, EOF Services Manager, or their Mentor. {61}	H.2 - Adequate facilities are maintained to support emergency response.	Difference
55.	3. Action List Upon Arrival at EOF					
56.	3.1	Upon arrival at EOF, members of the Administration staff will be responsible for the following:	N/A	Not an action step.	N/A	N/A
57.	3.1.1	Ensure that the EOF Services area is set up.	SR/0/A/2000/ 003 Enclosure 6.11, Step 5	Ensure that the EOF Services Area is set up.	H.2 - Adequate facilities are maintained to support emergency response.	None
58.	3.1.2	Contact additional personnel if needed.	SR/0/A/2000/ 003 Enclosure 6.11, Step 9	IF needed, contact additional personnel for support.	B.2 - The process for timely augmentation of onshift staff is established and maintained.	Difference
59.	3.1.3	Provide copy center / fax services.	SR/0/A/2000/ 003 Enclosure 6.11 Step 6	Provide administrative office support and supplies, such as:  • Copy center/fax services	B.2 - The process for timely augmentation of onshift staff is established and	Difference

Chang e #	Old Step #	Old Step Wording	New Step#	New Step Wording	EP Function	Deviation or Difference or None? <sup>4</sup>
60.	3.1.4	Set up food service and ensure beverages and snacks are available.	SR/0/A/2000/ 003 Enclosure 6.11 Step 7	Provide for personal needs of ERO, such as:  • Food and beverage	maintained.  C.1 - Arrangements for requesting and using offsite assistance have been made.	Difference
61.	4. Action List for Changing from Emergency to Recovery Mode		SR/0/A/2000/ 003 Enclosure 6.11	Action List for Changing from Emergency to Recovery Mode	,	
62.	4.1	Replenish supplies.	SR/0/A/2000/ 003 Enclosure 6.11, Step 1	Replenish supplies.	H.2 - Adequate facilities are maintained to support emergency response.	None
63.	4.2	Determine additional space requirements.	SR/0/A/2000/ 003 Enclosure 6.11, Step 2	Determine additional space requirements.	M.1 - Plans for recovery and reentry are developed	None
64.	4.3	Prepare weekly work schedules.	SR/0/A/2000/ 003 Enclosure 6.11, Step 3	Prepare weekly work schedules.	M.1 - Plans for recovery and reentry are developed	None
65.	4.4	Determine hotel/motel accommodations and travel requirements; contact Corporate Travel Center for securing these requirements.	SR/0/A/2000/ 003 Enclosure 6.11, Step 4	Determine hotel/motel accommodations and travel requirements and contact Travel Services for securing these requirements.	C.1 - Arrangements for requesting and using offsite assistance have	Difference

Chang e #	Old Step#	Old Step Wording	New Step #	New Step Wording	EP Function	Deviation or Difference or None? <sup>4</sup>
66.	4.5	Notify Food Vendors - Set up shift operations to support recovery efforts for meals and breaks (snacks) with times and locations for serving.	SR/0/A/2000/ 003 Enclosure 6.11, Step 5	Notify food vendors to arrange shift operations to support recovery efforts for meals and breaks (snacks) with times and locations for serving.	been made.  C.1 -  Arrangements for requesting and using offsite assistance have been made.	Difference
67.	4.6	Notify chairs and table suppliers/vendors for appropriate needs and quantities.	SR/0/A/2000/ 003 Enclosure 6.11, Step 6	Notify chairs and table suppliers for appropriate needs and quantities.	C.1 - Arrangements for requesting and using offsite assistance have been made.	None
68.	4.7	Notify tent suppliers for appropriate needs and quantities.	SR/0/A/2000/ 003 Enclosure 6.11, Step 7	Notify tent suppliers for appropriate needs and quantities.	C.1 - Arrangements for requesting and using offsite assistance have been made.	None
69.	4.8	Notify portable toilet suppliers for appropriate needs and quantities.	SR/0/A/2000/ 003 Enclosure 6.11, Step 8	Notify portable toilet suppliers for appropriate needs and quantities.	C.1 - Arrangements for requesting and using offsite assistance have been made.	None .
70.	4.9	Notify trash receptacles suppliers for appropriate needs and quantities.	SR/0/A/2000/ 003 Enclosure 6.11, Step 9	Notify trash receptacles suppliers for appropriate needs and quantities.	C.1 - Arrangements for requesting and using offsite assistance have	None

Chang e #	Old Step#	Old Step Wording	New Step #	New Step Wording	EP Function	Deviation or Difference or None? <sup>4</sup>
					been made.	
71.	4.10	Establish shift coverage of commissary	SR/0/A/2000/	Establish shift coverage of commissary	M.1 - Plans for	None
		personnel to support total recovery	003	personnel to support total recovery	recovery and	
		efforts.	Enclosure	efforts.	reentry are	
			6.11, Step 10		developed	

Chang e #	Old Step#	Old Step Wording	New Step #	New Step Wording	EP Function	Deviation or Difference or None? <sup>5</sup>
72.	Enclosure 4.4	Risk Management and Insurance	AD-EP- DEC-0107 Step 4.3	Responsibilities - Risk Management and Insurance		
73.	1. Purpose		N/A			
74.	1.1	Serve as liaison between Duke and insurance companies.	AD-EP- DEC-0107 Step 4.3.1	Coordinates between Duke and insurance companies.	C.1 - Arrangements for requesting and using offsite assistance have been made.	Difference
75.	1.2	Interface with other EOF groups to provide assistance needed by insurance companies.	AD-EP- DEC-0107 Step 4.3.2	Coordinates with other EOF groups to provide assistance needed by insurance companies.	C.1 - Arrangements for requesting and using offsite assistance have been made.	Difference
76.	2. Major Functions		N/A	N/A		
77.	2.1	Provide contact with insurance companies.	AD-EP- DEC-0107 Step 4.3.3	Contacts insurance companies.	C.1 - Arrangements for requesting and using offsite assistance have been made.	Difference
78.	2.2	Assist insurance companies in incident data gathering and efficient handling of Duke public nuclear liability responsibilities.	AD-EP- DEC-0107 Step 4.3.4	Assists insurance companies in incident data gathering and handling of Duke Energy public nuclear liability responsibilities.	C.1 - Arrangements for requesting and using offsite	Difference

<sup>&</sup>lt;sup>5</sup> Deviation - differs in wording and is altered in meaning or intent; difference - differs in wording but agrees in meaning and intent; None - wording same as existing procedure. Differences can be screened; deviations will need to be evaluated

Chang e #	Old Step#	Old Step Wording	New Step #	New Step Wording	EP Function	Deviation or Difference or None? <sup>5</sup>
					assistance have been made.	
79.	2.3	Assist insurance companies in establishing claims offices to disburse emergency assistance funds to evacuees and other insurance companies response functions.	AD-EP- DEC-0107 Step 4.3.5	Assists insurance companies in establishing claims offices to disburse emergency assistance funds to evacuees and other response functions.	C.1 - Arrangements for requesting and using offsite assistance have been made.	Difference
80.	3. Interfacing with Other Groups		N/A	N/A		
81.	3.1	Interface with appropriate technical support groups to obtain the necessary technical information sufficient to satisfy the needs of the insurance companies.	AD-EP- DEC-0107 Step 4.3.6	Coordinates with appropriate technical support groups to obtain the necessary technical information sufficient to satisfy the needs of the insurance companies.	C.1 - Arrangements for requesting and using offsite assistance have been made.	Difference
82.	3.2	Work with Administrative Group to provide assistance in securing motel reservations and other logistics if insurance companies should dispatch an investigative team or other response support personnel.	AD-EP- DEC-0107 Step 4.3.7	Coordinates with EOF Administration/Commissary personnel to secure motel reservations and other logistics in the event that insurance companies dispatch an investigation team or other response support personnel.	C.1 - Arrangements for requesting and using offsite assistance have been made.	Difference
83.	3.3 Claims Office		N/A	N/A		
84.	3.3.1	In the event it becomes necessary to evacuate members of the general public, the insurance company would set up claims offices to disburse emergency assistance funds.	AD-EP- DEC-0107 Note before Step 4.3	NOTE: Claims would be handled by insurance company personnel.	C.1 - Arrangements for requesting and using offsite assistance have been made.	Difference
85.	3.3.2	Risk Management and Insurance would	AD-EP-	Assists insurance companies in	C.1 -	Difference

Chang e #	Old Step #	Old Step Wording	New Step #	New Step Wording	EP Function	Deviation or Difference or None? <sup>5</sup>
		provide as much assistance as possible in expediting the setting up of this claims office.	DEC-0107 Step 4.3.5	establishing claims offices to disburse emergency assistance funds to evacuees and other response functions.	Arrangements for requesting and using offsite assistance have been made.	
86.	3.3.3	Risk Management and Insurance would also communicate with Corporate Communications about its location and operation. Claims would be handled by insurance company personnel.	AD-EP- DEC-0107 Note before Step 4.3, Step 4.3.8	NOTE: Claims would be handled by insurance company personnel.  4.3.8 Communicates with Corporate Communications about claims office locations and operations.	C.1 - Arrangements for requesting and using offsite assistance have been made.	Difference

Chang e #	Old Step#	Old Step Wording	New Step#	New Step Wording	EP Function	Deviation or Difference or None? <sup>6</sup>
87.	Enclosure 4.5	Procurement	AD-EP- DEC-0107 Step 4.4	Responsibilities - Procurement		
88.	1. Purpose	Coordinate all activities with the Recovery Organization relating to procurement of materials, equipment and services.	AD-EP- DEC-0107 Step 4.4.1	Coordinates all activities relating to rental or procurement of materials, equipment, and services including the following:	C.1 - Arrangements for requesting and using offsite assistance have been made.	Difference
89.	Note before Step 2	NOTE: The EOF Director and Services Manager are authorized to approve expenses incurred in the performance of the duties described in this procedure.	AD-EP- DEC-0107 Step 5.5.2.1	The EOF Director and Services Manager are authorized to approve expenses incurred in the performance of the duties described in this procedure.	C.1 - Arrangements for requesting and using offsite assistance have been made.	Difference
90.	2. Major Functions		N/A	N/A		
91.	2.1	Issue requisitions.	AD-EP- DEC-0107 Step 4.4.1.a	Issues requisitions.	C.1 - Arrangements for requesting and using offsite assistance have been made.	None
92.	2.2	Negotiate contracts.	AD-EP- DEC-0107 Step 4.4.1.b	Negotiates contracts.	C.1 - Arrangements for requesting and using offsite assistance have	None

<sup>&</sup>lt;sup>6</sup> Deviation - differs in wording and is altered in meaning or intent; difference - differs in wording but agrees in meaning and intent; None - wording same as existing procedure. Differences can be screened; deviations will need to be evaluated

Chang e #	Old Step#	Old Step Wording	New Step #	New Step Wording	EP Function	Deviation or Difference or None? <sup>6</sup>
					been made.	
93.	2.3	Issue purchase orders.	AD-EP- DEC-0107 Step 4.4.1.c	Issues purchase orders.	C.1 - Arrangements for requesting and using offsite assistance have been made.	None
94.	2.4	Expedite hardware and software.	AD-EP- DEC-0107 Step 4.4.1.d	Expedites hardware and software.	C.1 - Arrangements for requesting and using offsite assistance have been made.	None
95.	2.5	Coordinate receipt of material.	AD-EP- DEC-0107 Step 4.4.1.e	Coordinates receipt of material	C.1 - Arrangements for requesting and using offsite assistance have been made.	None
96.	2.6	Coordinate distribution of material.	AD-EP- DEC-0107 Step 4.4.1.f	Coordinates distribution of material.	C.1 - Arrangements for requesting and using offsite assistance have been made.	None
97.	3. Additional Personnel Required					
98.	3.1	Since most of the purchasing function will be handled in either the Central or the Site Procurement Groups, the entire	AD-EP- DEC-0107 Note before	NOTE: Since most of the purchasing function will be handled in either the Central or the Site Procurement Groups,	C.1 - Arrangements for requesting and	Difference

Chang e #	Old Step#	Old Step Wording	New Step #	New Step Wording	EP Function	Deviation or Difference or None? <sup>6</sup>
		Nuclear Supply Chain and Nuclear Sourcing Group will be at the Procurement Director's disposal. The Central and Site Procurement Groups will deploy and staff back-up teams per the Procurement Director's instructions.	Step 5.3.2.1, Step 5.3.2.1.a	the entire Nuclear Supply Chain and Nuclear Sourcing Group will be at the Procurement Director's disposal.  5.3.2.1.a The Central and Site Procurement Groups will deploy and staff back-up teams per the Procurement Director's instructions.	using offsite assistance have been made.	
99.	3.2	The EOF Procurement team will utilize the clerical support provided by the Administration Group for necessary support functions in the EOF.	AD-EP- DEC-0107 5.3.2.2	Use the clerical support provided by the EOF Administration/Commissary Group for necessary support functions.	C.1 - Arrangements for requesting and using offsite assistance have been made.	Difference
100.	4. Arrival at EOF		5.3.1	Initial Actions		
101.	4.1	The Procurement Director will assess the situation and activate the Central and Site Procurement teams, if necessary.	AD-EP- DEC-0107 5.3.1.1 and 5.3.1.1.a	Based on the assessment of the current situation and events, perform the following as needed:  a. Activate the Central and Site Procurement teams.	C.1 - Arrangements for requesting and using offsite assistance have been made.	Difference
102.	4.2	Immediate work will begin on procurement of equipment, material and services as may be required.	AD-EP- DEC-0107 5.3.1.1.b	b. Commence procurement of needed equipment, material and services.	C.1 - Arrangements for requesting and using offsite assistance have been made.	Difference
103.	5. Interface with Other Groups		AD-EP- DEC-0107	Subsequent Actions		

Chang e #	Old Step #	Old Step Wording	New Step #	New Step Wording	EP Function	Deviation or Difference or None? <sup>6</sup>
104.		Work with Transportation Director and suppliers to ensure expeditious delivery of equipment to the site and with the Administration Director to obtain required funds from petty cash for small purchases.  Work with Nuclear Generation	AD-EP- DEC-0107 5.3.2.3	Coordinate with the Transportation Director and suppliers to ensure expeditious delivery of requested equipment to the site.	C.1 - Arrangements for requesting and using offsite assistance have been made. C.1 -	Deviation - With use of Corporate Credit Cards, petty cash considered not necessary.
		Department (NGD) site personnel concerning the receipt and distribution of equipment and materials.	DEC-0107 5.3.2.5	Coordinate with Nuclear Supply Chain site group concerning the receipt and distribution of equipment and materials.	Arrangements for requesting and using offsite assistance have been made.	
106.	6. Recovery Stage		AD-EP- DEC-0107 5.3.3	Recovery		
107.	Note before Step 6.1	NOTE: The following is a checklist of things to do and/or consider when moving from the emergency to the recovery stage of an event.	AD-EP- DEC-0107 5.3.3.1	The following items should be considered when moving from the emergency to the recovery stage of an event:	M.1 - Plans for recovery and reentry are developed	Difference
108.	6.1	Activate Procurement back-up teams.	AD-EP- DEC-0107 5.3.3.1.a	Activating Procurement back-up teams.	M.1 - Plans for recovery and reentry are developed	Difference
109	. 6.2	Prepare work schedule for Procurement team.	AD-EP- DEC-0107 5.3.3.1.b	Preparing work schedules for Procurement team.	M.1 - Plans for recovery and reentry are developed	Difference
110	. 6.3	Assess need for additional personnel support.	AD-EP- DEC-0107	Evaluating the need for additional personnel support.	M.1 - Plans for recovery and	Difference

Chang e #	Old Step#	Old Step Wording	New Step #	New Step Wording	EP Function	Deviation or Difference or None? <sup>6</sup>
			5.3.3.1.c		reentry are developed	
	7. Procedures					
112.		Requisitioning Equipment	N/A	N/A		
113.	7.1.1	When it has been determined that material, equipment, or services are needed, Procurement Coordinators at the EOF will convey that need as rapidly as possible to the Nuclear Supply Chain utilizing telephones and/or fax machines.	AD-EP- DEC-0107 5.3.2.1	Communicate the need for additional materials, equipment, or services as rapidly as possible to the Nuclear Supply Chain.	C.1 - Arrangements for requesting and using offsite assistance have been made.	Difference
114.	7.1.2	Requisitions for the recovery effort will be expedited through the Nuclear Supply Chain system for immediate order processing.	AD-EP- DEC-0107 5.3.3.1.d	Expediting requisitions for recovery effort through the Nuclear Supply Chain system for immediate order processing.	C.1 - Arrangements for requesting and using offsite assistance have been made.	Difference
115.	7.2	Receiving	N/A			
116.	7.2.1	Receipt of material and equipment will be handled by the Nuclear Supply Chain Site Group.	AD-EP- DEC-0107 5.3.2.5	Coordinate with Nuclear Supply Chain site group concerning the receipt and distribution of equipment and materials.	C.1 - Arrangements for requesting and using offsite assistance have been made.	Difference
117.	7.2.2	The EOF Procurement Team director will coordinate with site receiving to assure that the material gets to the appropriate destination at the site.	AD-EP- DEC-0107 5.3.2.6	Coordinate with site receiving to assure that the material gets to the appropriate destination at the site.	C.1 - Arrangements for requesting and using offsite assistance have been made.	Difference

Chang e #	Old Step #	Old Step Wording	New Step #	New Step Wording	EP Function	Deviation or Difference or None? <sup>7</sup>
118.	Enclosure 4.6	EOF Shutdown Review Items	SR/0/A/200 0/003 Enclosure 6.11, Page 2 of 2	EOF FACILITY POST-EVENT CHECKLIST		
119.	1. Administration /Commissary					
120.	1.1	Secure EOF Services area.	SR/0/A/200 0/003 Enclosure 6.11, Step 1	Secure EOF Services area.	H.2 - Adequate facilities are maintained to support emergency response.	None
121.	1.2	Restock office supplies as necessary.	SR/0/A/200 0/003 Enclosure 6.11, Step 2	Restock office supplies.	H.2 - Adequate facilities are maintained to support emergency response	Difference
122.	1.3	Arrange for return of relocated office equipment.	SR/0/A/200 0/003 Enclosure 6.11, Step 3	<ul> <li><u>IF</u> needed,</li> <li>Ensure return of relocated office equipment.</li> </ul>	H.2 - Adequate facilities are maintained to support emergency response	Difference
123.	. 1.4	Notify Hotels/Motels of release of rooms.	SR/0/A/200 0/003	<ul><li>IF needed,</li><li>Notify hotels/motels of release of</li></ul>	C.1 - Arrangements for	Difference

<sup>&</sup>lt;sup>7</sup> Deviation - differs in wording and is altered in meaning or intent; difference - differs in wording but agrees in meaning and intent; None - wording same as existing procedure. Differences can be screened; deviations will need to be evaluated

Chang e #	Old Step#	Old Step Wording	New Step#	New Step Wording	EP Function	Deviation or Difference or None? <sup>7</sup>
			Enclosure 6.11, Step 3	rooms.	requesting and using offsite assistance have been made.	
124.	1.5	Assist personnel needing airline transportation home.	SR/0/A/200 0/003 Enclosure 6.11, Step 3	<ul> <li>IF needed,</li> <li>Assist personnel needing transportation home.</li> </ul>	C.1 - Arrangements for requesting and using offsite assistance have been made.	Difference
125.	1.6	Notify vendors to discontinue food service to Emergency Operations Facility.	SR/0/A/200 0/003 Enclosure 6.11, Step 4	Notify vendors to discontinue food services to EOF.	C.1 - Arrangements for requesting and using offsite assistance have been made.	Difference
126.	1.7	Notify vendors to pick up furniture and equipment not required for Recovery.	SR/0/A/200 0/003 Enclosure 6.11, Step 3	<ul> <li>IF needed,</li> <li>Notify vendors to pick up furniture and equipment not needed for recovery.</li> </ul>	C.1 - Arrangements for requesting and using offsite assistance have been made.	Difference
127.	1.8	Make arrangements for trash removal.	N/A	N/A	H.2 - Adequate facilities are maintained to support emergency response	Deviation - The EOF is now on a regular daily cleaning schedule
128. 129.	2. Communications 2.1	Secure radio base stations.	N/A SR/0/A/200	Not an Action Step  IF needed, perform the following:	F.2 - Systems are	Difference

Chang e #	Old Step#	Old Step Wording	New Step #	New Step Wording	EP Function	Deviation or Difference or None? <sup>7</sup>
			0/003 Enclosure 6.19, Step 18	Request Communications secure radio base stations.	established for prompt communication among principal emergency response organizations.	
130.	2.2	Return portable communications equipment to storage location (if applicable).	SR/0/A/200 0/003 Enclosure 6.19, Step 18	<ul> <li>IF needed, perform the following:</li> <li>Request Communications return portable communications equipment to storage locations.</li> </ul>	F.2 - Systems are established for prompt communication among principal emergency response organizations.	Difference
131.	3. Procurement	Transfer information on outstanding requisitions to normal Procurement contacts.	SR/0/A/200 0/003 Enclosure 6.19, Step 18	<ul> <li>IF needed, perform the following:</li> <li>Request Procurement transfer information on outstanding requisitions to normal procurement contacts.</li> </ul>	C.1 - Arrangements for requesting and using offsite assistance have been made.	Difference
132.	4. Transportation Services		N/A	Not an Action Step		
133.	4.1	Arrange for transport of relocated equipment to original location, if applicable.	SR/0/A/200 0/003 Enclosure 6.19, Step 18	<ul> <li>IF needed, perform the following:</li> <li>Request Transportation Services return relocated equipment to original location.</li> </ul>	C.1 - Arrangements for requesting and using offsite assistance have been made.	Difference
134.	4.2	Arrange for transportation home for	SR/0/A/200	IF needed, perform the following:	C.1 -	Difference

Chang e #	Old Step#	Old Step Wording	New Step #	New Step Wording	EP Function	Deviation or Difference or None? <sup>7</sup>
		personnel (as needed).	0/003 Enclosure 6.19, Step 18	Request Transportation Services provide transportation home for ERO personnel.	Arrangements for requesting and using offsite assistance have been made.	
135.	5. Risk Management And Insurance	Notify insurance companies of change in status.	SR/0/A/200 0/003 Enclosure 6.19, Step 18	<ul> <li>IF needed, perform the following:</li> <li>Request Risk Management and Insurance notify insurance companies of change in drill/event status.</li> </ul>	C.1 - Arrangements for requesting and using offsite assistance have been made.	Difference