Duke Energy Corporation

Duke Energy.

W. R. McCollum, Jr. Vice President

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June 6, 2000

U. S. Nuclear Regulatory Commission Document Control Desk Washington, D. C. 20555

Subject: Oconee Nuclear Station Docket Nos. 50-269, -270, -287 Emergency Plan Implementing Procedures Manual Volume B, Revision 2000-04

Please find attached for your use and review copies of the revision to the Oconee Nuclear Station Emergency Plan:

Volume B Revision 2000-04 June, 2000

This revision is being submitted in accordance with 10 CFR 50-54(q) and does not decrease the effectiveness of the Emergency Plan or the Emergency Plan Implementing Procedures.

Any questions or concerns pertaining to this revision please call Mike Thorne, Emergency Planning Manager at 864-885-3210.

By copy of this letter, two copies of this revision are being provided to the NRC, Region II, Atlanta, Georgia.

Very truly yours,

MRR-037

.Cot W. R. McCollum, Jr.

VP, Oconee Nuclear Site

xc: (w/2 copies of attachments)
Mr. Luis Reyes,
Regional Administrator, Region II
U. S. Nuclear Regulatory Commission
61 Forsyth St., SW, Suite 24T23
Atlanta, Georgia 30303

w/copy of attachments Mr. Steven Baggett Rockville, Maryland

(w/o Attachments, Oconee Nuclear Station)
NRC Resident Inspector
M. D. Thorne, Manager, Emergency Planning

June 6, 2000

OCONEE NUCLEAR SITE

SUBJECT: Emergency Plan Implementing Procedures Volume B, Revision 2000-04

Please make the following changes to the Emergency Plan, Volume B by following these instructions.

REMOVE

ADD

Cover Sheet Rev. 2000-04

Cover	Sh	eet	Rev	ν.	2	000) – ()3	
Table	of	Cont	ent	s	pa	ıge	1	&	2
CP/1&2	/A/	2002	2/00)5	-	12/	29	9/9	99
CP/3/A	./20	002/0	05	_	12	/29	9/9	9	
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Radiation Protection Manual 11.4 - 09/08/98 Table of Contents page 1 & 2 CP/1&2/A/2002/005 - 05/30/2000 CP/3/A/2002/005 - 05/23/2000 RP/0/B/1000/027 - 05/30/2000 Radiation Protection Manual 11.4 - 06/05/2000



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LM-O-P-003A	Determination of Boron Using The Mettler DL40GP - (06/18/98)
Chemistry Lab LM-O-P003C	Determination Of Boron By Manual Colorimetric Titration - (11/18/96)
Chemistry Lab LM-O-P919	Boron Analysis by Mettler DL 58 Boron Titration – (10/26/99)
CP/1/A/2002/004C	Operating Procedure for the Post Accident Liquid Sampling System (PALSS) - (12/16/99)
CP/1&2/A/2002/005	Post Accident Caustic Injection into the Low Pressure Injection System - (05/23/00)
CP/2/A/2002/004C	Operating Procedure for the Post Accident Liquid Sampling System (PALSS) - (12/16/99)
CP/3/A/2002/004C	Operation Procedure for Operation of the Post-Accident Liquid Sampling System (PALSS) - (12/16/99)
CP/3/A/2002/005	Post Accident Caustic Injection into the Low Pressure Injection System - (05/23/00)
HP/0/B/1009/009	Procedure for Determining The Inplant Airborne Radioiodine Concentration During Accident Conditions - (12/03/97)
HP/0/B/1009/012	Distribution of Potassium Iodide Tablets In The Event Of A Radioiodine Release - (06/15/99)
HP/0/B/1009/015	Procedure for Sampling and Quantifying High Level Gaseous Radioiodine And Particulate Radioactivity - (06/16/99)
HP/0/B/1009/016	Procedure for Emergency Decontamination of Personnel and Vehicles On-Site And From Off-Site Remote Assembly Area - (12/29/97)
HP/1/A/1009/017	Operating Procedure For Post-Accident Containment Air Sampling System - (08/30/99)
HP/2/A/1009/017	Operating Procedure For Post-Accident Containment Air Sampling System - (08/30/99)
HP/3/A/1009/017	Operating Procedure For Post-Accident Containment Air Sampling System - (08/30/99)
RP/O/B/1000/011	Planned Emergency Exposure - (02/01/94)
RP/0/B/1000/025	Operational Support Center Manager Procedure - (09/02/99)
RP/0/B/1000/027	Re-Entry Recovery Procedure - (05/30/00)

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Safety Services Procedure 2.1 Emergency Response Guidelines - (03/08/00) Post Accident Procedure Use Guidelines - (12/28/99) Emergency Preparedness Plan Activation - (02/28/00) Emergency Plan For Members Of The Work Control Group - (07/30/94) Operations Emergency Response Organization - (03/13/00) Radiation Protection Emergency Response - (09/01/98) Radiation Protection Site Assembly - (06/05/00) Safety Services Emergency Response Procedure 2.1

> Revision 2000-04 June, 2000

· · · · · · · · · · · · · · · · · · ·	Duke Power Company (1) ID No	D. <u>CP/1</u>	&2/A/2002/005
`	PROCEDURE PROCESS RECORD Revi	sion No	14
	PARATION INFORMATION ONLY	Co	ntinuous Use
(2)	Station Oconee Nuclear Station		
(3)	Procedure Title Post Accident Caustic Injection Into the Low Pressure Injection	on Syste	em
(4)	Prepared By Rean Cantrell	_ Date	5/23/00
(5)	Requires 10CFR50.59 evaluation? Yes (New procedure or revision with major changes) No (Revision with minor changes) No (To incorporate previously approved changes)		· ·
(6)	Reviewed By Mil M. (QR)	Date	5/23/00
	Cross-Disciplinary Review By(QR)NA4	Date	5/23/00
	Reactivity Mgmt. Review By(QR)NA 4/4	Date	5/23/00
(7)	Additional Reviews		1 0
	QA Review By	Date	·
	Reviewed By	_ Date	
	Reviewed By	Date	
^8)	Temporary Approval (if necessary)		
	By(SRO/QR)	Date	
	By (QR)	Date	
(9)	Approved By Pick (Ulthe	Date	5/23/08
PER	FORMANCE (Compare with control copy every 14 calendar days while work is being perform	med.)	
(10)	Compared with Control Copy	Date	
	Compared with Control Copy	_· Date	
	Compared with Control Copy	Date	
(11)	Date(s) Performed		
	Work Order Number (WO#)		
CON	IPLETION		
(12)	 Procedure Completion Verification Yes I NA Check lists and/or blanks initialed, signed, dated, or filled in NA, as ap Yes NA Listed enclosures attached? Yes NA Data sheets attached, completed, dated, and signed? Yes NA Charts, graphs, etc. attached, dated, identified, and marked? Yes NA Procedure requirements met? 	opropriat	te?
	Verified By	Date	<u> </u>
(13)	Procedure Completion Approved	Date	
14)	Remarks (Attach additional pages, if necessary)		

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Post Accident Caustic Injection into the Low Pressure Injection System

1. Purpose

NOTE: A control copy of this procedure shall be routed to the Emergency Preparedness Team within 3 working days after any approved changes.

1.1 This procedure is to provide instruction for determining the amount and method of caustic addition into the LPI System during a LOCA.

1.2 Principle

Caustic is injected into the LPI System during a LOCA to neutralize the borated water used in the Reactor Building Emergency Spray System to pH 7.0 - 8.0. The neutralization of the boric acid with caustic results in the formation of the salt sodium tetraborate. This reaction of a very weak acid with a strong base is shown below:

 $4H_3BO_3 + 2NaOH \rightarrow Na_2B_4O_7 + 7H_2O_7$

The neutralization will inhibit the generation of hydrogen gas and promote a higher partition factor for iodine.

2. Limits and Precautions

- 2.1 The following safety equipment shall be worn when connecting/disconnecting caustic tote bins:
 - 2.1.1 Chemical goggles
 - 2.1.2 Face shield
 - 2.1.3 Corrosive resistant suit, neoprene or chemrel
 - 2.1.4 Corrosive resistant boots, neoprene or PVC
 - 2.1.5 Corrosive resistant gloves, neoprene or PVC
- 2.2 Verify eyewash station and safety shower are operable prior to connecting/disconnecting caustic tote bins.
- 2.3 Chemical hazards shall be known prior to use. For additional information refer to the MSDS sheets.
- 2.4 Under accident conditions, valve alignments shall <u>NOT</u> be made and injection shall <u>NOT</u> begin without prior authorization from the Operations Emergency Coordinator <u>OR</u> the Technical Support Center (TSC)/Operational Support Center (OSC)!

- **NOTE:** An initial caustic add of 15 inches will neutralize an RCS inventory of 80,000 gallons with a boron concentration of 1800 ppm. This is a conservative initial add to allow immediate response to a large break LOCA.
 - 2.5 An initial caustic add of 15 inches can be made without performing CSM 5.2, Enclosure 6.3 (Caustic Addition Calculations).
 - 2.6 In the event of a caustic spill, call 4911.
 - 2.7 ITS 5.4.1.a and SLC 16.13.7 require that pH be measured <u>AND</u> that the addition of caustic to Reactor Coolant commence within 30 minutes <u>AFTER</u> switchover to Recirculation Mode of Core Cooling to adjust the pH to a range of 7.0 to 8.0 <u>WITHIN</u> 24 hours.

During recirculation mode, long-term core cooling is provided by injection of water from the Reactor Building Emergency Sump to the core by the Low Pressure Injection (LPI) pumps (1,2,3 LP-19 and 1,2,3 LP-20 are open). Switchover to recirculation mode is accomplished with minimal level in the BWST.

2.8 The following safety and caustic addition equipment is stored in the brown storage container located in the Auxiliary Building, Unit 1 & 2 Chemical Addition Area.

Goggles	Boots	Tape Measure
Face shield	Stainless Steel Flex	Flashlight
Corrosive suit	Hose	Bung Wrench
Gloves	Tank to valve adapter	

- 2.9 Keys to the brown storage container are stored with the caustic addition procedures in the OSC Chemistry Emergency Procedure Files and in the fireproof cabinet located in the Primary Chemistry lab office. All personnel in Primary Chemistry and Radwaste have also been issued individual keys.
- 2.10 Steps preceded with "□" (immediately to the left of the step) are check off steps, and should be checked off as completed.
- 2.11 Steps preceded by bullets (•) may be performed in any sequence. Numbered steps may only be performed out of sequence **IF** reviewed and approved by a Primary Staff person and one other individual who are familiar with this procedure (see NSD 704).

- 2.12 Independent Verification (designated by two sign-off steps) is a documented check by a second individual which helps to ensure the correct condition or position of plant components. Separate Verification (designated by SV) ensures individuals act separately and independently. Double Verification (designated by DV) ensures the "doer" and "verifier" independently decide that an action is correct prior to the "doer" performing the action. The "verifier" shall use a "hands-on" approach to verify the action(s) of the "doer".
- 2.13 Power to the caustic addition pump is provided through 1XL located near the LPI hatch area. For power supply diagram, see Enclosure 5.6.

3. Procedure

3.1 Upon notification from Operations Emergency Coordinator <u>OR</u> TSC / OSC take the following actions to align the caustic addition system to the appropriate unit:

NOTE: The following steps may be performed simultaneously to conserve time.

- ☐ Mark the current liquid level directly on the translucent tote bin container.
- ☐ Measure down from the liquid level mark 14 inches and mark this level directly on the tote bin.
- ☐ <u>IF</u> necessary, move the tote bin into position and connect the bin discharge to the Swagelock quick-connect fitting upstream of valve 1CA-36 (Caustic Pump Suction Tell Tale) (Bottom of 1&2 Caustic Mix Tank downstream of CA-35, Elev 783) as follows:
 - □ Remove dust cover from swagelock fitting on tote bin.
 - Remove dust cover from swagelock fitting at CA-36 (Caustic Pump Suction Tell Tale) (Bottom of 1&2 Caustic Mix Tank downstream of CA-35, Elev 783).
 - □ Connect stainless steel flex hose to these fittings.
- □ 3.1.1 For Unit 1 <u>only</u>, make valve alignments per Enclosure 5.1 to allow caustic injection into the Low Pressure Injection (LPI) pump suction on Unit 1.
- □ 3.1.2 For Unit 2 <u>only</u>, make valve alignments per Enclosure 5.2 to allow caustic injection into the Low Pressure Injection (LPI) pump suction on Unit 2.
- \Box 3.1.3 Vent the caustic tote bin by removing the tote bin fill cap.
- \Box 3.1.4 Open the caustic tote bin outlet valve.

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 \Box 3.1.5 Notify Operations **OR** the OSC (if activated) that valve alignments for caustic injection are complete and ready to be initiated. Operations or OSC Notified Date/Time 1 □ 3.1.6 Start the caustic addition pump at maximum flow setting. The caustic pump switch is located on the Chemical Addition Control Panel. The maximum pump capacity is approximately 2 gallons per minute. CAUTION: The caustic pump has an average pump rate of 1.2 gallons per minute. To pump the initial setting of 15 inches will require 1.5 hours. A calculated volume should be initiated and completed within 30 minutes on turning the caustic pump on. □ 3.1.7 Calculate the total amount of caustic (in gallons) to be added for the neutralization of the borated water added to the system by using CSM 5.2. \Box 3.1.8 Convert gallons from Step 3.1.7 to inches (in the 350 gallon tote bin) by dividing the number of gallons to be added by 8.1. Record the values below: Gallons to be added Inches to be added from the tote bin \Box 3.1.9 Mark the calculated liquid level directly on the tote bin by measuring down from the original "current liquid level" mark made in Step 3.1. NOTE: Use low dose waiting area as possible during addition \Box 3.1.10 WHEN the caustic tote bin level reaches the desired level (as marked in Step 3.1) **OR** WHEN the caustic tote bin is empty, STOP caustic addition pump using the switch located on the Chemical Addition Control Panel. . . \Box 3.1.11 Close tote bin outlet valve. □ 3.1.12 Close CA-36 (Caustic Pump Suction Tell Tale) (Bottom of 1&2 Caustic Mix Tank downstream of CA-35, Elev 783). □ 3.1.13 Record time and volume added on Enclosure 5.5. □ 3.1.14 **IF** necessary, replace the caustic tote bin as follows: \Box 3.1.14.1 Replace tote bin fill cap. □ 3.1.14.2 Disconnect empty tote bin from swagelock fitting on stainless flex hose.

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- □ 3.1.14.3 <u>IF</u> necessary, move tote bins and remove dust cover from swagelock fitting on new tote bin.
- \Box 3.1.14.4 Connect stainless flex hose to the new tote bin.
- \square 3.1.14.5 **IF** pumping is to continue, mark the tote bin per Section 3.1 for the amount to be added from the new tote bin and go to Step 3.1.3.
- □ 3.1.15 Notify OSC that caustic addition to the LPI is complete and no further additions are in progress at this time.

OSC Notified _____ Date/Time ____/

- □ 3.1.16 After caustic addition is complete, allow LPI recirculation time of at least 2 hours.
- □ 3.1.17 <u>WHEN</u> authorized by the TSC/OSC, have sample taken (per appropriate procedure) to determine the resultant pH of the reactor coolant.
- \Box 3.1.18 **IF** pH is < 7.0:
 - Calculate (refer to Chemistry Section Manual Section 5.2) the amount of caustic (in gallons) to be added to complete the neutralization of the borated water added to the system.
 - Convert this number to inches (in the 350 gallon tote bin) by dividing the number of gallons to be added by 8.1 gallons/inch.
 - Record the values below:

Gallons to be added: _____ Inches to be added from tote bin: _____

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- \Box 3.1.19 **IF** pH is > 7.0, go to Step 3.1.23.
- \Box 3.1.20 Mark the current liquid level directly on the translucent tote bin container.
- □ 3.1.21 Measure down from this mark the number of inches calculated in Step 3.1.18 above. Mark this level directly on the tote bin.
- □ 3.1.22 Repeat Steps 3.1.1 through 3.1.19 until all necessary caustic (as determined by TSC/OSC) has been added.

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- □ 3.1.23 After all necessary caustic has been added and upon authorization from the TSC/OSC, return the system to normal as follows:
 - \Box 3.1.23.1 Replace tote bin fill cap.
 - □ 3.1.23.2 Disconnect empty tote bin from swagelock fitting on stainless flex hose.
 - □ 3.1.23.3 For Unit 1 <u>only</u>, make alignments per Enclosure 5.3 to return valves to normal position.
 - □ 3.1.23.4 For Unit 2 <u>only</u>, make alignments per Enclosure 5.3 to return valves to normal position.

4. References

- 4.1 Dwg. No. OFD-110A-1.8 Chemical Addition System (Primary Side Chemical Addition)
- 4.2 Dwg. No. OFD-102A-1.1 and OFD-102A-2.1 Low Pressure Injection System, Borated Water Supply and LPI Pump Suction.
- 4.3 CSM 5.2
- 4.4 ITS 5.4.1.a
- 4.5 SLC 16.13.7

5. Enclosures

- 5.1 Valve Alignment for Caustic Injection on Unit 1
- 5.2 Valve Alignment for Caustic Injection on Unit 2
- 5.3 Normal Valve Alignment for Caustic Injection System on Unit 1
- 5.4 Normal Valve Alignment for Caustic Injection System on Unit 2
- 5.5 Caustic Mixing and Injection Record
- 5.6 Unit 1&2 Caustic Pump Power Supplies

Valve Alignment for Caustic Injection on Unit 1

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Date_____

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DV	Init	Position	Valve No.	Valve Name	Location
		, Closed	2CA-98	Caustic to Unit #2 LP Block Valve (Ops)	Unit 1&2 LPI Hatch Area, AB Rm. 119, Elev 771, Col. T-74
		Closed	1CA-58	Caustic to #1 LP Pump Suction Tell Tale	Unit 1&2 LPI Hatch Area, AB, Elev 771, Col. T-72
		Open	1CA-39	Caustic to Unit #1 LP Block Valve (Ops)	Unit 1&2 LPI Hatch Area, AB Rm 118, Elev 771, Col. T-72
		Open	1CA-62	Caustic to Unit #1 LP Block Valve (Ops)	Unit 1&2 LPI Hatch Area, AB Rm. 119, Elev 771, Col. T-72
		Open	1LP-51	LPI Sample Recirc Isolation Valve (Ops)	Unit 1&2 LPI Hatch Area, AB Rm. 061, Elev 771, Col. T-71
		Open	CA-103	Caustic Recirc Line and Pressure Gauge Block	Downstream of 1&2 Caustic Pump and CA-37, Elev 783, Col. Q-67
		Closed	CA-96	Caustic Recirc Block	Recirc Line tapping off between CA-103 & CA-112 returning to Caustic Mix Tank, Elev 783
		Closed	CA-35	Caustic Pump Suction	Next valve after CA-34 Tank and upstream of Caustic Pump, Elev 783
		Closed	CA-37	Caustic Header to Waste Evap. Feed Tank	First valve downstream of 1&2 Casutic Pump and upsteam of 1CA-39, Elev 783, Col. P-74
		Open	CA-112	Caustic Pump Pressure Gauge Isolation	First valve downstream of PG-27 (Pressure Gauge) behind Caustic Mix Tank on West Wall, Elev 783
		Open	CA-36	Caustic Pump Suction Tell Tale	Bottom of 1&2 Caustic Mix Tank downstream of CA-35, Elev 783

Valve Alignment for Caustic Injection System on Unit 2

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Date_____

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DV	Init	Position	Valve No.	Valve Name	Location
		, Closed	1CA-39	Caustic to Unit #1 LP Block Valve (Ops)	Unit 1&2 LPI Hatch Area, AB Rm 118, Elev 771, Col. T-72
		Closed	2CA-58	Caustic to #2 LP Pump Suction Tell Tale	Unit 1&2 LPI Hatch Area, AB Rm 119, Elev 771, Col. T-74
		Open	2CA-98	Caustic to Unit #2 LP Block Valve (Ops)	Unit 1&2 LPI Hatch Area, AB Rm. 119, Elev 771, Col. T-74
		Open	2CA-63	Caustic to Unit #2 LP Block Valve (Ops)	Unit 1&2 LPI Hatch Area, AB Rm. 119, Elev 771, Col. T-74
	••••••	Open	2LP-51	LPI Sample Recirc Isolation Valve (Ops)	Unit 1&2 LPI Hatch Area, AB Rm. 063, Elev 771, Col. T-71
		Open	CA-103	Caustic Recirc Line and Pressure Gauge Block	Downstream of 1&2 Caustic Pump and CA-37, Elev 783, Col. Q-67
1		Closed	CA-96	Caustic Recirc Block	Recirc Line tapping off between CA-103 & CA-112 returning to Caustic Mix Tank, Elev 783
		Closed	CA-35	Caustic Pump Suction	Next valve after CA-34 Tank and upstream of Caustic Pump, Elev 783
		Closed	CA-37	Caustic Header to Waste Evap. Feed Tank	First valve downstream of 1&2 Casutic Pump and upsteam of 1CA-39, Elev 783, Col. P-74
		Open	CA-112	Caustic Pump Pressure Gauge Isolation	First valve downstream of PG-27 (Pressure Gauge) behind Caustic Mix Tank on West Wall, Elev 783
		Open	CA-36	Caustic Pump Suction Tell Tale	Bottom of 1&2 Caustic Mix Tank downstream of CA-35, Elev 783

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Normal Valve Alignment for Caustic Injection System on Unit 1

Date _____

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DV	Init	Position	Valve No.	Valve Name	Location
		Closed	2CA-98	Caustic to Unit #2 LP Block Valve (Ops)	Unit 1&2 LPI Hatch Area, AB Rm. 119, Elev 771, Col. T-74
		Closed	2CA-63	Caustic to Unit #2 LP Block Valve (Ops)	Unit 1&2 LPI Hatch Area, AB Rm. 119, Elev 771, Col. T-74
		Closed	1CA-58	Caustic to #1 LP Pump Suction Tell Tale	Unit 1&2 LPI Hatch Area, AB, Elev 771, Col. T-72
		Closed	1CA-39	Caustic to Unit #1 LP Block Valve (Ops)	Unit 1&2 LPI Hatch Area, AB Rm 118, Elev 771, Col. T-72
		Closed	1CA-62	Caustic to Unit #1 LP Block Valve (Ops)	Unit 1&2 LPI Hatch Area, AB Rm. 119, Elev 771, Col. T-72
		Closed	1LP-51	LPI Sample Recirc Isolation Valve (Ops)	Unit 1&2 LPI Hatch Area, AB Rm. 061, Elev 771, Col. T-71
		Open	CA-103	Caustic Recirc Line and Pressure Gauge Block	Downstream of 1&2 Caustic Pump and CA-37, Elev 783, Col. Q-67
		Open	CA-97	Caustic Recirc Block	Downstream of CA-96 and upstream of DW-120 on Caustic Mix Tank Recirc Line, Elev 783
		Open	CA-96	Caustic Recirc Block	Recirc Line tapping off between CA-103 & CA-112 returning to Caustic Mix Tank, Elev 783
		Closed	LWD-267	Caustic Tank Outlet Drain	Base of Caustic Mix Tank West Side, Elev 783
		Closed	CA-34	Caustic Mix Tank Outlet	First valve from bottom of Caustic Mix Tank and upstream of Caustic Pump, Elev 783 Col. Q-68
		Closed	CA-35	Caustic Pump Suction	Next valve after CA-34 Tank and upstream of Caustic Pump, Elev 783
		Closed	CA-37	Caustic Header to Waste / RBCE Evap. Feed Tank	First valve downstream of 1&2 Casutic Pump and upsteam of 1CA-39, Elev 783, Col. P-74
		Open	CA-112	Caustic Pump Pressure Gauge Isolation	First valve downstream of PG-27 (Pressure Gauge) behind Caustic Mix Tank on West Wall, Elev 783
		Closed	CA-36	Caustic Pump Suction Tell Tale	Bottom of 1&2 Caustic Mix Tank downstream of CA-35, Elev 783

Normal Valve Alignment for Caustic Injection System on Unit 2

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Date_____

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DV	Init	Position	Valve No.	Valve Name	Location
		Closed	1CA-39	Caustic to Unit #1 LP Block Valve (Ops)	Unit 1&2 LPI Hatch Area, AB Rm 118, Elev 771, Col. T-72
		Closed	1CA-62	Caustic to Unit #1 LP Block Valve (Ops)	Unit 1&2 LPI Hatch Area, AB Rm. 119, Elev 771, Col. T-72
		Closed	2CA-58	Caustic to #2 LP Pump Suction Tell Tale	Unit 1&2 LPI Hatch Area, AB Rm 119, Elev 771, Col. T-74
		Closed	2CA-98	Caustic to Unit #2 LP Block Valve (Ops)	Unit 1&2 LPI Hatch Area, AB Rm. 119, Elev 771, Col. T-74
		Closed	2CA-63	Caustic to Unit #2 LP Block Valve (Ops)	Unit 1&2 LPI Hatch Area, AB Rm. 119, Elev 771, Col. T-74
		Closed	2LP-51	LPI Sample Recirc Isolation Valve (Ops)	Unit 1&2 LPI Hatch Area, AB Rm. 063, Elev 771, Col. T-71
		Open	CA-103	Caustic Recirc Line and Pressure Gauge Block	Downstream of 1&2 Caustic Pump and CA-37, Elev 783, Col. Q-67
		Open	CA-97	Caustic Recirc Block	Downstream of CA-96 and upstream of DW-120 on Caustic Mix Tank Recirc Line, Elev 783
		Open	CA-96	Caustic Recirc Block	Recirc Line tapping off between CA-103 & CA-112 returning to Caustic Mix Tank, Elev 783
		Closed	LWD-267	Caustic Tank Outlet Drain	Base of Caustic Mix Tank West Side, Elev 783
		Closed	CA-34	Caustic Mix Tank Outlet	First valve from bottom of Caustic Mix Tank and upstream of Caustic Pump, Elev 783 Col. Q-68
		Closed	CA-35	Caustic Pump Suction	Next valve after CA-34 Tank and upstream of Caustic Pump, Elev 783
		Closed	CA-37	Caustic Header to Waste / RBCE Evap. Feed Tank	First valve downstream of 1&2 Casutic Pump and upsteam of 1CA-39, Elev 783, Col. P-74
		Open	CA-112	Caustic Pump Pressure Gauge Isolation	First valve downstream of PG-27 (Pressure Gauge) behind Caustic Mix Tank on West Wall, Elev 783
		Closed	CA-36	Caustic Pump Suction Tell Tale	Bottom of 1&2 Caustic Mix Tank downstream of CA-35, Elev 783

	Enclosure 5.5					
	Caustic Mixing and Injection Record					
Date/Time of	f Injection	Gal NaOH				
Landon (1997)						
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Unit 1 & 2 Caustic Pump Power Supplies

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NOTE: Operations alternates the power logic as outlined. Verification will be required to establish which alignment is in use at the time of question.



(R06-97		CD	314120021005
-1	Duke Power Company (I) ID №. <u>CP</u>	12
	PROCEDURE PROCESS RECORD	Revision No _	ntinuous Use
A RI	EPARATION INFORMATION UNLY		miniuous Ose
(2)	Station Oconee Nuclear Station		
(3)	Procedure Title Post Accident Caustic Injection Into the Low Pressure In	ijection Syst	em
(4)	Prepared By Lean Cantrell	Date	5/3/00
(5)	Requires 10CFR50.59 evaluation?		·
	Yes (New procedure or revision with major changes)		
	 No (Revision with minor changes) No (To incorporate previously approved changes) 		
(6)	Reviewed By $M = M = (OR)$, Date	5/23/00
	Cross-Disciplinary Review By (OR)NA	Mby Date	5/23/08
	Reactivity Mgmt. Review By (OR)NA	July / Date	5/23/00
(7)	Additional Reviews	t	
	QA Review By	Date	
	Reviewed By	Date	
	Reviewed By	Date	
(8)	Temporary Approval (if necessary)		
,	By (SRO/O	R) Date	
	By (OR)	Date	
(9)	Approved By Pick (unh	Date	s/zaloa
PEF	RFORMANCE (Compare with control copy every 14 calendar days while work is being p	erformed.)	• • • • • • • • • • • • • • • • • • •
(10)	Compared with Control Copy	Date	
	Compared with Control Copy	Date	
	Compared with Control Copy	Date	
(11)	Date(s) Performed		
	Work Order Number (WO#)		
CO	MPLETION		
(12)	Procedure Completion Verification		
	Yes NA Check lists and/or blanks initialed, signed, dated, or filled in NA	as appropria	te?
	□ Yes □ NA Listed enclosures attached? □ Yes □ NA Data sheets attached, completed, dated, and signed?		
	☐ Yes ☐ NA Charts, graphs, etc. attached, dated, identified, and marked?		
	\Box Yes \Box NA Procedure requirements met?		
	Verified By	Date	·····
(13)	Procedure Completion Approved	Date	
(4)	Remarks (Attach additional pages, if necessary)		

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Post Accident Caustic Injection into the Low Pressure Injection System

1. Purpose

NOTE: A control copy of this procedure shall be routed to the Emergency Preparedness Team within 3 working days after any approved changes.

1.1 This procedure is to provide instruction for caustic addition into the LPI System during a Loss of Coolant Accident. (LOCA)

1.2 Principle

Caustic is injected into the LPI System during a LOCA to neutralize the borated water used in the Reactor Building Emergency Spray System to pH 7.0 - 8.0. The neutralization of the boric acid with caustic results in the formation of the salt sodium tetraborate. This reaction of a very weak acid with a strong base is shown below:

 $4H_3BO_3 + 2NaOH \longrightarrow Na_2B_4O_7 + 7H_2O_7$

The neutralization will inhibit the generation of hydrogen gas and promote a higher partition factor for iodine.

2. Limits and Precautions

- 2.1 The following safety equipment shall be worn when connecting/disconnecting caustic tote bins:
 - 2.1.1 Chemical goggles
 - 2.1.2 Face shield
 - 2.1.3 Corrosive resistant suit, neoprene or chemrel
 - 2.1.4 Corrosive resistant boots, neoprene or PVC
 - 2.1.5 Corrosive resistant gloves, neoprene or PVC
- 2.2 Verify eyewash station and safety shower are operable prior to connecting/disconnecting caustic tote bins.
- 2.3 Chemical hazards shall be known prior to use. For additional information, refer to the MSDS sheets.

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- 2.4 Under accident conditions, valve alignments shall <u>NOT</u> be made and injection shall <u>NOT</u> begin without prior authorization from the Operations Emergency Coordinator <u>OR</u> the Technical Support Center (TSC) / Operational Support Center (OSC)!
- **NOTE:** An initial caustic add of 15 inches will neutralize an RCS inventory of 80,000 gallons with a boron concentration of 1800 ppm. This is a conservative initial add to allow immediate response to a large break LOCA.
 - 2.5 An initial caustic add of 15 inches can be made without performing CSM 5.2, Enclosure 6.3 (Caustic Addition Calculations).
 - 2.6 In the event of caustic spill, call 4911.
 - 2.7 ITS 5.4.1.a and SLC 16.13.7 require that pH be measured <u>AND</u> that the addition of caustic to Reactor Coolant commence within 30 minutes <u>AFTER</u> switchover to recirculation mode of core cooling to adjust pH to a range of 7.0 to 8.0 <u>WITHIN</u> 24 hours.

During recirculation mode, long-term core cooling is provided by injection of water from the Reactor Building Emergency Sump to the core by the Low Pressure Injection (LPI) pumps (1,2,3 LP-19 and 1,2,3 LP-20 are open). Switchover to recirculation mode is accomplished with minimal level in the BWST.

2.8 The following safety and caustic addition equipment is stored in the brown storage container located in the Auxiliary Building, Unit 1 & 2 Chemical Addition Area:

Goggles	Boots	Flashlight
Face shield	Stainless steel flex hose	Bung Wrench
Corrosive suit	Tape Measure	- :
Gloves	Tank to valve adapter	

- 2.9 Keys to the brown storage container are stored with the caustic addition procedure in the OSC Chemistry Emergency Procedure Files and in the fireproof cabinet located in the Primary Chemistry lab office. All personnel in Primary Chemistry and Radwaste have also been issued individual keys.
- 2.10 Steps preceded with "□" (immediately to the left of the step) are check off steps, and will be checked off as completed.
- 2.11 Steps preceded by bullets (•) may be performed in any sequence. Numbered steps may only be performed out of sequence if reviewed and approved by a Primary Staff person and one other individual who are familiar with this procedure (see NSD 704).

- 2.12 Independent Verification (designated by two sign-off steps) is a documented check by a second individual which helps to ensure the correct condition or position of plant components. Separate Verification (designated by SV) ensures individuals act separately and independently. Double Verification (designated by DV) ensures the "doer" and "verifier" independently decide that an action is correct prior to the "doer" performing the action. The "verifier" shall use a "hands-on" approach to verify the actions of the "doer".
- 2.13 Power to the caustic addition pump is provided through 3XL located near the LPI Hatch Area. For power supply diagram, see Enclosure 5.4.

3. Procedure

3.1 Upon notification from Operations Emergency Coordinator <u>OR</u> TSC / OSC, take the following actions to align the caustic addition system to the appropriate unit:

- □ Mark the current liquid level directly on the translucent tote bin container.
- □ Measure down from the liquid level mark 14 inches and mark this level directly on the tote bin.
- □ <u>IF</u> necessary, move the tote bin into position and connect the bin discharge to the Swagelock quick-connect fitting upstream of valve 3CA-36 (Caustic Pump Suction Tell Tale) (AB Elev 771 at base of Unit 3 NaOH pump) as follows:
 - □ Remove dust cover from swagelock fitting on tote bin.
 - □ Remove dust cover from swagelock fitting at 3CA-36 (Caustic Pump Suction Tell Tale) (AB Elev 771 at base of Unit 3 NaOH pump).
 - □ Connect stainless steel flex hose to these fittings.
- □ 3.1.1 Make valve alignments per Enclosure 5.1 to allow caustic injection into the Low Pressure Injection (LPI) pump suction on Unit 3.
- \Box 3.1.2 Vent the caustic tote bin by removing the tote bin fill cap.
- \Box 3.1.3 Open the caustic tote bin outlet valve.
- □ 3.1.4 Notify Operations <u>OR</u> the OSC (if activated) that valve alignments for caustic injection are complete and ready to be initiated.

Operations or OSC Notified _____ Date/Time ____/

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□ 3.1.5 Start the caustic addition pump at maximum flow setting. The caustic pump switch is located on the Chemical Addition Control Panel. The maximum pump capacity is approximately 2 gallons per minute.

CAUTION: The caustic pump has an average pump rate of 1.2 gallons per minute. To pump the initial setting of 15 inches will require 1.5 hours. A calculated volume should be initiated and completed within 30 minutes on turning the caustic pump on.

- □ 3.1.6 Calculate the total amount of caustic (in gallons) to be added for the neutralization of the borated water added to the system by using CSM 5.2.
- □ 3.1.7 Convert gallons from Step 3.1.6 to inches (in the 350 gallon tote bin) by dividing the number of gallons to be added by 8.1. Record the values below:
 - Gallons to be added ______ Inches to be added from the tote bin _____
- □ 3.1.8 Mark the calculated liquid level directly on the tote bin by measuring down from the original "current liquid level" mark made in Step 3.1.

NOTE:	Use low dose waiting area as possible during addition			
	3.1.9	<u>WHEN</u> the caustic tote bin level reaches the desired level (as marked in Step 3.1) <u>OR WHEN</u> the caustic tote bin is empty, stop caustic addition pump using the switch located on the Chemical Addition Control Panel.		
	3.1.10	Close tote bin outlet valve.		
	3.1.11	Close 3CA-36 (Caustic Pump Suction Tell Tale) (AB Elev 771 at base of Unit		

 \Box 3.1.12 Record time and volume added on Enclosure 5.3.

3 NaOH pump).

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□ 3.1.13 IF necessary, replace the caustic tote bin as follows:

- \Box 3.1.13.1 Replace tote bin fill cap.
- □ 3.1.13.2 Disconnect empty tote bin from swagelock fitting on stainless flex hose.
- □ 3.1.13.3 IF necessary, move tote bins and remove dust cover from swagelock fitting on new tote bin.
- \Box 3.1.13.4 Connect stainless flex hose to the new tote bin.
- $\square 3.1.13.5 \qquad \underline{IF} \text{ pumping is to continue, mark the tote bin per Section 3.1 for the amount to be added from the new tote bin and go to Step 3.1.2.$
- □ 3.1.14 Notify OSC caustic addition to U-3 LPI is complete and no further additions are in progress.

OSC Notified _____ Date/Time ___ /

- □ 3.1.15 After caustic addition is complete, allow LPI recirculation time of 2 hours.
- \square 3.1.16 <u>WHEN</u> authorized by the TSC/OSC, have sample taken (per appropriate procedure) to determine the resultant pH of the reactor coolant.
- \Box 3.1.17 **<u>IF</u>** pH is < 7.0:
 - Calculate (refer to Chemistry Section Manual Section 5.2) the amount of caustic (in gallons) to be added to complete the neutralization of the borated water added to the system.
 - Convert this number to inches (in the 350 gallon tote bin) by dividing the number of gallons to be added by 8.1 gallons/inch.

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• Record the values below:

Gallons to be added: _____ Inches to be added from tote bin: _____

- \Box 3.1.18 **IF** pH is > 7.0, go to Step 3.1.22.
- \Box 3.1.19 Mark the current liquid level directly on the translucent tote bin container.
- □ 3.1.20 Measure down from this mark the number of inches calculated in Step 3.1.17 above. Mark this level directly on the tote bin.

- □ 3.1.21 Repeat Steps 3.1.1 through 3.1.18 until all necessary caustic (as determined by TSC/OSC) has been added.
- □ 3.1.22 After all necessary caustic has been added and upon authorization from the TSC/OSC, return the system to normal as follows:
 - \Box 3.1.22.1 Replace tote bin fill cap.
 - □ 3.1.22.2 Disconnect empty tote bin from swagelock fitting on stainless flex hose.
 - □ 3.1.22.3 Make alignments per Enclosure 5.2 to return valves to normal position.

4. References

- 4.1 Dwg. No. OFD-110A-3.8 Chemical Addition System (Primary Side Chemical Addition)
- 4.2 Dwg. No. OFD-102A-3.1, Low Pressure Injection System, Borated Water Supply and LPI Pump Suction.
- 4.3 CSM 5.2
- 4.4 ITS 5.4.1.a
- 4.5 New SLC 16.13.7

5. Enclosures

- 5.1 Valve Alignment for Caustic Injection on Unit 3
- 5.2 Normal Valve Alignment for Caustic Injection System on Unit 3
- 5.3 Caustic Mixing and Injection Record
- 5.4 Unit 3 Caustic Pump Power Supplies

Valve Alignment for Caustic Injection on Unit 3

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Date____

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DV	Init	Position	Valve No.	Valve Name	Location
	;	Open	3CA-103	Caustic Recirc Block	AB Rm. 157, Elev 771, hallway outside Unit 3 SS Filter Rm.
		Closed	3CA-96	Caustic Recirc Block	AB Elev 771 at Unit 3 NaOH Pump Discharge
		Closed	3CA-35	Caustic Pump Suction	AB Elev 771 at base of Unit 3 NaOH pump
		Open	3CA-36	Caustic Pump Suction Tell Tale	AB Elev 771 at base of Unit 3 NaOH pump
		Open	3CA-112	Caustic Pump Pressure Gauge Isolation	AB Elev 771 adjacent to but west of Unit 3 NaOH mix tank
		Closed	3CA-58	Caustic to #3 LP Pump Suction Tell Tale	AB Rm. 157, Elev 783 Col. Q-91, Unit 3 SS Filter Rm.
		Open	3CA-39	Caustic to Unit #3 LP Block (OPS)	AB Hall, Elev 783 Col. Q-91, outside 3 SS Filter Rm.
		Open	3CA-62	Caustic to Unit #3 LP Block (OPS)	AB Rm. 252, Elev 783 Col. Q-91outside Unit 3 SS Filter Rm.
		Open	3LP-51	LPI Sample Recirc. Isolation Valve (Ops)	AB Rm. 252, Elev 783 Col. R-90 outside Cooler Room

Normal Valve Alignment for Caustic Injection System on Unit 3

Date____

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DV	Init	Position	Valve No.	Valve Name	Location
-		Open	3CA-103	Caustic Recirc Block	AB Rm. 157, Elev 771, hallway outside Unit 3 SS Filter Rm.
		Open	3CA-97	Caustic Recirc Block	AB Elev 771 overhead at Unit 3 NaOH mix tank
		Open	3CA-96	Caustic Recirc Block	AB Elev 771 at Unit 3 NaOH Pump Discharge
	· ·	Closed	3LWD-267	Caustic Tank Outlet Drain	AB Elev 771 at tank drain pipe of Unit 3 NaOH pump
		Closed	3CA-34	Caustic Mix Tank Outlet	AB Elev 771 at base of Unit 3 NaOH pump
		Closed	3CA-35	Caustic Pump Suction	AB Elev 771 at base of Unit 3 NaOH pump
		Closed	3CA-36	Caustic Pump Suction Tell Tale	AB Elev 771 at base of Unit 3 NaOH pump
		Open	3CA-112	Caustic Pump Pressure Gauge Isolation	AB Elev 771 adjacent to but west of Unit 3 NaOH mix tank
		Closed	3CA-58	Caustic to #3 LP Pump Suction Tell Tale	AB Rm. 157, Elev 783 Col. Q-91, Unit 3 SS Filter Rm.
		Closed	3CA-39	Caustic to Unit #3 LP Block (OPS)	AB Hall, Elev 783 Col. Q-91, outside 3 SS Filter Rm.
		Closed	3CA-62	Caustic to Unit #3 LP Block (OPS)	AB Rm. 252, Elev 783 Col. Q-91outside Unit 3 SS Filter Rm.
		Closed	3LP-51	LPI Sample Recirc. Isolation Valve (Ops)	AB Rm. 252, Elev 783 Col. R-90 outside Cooler Room

Caustic Mixing and Injection Record

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Date/Time of Injection	Gal. NaOH
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Unit 3 Caustic Pump Power Supplies

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NOTE: Operations alternates the power logic as outlined. Verification will be required to establish which alignment is in use at the time of question.



	INFORMATION ONLY	Duke Power Company PROCEDURE PROCESS RECO	(1) ID No. RD Revisio	<u>RI</u> on No	<u>2</u> 2
	PARATION				
	Station	OCONEE NUCLEAR STATION			
िर	Procedure Title	Reentry Recovery Procedure		·	······
(4)	Prepared By	Coluit Daylor		Date	5/22/200
(5)	Requires 10CFR50.59 eval Yes (New procedure No (Revision with n No (To incorporate)	uation? or revision with major changes) ninor changes) previously approved changes)			~, ~, ~
(6)	Reviewed By Ray	Vaterman	(QR)	Date	5/23-2000
	Cross-Disciplinary Review	Ву	(QR)NA LOW	Date	5/23-2000
	Reactivity Mgmt. Review 1	Ву	_(QR)NA	Date	1
(7)	Additional Reviews				
	QA Review By			Date	
	Reviewed By			Date	• • • • • • • • • • • • • • • • • • • •
	Reviewed By			Date	
(8)	Temporary Approval (if new	cessary)			· · · · · · · · · · · · · · · · · · ·
	By		(SRO/QR)	Date	
\smile	By		(QR)	Date	
(9)	Approved By ML	Thomas		Date	5-30-2000
PER	RFORMANCE (Compare w	ith control copy every 14 calendar days while work	is being performe	ed.)	
(10)	Compared with Control Co	ру		Date	
	Compared with Control Co	РРУ	,	Date	
	Compared with Control Co	рру		Date	
(11)	Date(s) Performed				
	Work Order Number (WO	#)			
CON	MPLETION				
(12)	Procedure Completion Ver Yes NA Check li Yes NA Listed er Yes NA Data she Yes NA Charts, g Yes NA Procedur	ification sts and/or blanks initialed, signed, dated, or filled nelosures attached? ets attached, completed, dated, and signed? graphs, etc. attached, dated, identified, and market re requirements met?	d in NA, as app ed?	ropriat	te?
	Verified By			Date	
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	Duke Power Company	Procedure No.
	Oconee Nuclear Site	RP/ 0 /B/1000/027
\smile		Revision No.
	Reentry Recovery Procedure	002
	Reference Use	Electronic Reference No.
		OX002WPO

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7.1

Reentry Recovery Procedure

NOTE: This procedure is an implementing Procedure to the Oconee Nuclear Site Emergency Plan and must be forwarded to Emergency Planning within three (3) working days of approval.

1. Symptoms

Emergency conditions have stabilized or no longer exist and the EOF Director has determined that recovery efforts should be started.

2. Immediate Actions

NOTE:	•	The makeup and structure of the recovery organization will be determined by the existing onsite and offsite conditions and may be modified or supplemented as necessary to support the particular circumstances.
	•	Refer to Enclosure 4.1, (Groups For Potential Representation In Recovery Organization) for potential representation in the recovery organization.
	•	Refer to Enclosure 4.2, (Suggested Organizational Structure) for organizational structure.

- 2.1 **IF** Emergency conditions have stabilized or no longer exist, **THEN** The EOF Director and the Emergency Coordinator shall initiate establishment of the recovery organization.
 - 2.1.1 Direct OSC Manager (Outage Manager) to take the lead in re-entry/recovery planning and implementation
 - 2.1.2 Utilize the Alternate OSC as the working space for the Onsite Recovery Organization if available and habitable.
 - 2.1.3 Utilize the EOF as the working space for the Offsite Recovery Organization.
- 2.2 Outline the responsibilities for each group identified in the recovery organization pursuant to the recovery mission.
 - 2.2.1 Refer to Enclosure 4.3, (Group Responsibilities To Consider), for additional guidance.
- 2.3 Ensure that consideration is given to existing as well as potential conditions that may be encountered in the affected area(s).

- 2.4 Ensure the following actions are taken prior to reentry as deemed applicable by the Recovery Manager.
 - 2.4.1 Perform a visual inspection of site areas and equipment.
 - 2.4.2 Upon evaluation of the radiological condition, site management will determine what procedures are required to restore the site to a normal status.
- 2.5 Consult the following documentation for initiation of recovery operations pertaining to Radiological concerns.
 - 2.5.1 TSC RP/0/B/1000/019, (Technical Support Center Emergency Coordinator Procedure).
 2.5.2 EOF RP/0/B/1000/020, (Emergency Operations Facility Director Procedure).
 2.5.3 JIC SR/0/B/2000/001 (Standard Procedure for Public Affairs Response to the Emergency Operations Facility). RP/0/B/1000/28 (Communications and Community Relations World of Energy Emergency Response Plan).
- 2.6 Consult the following documentation for initiation of recovery operations pertaining to Hazardous Wastes/Materials.
 - 2.6.1 Site Directive 4.3.1, (Solid and Hazardous Waste Management Program)
 - 2.6.2 RP/0/B/1000/017, (Spill Response)

3. Subsequent Actions

- 3.1 Consider the following guidance, as applicable, when recovering from a serious emergency.
 - 3.1.1 The protection of the public health and safety is the foremost consideration in formulating recovery plans.
 - 3.1.2 Keep the public officials informed of the recovery plans so they can carry out their responsibilities to the public.
 - 3.1.3 Provide periodic information to the news media for dissemination to the public regarding recovery plans and progress made.
 - 3.1.4 Provide periodic status reports to all company employees and to government and industry representatives.

3.2 IF A total population exposure estimate update is required, THEN The Radiological Assessment Group at the EOF will perform this calculation.

3.2.1 Ensure the Recovery Manager is providing information to appropriate State agencies to facilitate the decision to relax Protective Actions for the public if applicable.

4. Enclosures

- 4.1 Groups For Potential Representation In Recovery Organization
- 4.2 Suggested Organizational Structures
- 4.3 Group Responsibilities To Consider

Groups For Potential Representation In Recovery Organization

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1. Groups

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Operations	Work Control
Mechanical Maintenance	I&E Maintenance
Radiation Protection	Chemistry/Radwaste
Engineering	Commodities & Facilities
Security	K-Mac/Bartlett
Safety Assurance	ESS
Community Relations	Safety
Business Management	Framatome
Training	Corporate Office
Federal/State/Local Agencies	INPO

Suggested Organizational Structure

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1. Onsite Recovery Organization

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Suggested Organizational Structure

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2. Offsite Recovery Organization

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OFFSITE RECOVERY ORGANIZATION



Group Responsibilities To Consider

1. OPERATIONS

- ☐ Identify critical equipment repairs necessary to increase defense in depth to provide core cooling and to prevent the release of radioactive material.
- □ Communicate to the recovery scheduling group those items identified above.
- Coordinate needed changes in Keowee and Jocassee lake levels with the Duke Power System Coordinator as applicable.
- □ Identify and communicate long term power requirements from Lee Steam Station gas turbines.
- □ Identify special needs for Keowee Hydro Station as applicable.

2. RADIATION PROTECTION

Review all available radiation survey data.

- \Box Determine site area(s) potentially affected by radiological hazards.
- ☐ Review radiation dose history of all personnel scheduled to participate in recovery operations. Determine the need for additional personnel. The radiation doses to employees and other radiation workers should be kept as low as reasonably achievable.
- □ Review the adequacy of radiation survey equipment available for use. Determine the need for additional equipment and a source of procurement.
- □ Preplan team activities, including areas to be surveyed, anticipated radiation levels, survey equipment required, protective clothing requirements, access control procedures, dose control procedures, and communication capabilities.
- Conduct comprehensive radiation survey of site facilities and define all radiological problem areas.
- □ Isolate and post all radiation and contaminated areas with appropriate warning signs.
- □ All radiological conditions discovered and existing in the facility, as determined by the reentry survey, will be evaluated by site management.
- Personnel radiation dose will be closely controlled and documented.
- □ Radiological conditions at the scene of the emergency should be properly defined, barricaded, and posted with appropriate signs.

Group Responsibilities To Consider

RADIATION PROTECTION (continued)

Appropriate actions will be taken to ensure emergency personnel and equipment are properly monitored and controlled prior to leaving the radiation controlled area.

3. MAINTENANCE

□ Identify resources, both labor and materials, necessary to perform the identified critical equipment repairs.

4. COMMODITIES & FACILITIES

- □ Identify the necessary actions required for procurement, delivery, and receipt of materials associated with the recovery operation.
- □ Coordinate material receipt with Security.
- Determine and set up accommodations for NRC to provide review of recovery operations.
- Determine any special communication needs and secure support.

5. SECURITY

- Establish long term crowd control measures.
- □ Set up receipt and departing vehicle controls. Work closely with the Commodities & Facilities representatives for recovery material receipt.

INFORMATION ONLY

Radiation Protection Manual Section 11.4 Approval _________ Original Date ________ Revision Date ________ Emergency Planning *RET*

Oconee Nuclear Station Radiation Protection Site Assembly

1. Purpose

- 1.1 To account for personnel at designated assembly points for the purpose of establishing the Radiation Protection Emergency Response Organization and to evacuate portions of the Protected Area.
- 1.2 This procedure is an Emergency Plan Implementing Procedure (EPIP). It must be forwarded to the Emergency Planning Group within three working days of approval by the responsible group. {PIP 4-093-0701}

2. References

- 2.1 RP/0/B/1000/009, Procedure For Site Assembly
- 2.2 RP/0/B/1000/010, Procedure for Emergency Evacuation / Relocation of Site Personnel
- 2.3 Nuclear System Directive 114, Site Assembly / Site Evacuation

3. Program Description

- 3.1 The Operation Shift Manager is responsible for initiating a Site Assembly. A warble signal will be heard over the Public Address (PA) System and will be accompanied by an announcement.
- 3.2 Radiation Protection personnel shall report to the following locations and shall card in (swipe security badge) during Site Assembly:
 - 3.2.1 Radiation Protection Manager's Office (1st Floor Service Building):
 - Radiation Protection Manager
 - General Supervisors
 - Radiation Protection Staff
 - Administrative Support personnel

3.2.2 Operational Support Center:

3.2.2.1 Shift A, B, C, D, E

3.2.3 Radiation Protection Building:

- Surveillance and Control
- Radioactive Material Control
- Respiratory/Instrument Calibration

3.2.4 Dayshift:

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- **NOTE:** Accountability is defined as actual contact (visual or verbal) during Site Assembly.
 - Field Monitoring Team members typically assemble and report accountability to Administrative Support from the BBA Room when the TSC is activated at the same time Site Assembly is initiated.
 - 3.2.4.1 Administrative Support personnel shall call Security (normally at extension 5050) no later than 20 minutes after the initiation of Site Assembly and leave a message stating their name, department name, accountability, the number of missing personnel, and the names of the missing personnel (If a large number of personnel are missing, names can be obtained later.).
 - 3.2.5 Backshift, Weekends, Holidays:
 - 3.2.5.1 Supervisor or lead person shall report the names of persons missing to Security personnel (normally at extension 5050) within 10 minutes.
 - 3.2.6 Persons working in Radiation Control Areas in protective clothing should leave their work area and go to the appropriate Change Room, swipe their security badge, and contact their Supervisor for further instructions.

3.3 Evacuation of Site Personnel:

- 3.3.1 Site Evacuation is activated only after personnel have been assembled through a Site Assembly.
- 3.3.2 The assistant to the Radiation Protection Manager (or designee) will receive evacuation instructions from the Emergency Coordinator.

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- 3.3.3 When it is determined that the emergency conditions require site evacuation, the Emergency Coordinator shall direct the following to occur:
 - 3.3.3.1 The RPM (or designee) determines the Evacuation/Relocation time for each category and provides the information to the assistant to the RPM in the OSC.
 - 3.3.3.2 The assistant to the RPM (or designee) shall evaluate plant conditions and determine the appropriate evacuation/relocation plan and instructions to be utilized.
 - A. This information will be provided to the TSC Offsite Communicator.
 - B. The assistant to the RPM (or designee) may also enter this information on computer for distribution to Group Evacuation Coordinators at their site assembly locations.
- 3.3.4 Radiation Protection Manager and Supervisors at the OSC will make determination of essential RP personnel required to remain on site and non-essential personnel who will be evacuated:
 - 3.3.4.1 Provide for 24-hour staffing in all affected RP groups prior to evacuating personnel.
- 3.3.5 Radiation Protection Manager and/or assistant to the RP Manager will relay evacuation instructions to site assembly locations.

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- 3.3.6 The Group Evacuation Coordinator or designated person at each site assembly location will verify that affected personnel receive Evacuation/Relocation instructions.
 - 3.3.6.1 The Group Evacuation Coordinator or designated person will also:
 - Coordinate transportation efforts for the group.
 - Notify the TSC Offsite Communicator of any transportation problems.
 - Report the status of Evacuation/Relocation to Group/Division Managers in the TSC/OSC/EOF.
 - Provide the Group/Division Managers with the following information regarding relocated personnel:
 - Phone number in or near area for future notifications.
 - Number of assigned personnel at relocation area.

4. Enclosures

None

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INFORMATION ONLY

Oconee Nuclear Station Radiation Protection Site Assembly

1. Purpose

- 1.1 To account for personnel at designated assembly points for the purpose of establishing the Radiation Protection Emergency Response Organization and to evacuate portions of the Protected Area.
- 1.2 This procedure is an Emergency Plan Implementing Procedure (EPIP). It must be forwarded to the Emergency Planning Group within three working days of approval by the responsible group. {PIP 4-093-0701}

2. References

- 2.1 RP/0/B/1000/009, Procedure For Site Assembly
- 2.2 RP/0/B/1000/010, Procedure for Emergency Evacuation / Relocation of Site Personnel
- 2.3 Nuclear System Directive 114, Site Assembly / Site Evacuation

3. Program Description

- 3.1 The Operation Shift Manager is responsible for initiating a Site Assembly. A warble signal will be heard over the Public Address (PA) System and will be accompanied by an announcement.
- 3.2 Radiation Protection personnel shall report to the following locations and shall card in (swipe security badge) during Site Assembly:
 - 3.2.1 Radiation Protection Manager's Office (1st Floor Service Building):
 - Radiation Protection Manager
 - General Supervisors
 - Radiation Protection Staff
 - Administrative Support personnel

;

3.2.2 Operational Support Center:

3.2.2.1 Shift A, B, C, D, E

3.2.3 Radiation Protection Building:

- Surveillance and Control
- Radioactive Material Control
- Respiratory/Instrument Calibration

3.2.4 Dayshift:

- NOTE: Accountability is defined as actual contact (visual or verbal) during Site Assembly.
 - Field Monitoring Team members typically assemble and report accountability to Administrative Support from the BBA Room when the TSC is activated at the same time Site Assembly is initiated.
 - 3.2.4.1 Administrative Support personnel shall call Security (normally at extension 5050) no later than 20 minutes after the initiation of Site Assembly and leave a message stating their name, department name, accountability, the number of missing personnel, and the names of the missing personnel (If a large number of personnel are missing, names can be obtained later.).
 - 3.2.5 Backshift, Weekends, Holidays:
 - 3.2.5.1 Supervisor or lead person shall report the names of persons missing to Security personnel (normally at extension 5050) within 10 minutes.
 - 3.2.6 Persons working in Radiation Control Areas in protective clothing should leave their work area and go to the appropriate Change Room, swipe their security badge, and contact their Supervisor for further instructions.

3.3 Evacuation of Site Personnel:

- 3.3.1 Site Evacuation is activated only after personnel have been assembled through a Site Assembly.
- 3.3.2 The assistant to the Radiation Protection Manager (or designee) will receive evacuation instructions from the Emergency Coordinator.

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- 3.3.3 When it is determined that the emergency conditions require site evacuation, the Emergency Coordinator shall direct the following to occur:
 - 3.3.3.1 The RPM (or designee) determines the Evacuation/Relocation time for each category and provides the information to the assistant to the RPM in the OSC.
 - 3.3.3.2 The assistant to the RPM (or designee) shall evaluate plant conditions and determine the appropriate evacuation/relocation plan and instructions to be utilized.
 - A. This information will be provided to the TSC Offsite Communicator.
 - B. The assistant to the RPM (or designee) may also enter this information on computer for distribution to Group Evacuation Coordinators at their site assembly locations.
- 3.3.4 Radiation Protection Manager and Supervisors at the OSC will make determination of essential RP personnel required to remain on site and non-essential personnel who will be evacuated:
 - 3.3.4.1 Provide for 24-hour staffing in all affected RP groups prior to evacuating personnel.
- 3.3.5 Radiation Protection Manager and/or assistant to the RP Manager will relay evacuation instructions to site assembly locations.

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- 3.3.6 The Group Evacuation Coordinator or designated person at each site assembly location will verify that affected personnel receive Evacuation/Relocation instructions.
 - 3.3.6.1 The Group Evacuation Coordinator or designated person will also:
 - Coordinate transportation efforts for the group.
 - Notify the TSC Offsite Communicator of any transportation problems.
 - Report the status of Evacuation/Relocation to Group/Division Managers in the TSC/OSC/EOF.
 - Provide the Group/Division Managers with the following information regarding relocated personnel:
 - Phone number in or near area for future notifications.
 - Number of assigned personnel at relocation area.

4. Enclosures

None