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RType H8.24

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PILGRIM NUCLEAR POWER STATION

Procedure No. EP-IP-231

ONSITE RADIATION PROTECTION

Stop
Think
Act
Review

SAFETY RELATED

REVISION LOG

REVISION 6 **Date Originated 1/01**

Pages Affected	Description
12	Change ARM ID numbers to correspond with Control Room labels and rearrange to ease use of form. Update alarm setpoints to be consistent with ARM Calibration Procedure, PNPS 6.5-160. Add statement to circle readings > alarm setpoint.
13	Change PRM monitors to reflect all monitors and rearrange to ease use of form. Add explanation of asterisk.

REVISION 5 **Date Originated 5/00**

Pages Affected	Description
All	Change to reflect Procedure reformat IAW PNPS 1.3.4-1 (revision bars are not shown for reformatting).
5	Change "Nuclear Watch Engineer" to "Operations Shift Superintendent".
6	Add reference to Area Radiation Monitor Form, Process Radiation Monitor Data Form, and Emergency Conferencing System Rad Data Line
7	Add Note which lists various sources of meteorological data.
9	Add "and remaining TSC staff to the EOF".
3,7,11-13	Add "Area Radiation Monitor Data Form" and "Process Radiation Monitor Data Form" to Attachments.

TABLE OF CONTENTS

1.0 PURPOSE

This Procedure establishes responsibilities, guidelines, and references for the Onsite Radiological Supervisor in the control of the onsite radiological emergency response actions.

2.0 REFERENCES

[1] EP-PP-01, "*PNPS Emergency Plan*"

3.0 DEFINITIONS

None

4.0 DISCUSSION

None

5.0 RESPONSIBILITIES

[1] The Onsite Radiological Supervisor is responsible for:

(a) Evaluating and interpreting onsite radiological data during the course of the emergency to:

(1) Assess and direct emergency exposure controls for onsite personnel.

(2) Determine the radiological controls associated with the dispatch of onsite personnel from within the TSC/OSC area.

(3) Determine the need for and inform the Emergency Plant Manager of any conditions which warrant a local or Protected Area evacuation.

(4) Assist and advise technical support personnel on radiological issues.

(5) Determine when plant access restrictions are applicable and ensure contamination control and habitability measures are being followed in all applicable onsite areas.

(b) Directing the briefing, dispatching, and controlling of the Personnel Monitoring Team sent to the designated Assembly Area for a Protected Area evacuation.

(c) Supervising onsite emergency Radiation Protection personnel.

(d) Briefing the Emergency Plant Manager concerning present and projected onsite radiological conditions.

[2] The Radiation Protection Coordinator, the Radiation Protection Engineer, and the Radiation Data Communicators are responsible for assisting the Onsite Radiological Supervisor.

6.0 PROCEDURE

6.1 UPON DECLARATION OF AN EMERGENCY (ALERT CLASSIFICATION OR HIGHER)

[1] The on-shift Radiological Supervisor (or Technician if a Supervisor is not available) will go to the TSC/OSC:

(a) Report to the Operations Shift Superintendent (Emergency Director) in the Control Room or the Emergency Plant Manager, if present.

(b) Assume the responsibility for onsite radiological controls until relieved by the on-call Onsite Radiological Supervisor.

[2] The on-call Onsite Radiological Supervisor will:

(a) Report to the TSC, sign in on the roster board, and start maintaining an event chronology log.

(b) Contact the on-shift RP Supervisor/Technician for a briefing of the emergency situation and activities underway.

(c) Relieve the on-shift RP Supervisor/Technician of the responsibility for onsite radiological controls.

6.2 ACTIVATION

[1] Direct the Radiation Protection Engineer to:

(a) Establish a routine review and assessment of area radiation and effluent monitors (via status board, SPDS, EPIC, ERDS).

(b) Interface with other engineers in the TSC concerning present and projected radiological conditions.

[2] Direct the Radiation Protection Coordinator to:

(a) Ensure habitability is maintained within the OSC/TSC facility and other occupied areas within the plant by conducting radiological surveys as conditions warrant.

(b) Obtain keys from the OSC/TSC key locker and open the OSC radiological equipment supply lockers. Check all instruments for operability and inventory any locker which had a broken seal.

[3] Assign a member of the Radiation Protection staff to ensure all personnel responding to the TSC, OSC, and Control Room without dosimetry are issued a TLD.

NOTE

Sources of meteorological data for the Process Radiation Monitor Data Form include:

1.	220' Met Tower	Control Room
2.	160' Met Tower	Local Indication
3.	VT220 Historical 220' Met Tower Data	EOF Terminal
4.	Air and marine weather radio forecasts	EOF Radio
5.	National Weather Service (Logan)	Telephone
6.	The Weather Channel	EOF Cable Television
7.	Visual estimation	Affected Area

[4] Assign one Radiation Data Communicator to the Control Room and one to the TSC to establish communications and track effluent monitor and radiation data utilizing the Area Radiation Monitor Data Form (Attachment 1), the Process Radiation Monitor Data Form (Attachment 2), and the Emergency Conferencing System Radiation Data Line (see Emergency Telephone Directory Section 6.0).

[5] Determine the recent exposure history and respirator qualifications of ERO personnel (through PRORAD, historical files, or by estimation) and distribute as follows:

(a) Provide the Radiation Protection Coordinator with an exposure listing of all OSC supervisory and pool personnel expected to be dispatched.

(b) Provide the RMT Coordinator in the EOF with an exposure listing of all personnel involved in offsite plume tracking and environmental monitoring.

[6] Ensure that an individual exposure record is started for all personnel expected to receive exposure over the course of the emergency. Emergency exposure can be tracked on a PNPS Emergency Dose Card (EP-IP-440 Attachment 1) or other similar record.

[7] Brief the Emergency Plant Manager on present radiological conditions.

[8] Initially verify accountability of the Radiation Protection staff in the TSC by ensuring that all personnel have signed in on the TSC roster board (and thereafter maintain continuous accountability).

[9] Report to the Emergency Plant Manager when the Radiation Protection staff is capable of performing radiological controls activities. The following positions should be staffed in support of emergency activities and functions:

(a) Radiation Protection Engineer (1)

(b) Radiation Data Communicator (2)

6.3 OPERATION

[1] Control onsite personnel exposure, accumulated dose, and the distribution of potassium iodide during the emergency (see EP-IP-440, "*Emergency Exposure Controls*," for specific guidance).

[2] Direct the coordination of the tracking of emergency radiation exposure to ERO personnel dispatched from the OSC. If personnel are cycled between onsite and offsite activities during the course of the emergency, ensure the Offsite Radiological Supervisor provides, and is informed of, personnel accumulated emergency exposures.

[3] Assess the status of current and projected onsite radiological conditions and based upon the circumstances:

(a) Identify areas requiring radiological controls and areas containing potential radiological hazards.

(b) Consider issuing SIDs to facility personnel or placing several SIDs throughout occupied areas of the facilities if radiological conditions warrant.

(c) Consider whether to dispatch a Personnel Monitoring Team to prepare the Assembly Area prior to a Protected Area evacuation or when a Site Area Emergency is declared (see Section 6.4 for specific guidance).

NOTE

Consult with the Emergency Plant Manager concerning any onsite evacuation recommendations.

(d) Determine whether a Protected Area evacuation is necessary and determine the appropriate Assembly Area in accordance with EP-IP-410 (automatically determined and initiated at a Site Area Emergency).

(e) Plan for possible selective onsite building evacuation in the event of a release.

[4] Frequently brief the Emergency Plant Manager, the Engineering Coordinator/Operations, and the Radiation Protection staff regarding:

(a) Present and projected onsite radiological conditions.

(b) Recommendations for corrective actions based upon radiological conditions.

(c) Radiological concerns for OSC teams.

(d) In coordination with the OSC Supervisor, the TSC Supervisor and the Offsite Radiological Supervisor, assess staffing of Radiation Protection personnel in the TSC and the OSC. If additional personnel are necessary, consider the following:

(1) If personnel are standing by onsite (such as in an Alert), obtain support from normal muster, shop, or office locations.

(2) If personnel have been evacuated to an Assembly Area, coordinate with the Logistics Supervisor in the EOF to obtain additional support.

6.4 DISPATCH OF THE PERSONNEL MONITORING TEAM

[1] Personnel monitoring is not necessary unless there is a potential for contamination on evacuees.

(a) If evacuees will be exiting contaminated areas without removal of protective clothing, dispatch a team to perform monitoring at the Assembly Area.

(b) Radiation Protection personnel may be retained for other support purposes if emergency conditions do not warrant monitoring and evacuees are not rapidly exiting any contaminated areas.

[2] Generate an Emergency Task Assignment Sheet (in accordance with EP-IP-220) to begin the process of assembling and dispatching the Personnel Monitoring Team. Team members can be taken from:

(a) Radiation Protection OSC pool personnel.

(b) Available Radiation Protection personnel assigned to the EOF.

(c) Evacuated Radiation Protection personnel already at the Assembly Area.

[3] The Onsite Radiological Supervisor may transfer responsibility and control of the Personnel Monitoring Team to the Offsite Radiological Supervisor if desired.

NOTE

Team briefings may be directed to be conducted by the Offsite Radiological Supervisor or the Assembly Area Coordinator as appropriate.

[4] Ensure the Personnel Monitoring Team briefing will include:

(a) An estimation of the number of individuals to be monitored (if known).

(b) Contamination levels below which personnel and vehicles can be unconditionally released.

(c) Disposition of contaminated individuals and items.

[5] Notify the Logistics Supervisor in the EOF of the dispatch of the Personnel Monitoring Team to the Assembly Area.

6.5 RELOCATION OF THE OSC/TSC

In the event that habitability survey results require the evacuation of the TSC/OSC, the Onsite Radiological Supervisor shall:

[1] Notify the Emergency Plant Manager that evacuation of the TSC/OSC is warranted based upon habitability survey results.

[2] Upon direction from the Emergency Plant Manager, relocate the OSC to the Control Room Annex and remaining TSC staff to the EOF.

[3] If the backup OSC does not meet habitability requirements, an alternate location must be selected with respect to:

(a) Adequate access to the plant.

(b) Communications capabilities with other emergency facilities.

(c) Space for at least 25 people.

(d) Access to appropriate reference materials, tools, and equipment.

[4] Determine the evacuation route and any recommended protective measures prior to directing the evacuation.

[5] In coordination with the OSC Supervisor, designate select personnel, necessary emergency equipment, supplies, and documentation to be relocated to the backup or alternate OSC.

[6] Upon establishing the backup or alternate OSC, notify the Emergency Plant Manager and await further instructions.

6.6 DEACTIVATION

[1] Ensure that all radiological logs and records are submitted to the Emergency Plant Manager.

[2] Debrief the Radiation Protection Engineer and the Radiation Protection Coordinator regarding:

(a) Communication problems.

(b) Adequacy of personnel training or briefings.

(c) Equipment malfunctions or deficiencies.

(d) Adequacy of facilities and materials.

[3] Brief relief personnel regarding any special survey or posting requirements which may still be in effect as a result of the emergency condition.

[4] Report any equipment, procedure, or personnel problems to the Emergency Plant Manager.

7.0 RECORDS

[1] The following records are generated as a result of the implementation of this Procedure:

(a) Onsite Radiological Supervisor Logbook

(b) Radiological Data Forms

[2] All records shall be forwarded to Emergency Preparedness.

8.0 ATTACHMENTS

ATTACHMENT 1 - AREA RADIATION MONITOR DATA FORM

ATTACHMENT 2 - PROCESS RADIATION MONITOR DATA FORM

ATTACHMENT 3 - DOCUMENT CROSS-REFERENCE

ATTACHMENT 4 - IDENTIFICATION OF COMMITMENTS

AREA RADIATION MONITOR DATA FORM

AREA RADIATION MONITORS

TIME: _____

PANEL/ID NO.	MONITOR	TREND	READING	ALARM IN	RANGE
C910/1705-60	Carbon Bed Vault Area		_____ mR/Hr		10^{-1} - 10^{3}
C911/1815-3A	Condensate Pump Stairway		_____ mR/Hr		10^{-1} - 10^{3}
C911/1815-8A	Feedwater Heaters		_____ mR/Hr		10^{0} - 10^{4}
C911/1815-2A	Main Control Room		_____ mR/Hr		10^{-2} - 10^{2}
C911/1815-8B	Turbine-Front Standard		_____ mR/Hr		10^{0} - 10^{4}
C911/1815-3B	Radwaste-Corridor		_____ mR/Hr		10^{-1} - 10^{3}
C911/1815-8C	Radwaste-Sump Area		_____ mR/Hr		10^{0} - 10^{4}
C911/1815-8D	Chem. Waste Tank		_____ mR/Hr		10^{0} - 10^{4}
C911/1815-2B	Rx-Outside TIP Room		_____ mR/Hr		10^{-2} - 10^{2}
C911/1815-2C	Radwaste Shipping Lock		_____ mR/Hr		10^{-2} - 10^{2}
C911/1815-2D	Rx Access Area (S.E.)		_____ mR/Hr		10^{-2} - 10^{2}
C911/1815-3C	New Fuel Storage Area		_____ mR/Hr		10^{-1} - 10^{3}
C911/1815-3D	New Fuel Vault		_____ mR/Hr		10^{-1} - 10^{3}
C911/1815-3E	Shield Plug Area		_____ mR/Hr		10^{-1} - 10^{3}
C911/1815-3F	Spent Fuel Pool Area		_____ mR/Hr		10^{-1} - 10^{3}

1705-60} 500mR/Hr
1815-3A} 55 mR/Hr
1815-8A} 600 mR/Hr
1815-2A} 1 mR/Hr
1815-8B} 400mR/Hr
1815-3B} 15 mR/Hr
1815-8C} 6000 mR/Hr
1815-8D} 300 mR/Hr
1815-2B} 5 mR/Hr
1815-2C} 15 mR/Hr
1815-2D} 60 mR/Hr
1815-3C} 6 mR/Hr
1815-3D} 40 mR/Hr
1815-3E} 40 mR/Hr
1815-3F} 40 mR/Hr

OOS -- Out of Service OSH -- Off Scale Hi DS -- Down Scale

Circle readings that are greater than alarm setpoint in red

PROCESS RADIATION MONITOR DATA FORM

PROCESS RADIATION MONITORS

TIME: _____

PANEL/ID NO.	MONITOR	TREND	READING		ALARM IN	RANGE
C910/1705-18	Main Stack Lo A		_____	CPS		10^{-1} - 10^{6}
	Main Stack Lo B		_____	CPS		10^{-1} - 10^{6}
C910/1001-608	Main Stack Hi		_____	R/Hr		10^{-1} - 10^{4}
C910/1705-32	Rx Bldg Vent Lo A		_____	CPS		10^{-1} - 10^{6}
	Rx Bldg Vent Lo B		_____	CPS		10^{-1} - 10^{6}
C910/1001-609	Rx Bldg Vent Hi		_____	R/Hr		10^{-1} - 10^{4}
C910/1001-610	Turbine Bldg Vent Hi		_____	R/Hr		10^{-1} - 10^{4}
C170-C171/1001-606A	Drywell CHRMS A		_____	R/Hr		10^{0} - 10^{7}
C170-C171/1001-606B	Drywell CHRMS B		_____	R/Hr		10^{0} - 10^{7}
C170-C171/1001-607A NORTH	Torus CHRMS A		_____	R/Hr		10^{0} - 10^{7}
C170-C171/1001-607B EAST	Torus CHRMS B		_____	R/Hr		10^{0} - 10^{7}
C910/1705-2	Main Steam Line A		_____	mR/Hr		10^{0} - 10^{6}
	Main Steam Line B		_____	mR/Hr		10^{0} - 10^{6}
	Main Steam Line C		_____	mR/Hr		10^{0} - 10^{6}
	Main Steam Line D		_____	mR/Hr		10^{0} - 10^{6}
C910/1705-3	Air Ejector Off Gas A		_____	mR/Hr		10^{0} - 10^{6}
	Air Ejector Off Gas B		_____	mR/Hr		10^{0} - 10^{6}
C910/1705-4	A Loop RBCCW		_____	CPS		10^{-1} - 10^{6}
	B Loop RBCCW		_____	CPS		10^{-1} - 10^{6}
C910/1705-8	Refuel Floor Vent A		_____	mR/Hr		10^{-1} - 10^{3}
	Refuel Floor Vent B		_____	mR/Hr		10^{-1} - 10^{3}
	Refuel Floor Vent C		_____	mR/Hr		10^{-1} - 10^{3}
	Refuel Floor Vent D		_____	mR/Hr		10^{-1} - 10^{3}
C910/1705-9	SBGT Exhaust		_____	mR/Hr		10^{0} - 10^{4}
C910/1705-16	Control Rm Air Intake		_____	mR/Hr		10^{-2} - 10^{2}
C910/1705-30	R/W Effluent Discharge		_____	CPS		10^{-1} - 10^{6}
C910/1705-5	Offgas Post Treatment A		_____	CPS		10^{-1} - 10^{6}
	Offgas Post Treatment B		_____	CPS		10^{-1} - 10^{6}

FLOW RATES
SBGT FL8126/7
Rx Bldg FL8116A
(CIRCLE)

Panel C7
_____ (CFM)
_____ (CFM)
Normal / Isolated

Main Stack _____ CFM*
TB Vent Exh. _____ CFM*
TB Roof Fans _____ Running*

****MET DATA**
Delta Temp
Outside Temp
Stability Class

Panel MT1
_____ Deg. F
_____ Deg. F
_____*

	220' Height	*160' Height	33' Height
Dir (from)	_____ Deg.	_____ Deg.*	_____ Deg.
Speed	_____ MPH	_____ MPH*	_____ MPH

*Not Provided from Control Room

DOCUMENT CROSS-REFERENCE

This Attachment lists those documents, other than source documents, which may be affected by changes to this Procedure.

Document Number	Document Title
EP-IP-220	TSC Activation and Response
EP-IP-230	OSC Activation and Response
EP-IP-251	Offsite Radiation Protection
EP-IP-410	Evacuation/Assembly
EP-IP-440	Emergency Exposure Controls

IDENTIFICATION OF COMMITMENTS

This Attachment lists those external commitments (i.e., NRC commitments, QA audit findings, and INPO inspection items) implemented in this Procedure.

Reference Document	Commitment	Affected Section(s)/Step(s)
None		