
Document Update Notification

COPYHOLDER NO: 103

TO: ANO-NRC (EMERGENCY RESPONSE
COORD.) - WASHINGTON

ADDRESS: OS-DOC CNTRL DESK MAIL STOP OP1-
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DOCUMENT NO: OP-1905.004

TITLE: EOF RADIOLOGICAL CONTROLS

CHANGE NO: 007-01-0

ADDITIONAL INFO:

← If this box is checked, please sign, date, and return within 5 days.



ANO-1 Docket 50-313

ANO-2 Docket 50-368

Signature

Date

SIGNATURE CONFIRMS UPDATE HAS BEEN MADE

RETURN TO:

**ATTN: DOCUMENT CONTROL-(N-ADMIN-24)
ARKANSAS NUCLEAR ONE
1448 SR 333
RUSSELLVILLE, AR 72801**

A045

**ENERGY OPERATIONS INCORPORATED
ARKANSAS NUCLEAR ONE**

TITLE: EOF RADIOLOGICAL CONTROLS

DOCUMENT NO.
1905.004

CHANGE NO.
007-01-0

SET # **103**

WORK PLAN EXP. DATE
N/A

TC EXP. DATE
N/A

SAFETY-RELATED
 YES NO

IPTE
 YES NO

TEMP ALT
 YES NO

When you see these **TRAPS**

Get these **TOOLS**

- Time Pressure
- Distraction/Interruption
- Multiple Tasks
- Overconfidence
- Vague or Interpretive Guidance
- First Shift/Last Shift
- Peer Pressure
- Change/Off Normal
- Physical Environment
- Mental Stress (Home or Work)

- Effective Communication
- Questioning Attitude
- Placekeeping
- Self Check
- Peer Check
- Knowledge
- Procedures
- Job Briefing
- Coaching
- Turnover

VERIFIED BY

DATE

TIME

VERIFIED BY	DATE	TIME
_____	_____	_____
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FORM TITLE:

VERIFICATION COVER SHEET

FORM NO.
1000.006A

CHANGE NO.
050-00-0

**ENTERGY OPERATIONS INCORPORATED
ARKANSAS NUCLEAR ONE**

TITLE: EOF RADIOLOGICAL CONTROLS	DOCUMENT NO. 1905.004	CHANGE NO. 007-00-0 ⁵⁻²⁹⁻⁰¹
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AFFECTED UNIT: <input checked="" type="checkbox"/> UNIT 1 <input checked="" type="checkbox"/> UNIT 2	<input checked="" type="checkbox"/> PROCEDURE <input type="checkbox"/> ELECTRONIC DOCUMENT <input type="checkbox"/> WORK PLAN, <input type="checkbox"/> EXP. DATE	SAFETY-RELATED <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
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TYPE OF CHANGE:

<input type="checkbox"/> NEW	<input checked="" type="checkbox"/> PC	<input type="checkbox"/> TC	<input type="checkbox"/> DELETION
<input type="checkbox"/> REVISION	<input checked="" type="checkbox"/> EZ	EXP. DATE: _____	

- DOES THIS DOCUMENT:**
- | | | |
|--|------------------------------|--|
| 1. Supersede or replace another procedure?
(If YES, complete 1000.006B for deleted procedure.) (OCAN058107) | <input type="checkbox"/> YES | <input checked="" type="checkbox"/> NO |
| 2. Alter or delete an existing regulatory commitment?
(If YES, coordinate with Licensing before implementing.) (OCNA128509)(OCAN049803) | <input type="checkbox"/> YES | <input checked="" type="checkbox"/> NO |
| 3. Require a 50.59 review per LI-1017 (See also 1000.006, Attachment 15)
(If 50.59 evaluation, OSRC review required.) | <input type="checkbox"/> YES | <input checked="" type="checkbox"/> NO |
| 4. Cause the MTCL to be untrue? (See Step 8.5 for details.)
(If YES, complete 1000.009A) (1CAN108904, 0CAN099001, 0CNA128509, 0CAN049803) | <input type="checkbox"/> YES | <input checked="" type="checkbox"/> NO |
| 5. Create an Intent Change?
(If YES, Standard Approval Process required.) | <input type="checkbox"/> YES | <input checked="" type="checkbox"/> NO |
| 6. Implement or change IPTE requirements?
(If YES, complete 1000.143A OSRC review required.) | <input type="checkbox"/> YES | <input checked="" type="checkbox"/> NO |
| 7. Implement or change a Temporary Alteration?
(If YES, then OSRC review required.) | <input type="checkbox"/> YES | <input checked="" type="checkbox"/> NO |

Was the Master Electronic File used as the source document? YES NO

INTERIM APPROVAL PROCESS	STANDARD APPROVAL PROCESS
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<p>ORIGINATOR SIGNATURE: (Includes review of Att. 13) DATE:</p> <p>Print and Sign name: _____ PHONE #: _____</p> <p>SUPERVISOR APPROVAL: * N DATE: _____</p> <p>SRO UNIT ONE: ** A DATE: _____</p> <p>SRO UNIT TWO: ** DATE: _____</p> <p>Interim approval allowed for non-intent changes requiring no 50.59 evaluation that are stopping work in progress.</p> <p>Standard Approval required for intent changes or changes requiring a 50.59 evaluation.</p> <p>*If change not required to support work in progress, Department Head must sign.</p> <p>**If both units are affected by change, both SRO signatures are required. (SRO signature required for safety related procedures only.)</p> <p>OSRC CHAIRMAN/TECHNICAL REVIEWER: (OCNA049312) DATE: <u>5/15/03</u></p> <p>FINAL APPROVAL: <u>Shirley R. Cotton</u> Date: <u>5/21/03</u></p> <p>REQUIRED EFFECTIVE DATE: <u>6/13/03</u></p>	<p>ORIGINATOR SIGNATURE: (Includes review of Att. 13) DATE: <u>6/9/03</u> <u>Roger Freeman</u></p> <p>Print and Sign name: <u>Roger Freeman</u> PHONE #: <u>4994</u></p> <p>INDEPENDENT REVIEWER: <u>Ed Jorde</u> DATE: <u>5/13/03</u></p> <p>ENGINEERING: <u>N/A</u> DATE: _____</p> <p>QUALITY: <u>N/A</u> DATE: _____</p> <p>UNIT SURVEILLANCE COORDINATOR (OCNA049803): DATE: _____</p> <p>SECTION LEADER: <u>Roger Freeman</u> DATE: <u>5/14/03</u></p> <p>QUALITY ASSURANCE: <u>N/A</u> DATE: _____</p> <p>OTHER SECTION LEADERS: <u>N/A</u> DATE: _____</p>
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FORM TITLE: PROCEDURE/WORK PLAN APPROVAL REQUEST	FORM NO. 1000.006B	CHANGE NO. 051-00-0
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**ENTERGY OPERATIONS INCORPORATED
ARKANSAS NUCLEAR ONE**

TITLE: EOF RADIOLOGICAL CONTROLS

DOCUMENT NO.
1905.004

CHANGE NO.
007-01-0

PROCEDURE **WORK PLAN, EXP. DATE** _____

PAGE 1 **OF** 1

ELECTRONIC DOCUMENT

TYPE OF CHANGE:

NEW

PC

TC

DELETION

REVISION

EZ

EXP. DATE: _____

AFFECTED SECTION:
(Include step # if applicable)

DESCRIPTION OF CHANGE: (For each change made, include sufficient detail to describe reason for the change.)

Page 2 of 8, step 3.2.6

Changed reference number. Should be RP-105 "Personnel Contamination Events (PCE)".

Page 2 of 8, step 3.2.8

Deleted step because procedure no longer exist.

Page 2 of 8, step 3.2.11

Changed reference number and title. Should be RP-302 "Operation of Radiation Protection Instrumentation".

Page 2 section 3

Renumbered steps due to deleting step 3.2.8

No 50.59 is required as per Attachment 15 of 1000.006.

FORM TITLE:

DESCRIPTION OF CHANGE

FORM NO.
1000.006C

CHANGE NO.
050-00-0

PROC./WORK PLAN NO. 1905.004	PROCEDURE/WORK PLAN TITLE: EOF RADIOLOGICAL CONTROLS	PAGE: 1 of 8 CHANGE: 007-01-0
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TABLE OF CONTENTS

<u>SECTIONS</u>	<u>PAGE NO.</u>
1.0 Purpose.....	2
2.0 Scope.....	2
3.0 References.....	2
4.0 Definitions.....	3
5.0 Responsibilities.....	3
6.0 General Guidelines For EOF Radiological Control	4
7.0 Surveys.....	4
8.0 Control Points.....	5
9.0 Attachments And Forms.....	5
9.1 Attachments	
Attachment 1, "EOF/AEOF Protective Action Guidelines"	6
9.2 Forms	
Form 1905.004A, "EOF Survey Log"	8

PROC./WORK PLAN NO. 1905.004	PROCEDURE/WORK PLAN TITLE: EOF RADIOLOGICAL CONTROLS	PAGE: 2 of 8 CHANGE: 007-01-0
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1.0 PURPOSE

This procedure provides guidance for radiological control practices at the Emergency Operations Facility (EOF) during emergency situations.

2.0 SCOPE

2.1 This procedure is applicable during Alert, Site Area Emergency, or General Emergency conditions.

2.2 This procedure applies to ANO emergency support personnel and the Emergency Operations Facility/Alternate Emergency Operations Facility.

3.0 REFERENCES

3.1 REFERENCES USED IN PROCEDURE PREPARATION:

- 3.1.1 Emergency Plan
- 3.1.2 1000.031, "Radiation Protection Manual"
- 3.1.3 1903.011, "Emergency Response/Notifications"

3.2 REFERENCES USED IN CONJUNCTION WITH THIS PROCEDURE:

- 3.2.1 1903.030, "Evacuation"
- 3.2.2 1903.034, "Emergency Operations Facility Evacuation"
- 3.2.3 1903.066, "Emergency Response Facility - Operational Support Center (OSC)"
- 3.2.4 1903.067, "Emergency Response Facility - Emergency Operations Facility (EOF)"
- 3.2.5 1012.018, "Administration of Radiological Surveys"
- 3.2.6 RP-104, "Personnel Contamination Events (PCE)"
- 3.2.7 1601.200, "Personnel Processing/Records"
- 3.2.8 1601.208, "Self Reading Dosimeters"
- 3.2.9 1601.209, "Whole Body Counting/Bioassay"
- 3.2.10 RP-302, "Operation of Radiation Protection Instrumentation"
- 3.2.11 1601.443, "Operation of Portable Air Samplers"

PROC./WORK PLAN NO. 1905.004	PROCEDURE/WORK PLAN TITLE: EOF RADIOLOGICAL CONTROLS	PAGE: 3 of 8 CHANGE: 007-01-0
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3.3 RELATED ANO PROCEDURES

1905.001, "Emergency Radiological Controls"

3.4 REGULATORY CORRESPONDENCE CONTAINING NRC COMMITMENTS WHICH ARE IMPLEMENTED IN THIS PROCEDURE:

OCAN038313; Section 8

4.0 DEFINITIONS

4.1 Controlled Access Area - Any area where full radiological controls are in effect for the purpose of providing protection and/or information to the individual. At Arkansas Nuclear One the Controlled Access Area includes the auxiliary buildings inside the turnstyles, both reactor buildings, and inside the fenced area of the BWST/RWT.

4.2 Control Point - The area or location established for the purpose of controlling personnel and/or material movement into and out of a radiologically controlled area.

4.3 Radiologically Controlled Area (RCA) - An area within the plant site in which radioactive material and/or radiation may be present in quantities sufficient to require protective measures. (The Controlled Access Area, for example, is an RCA.)

4.4 Emergency Operations Facility (EOF) - A near site emergency response facility located in the ANO Training Center approximately 0.65 miles northeast of the reactor buildings.

4.5 Alternate Emergency Operations Facility (AEOF) - The Entergy Arkansas Office located at 305 South Knoxville Street, Russellville, or any other facility designated by the EOF Director/TSC Director as appropriate.

5.0 RESPONSIBILITIES

5.1 RADIOLOGICAL/ENVIRONMENTAL ASSESSMENT MANAGER (REAM)

Responsible for the implementation of this procedure during an emergency following arrival at the EOF or Alternate EOF.

5.2 REAM ASSISTANT

Responsible for assisting the REAM.

PROC./WORK PLAN NO. 1905.004	PROCEDURE/WORK PLAN TITLE: EOF RADIOLOGICAL CONTROLS	PAGE: 4 of 8 CHANGE: 007-01-0
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5.3 **MANAGER, RADIATION PROTECTION/CHEMISTRY**

Responsible for the administrative control of this procedure.

5.4 **HEALTH PHYSICS SUPERVISOR**

Responsible for ensuring that HP assistance has been dispatched to the EOF.

5.5 **EOF HEALTH PHYSICS SUPERVISOR**

5.5.1 Responsible for ensuring that the appropriate control points and radiological control measures are established and implemented at the EOF or AEOF.

5.5.2 Responsible for evaluating radiological conditions of the EOF and recommending EOF protective actions.

5.5.3 Responsible for supervising health physics coverage at the EOF and at the Alternate EOF, if activated.

6.0 **GENERAL GUIDELINES FOR EOF RADIOLOGICAL CONTROL**

6.1 The EOF HP Supervisor shall determine habitability of EOF and make appropriate recommendations to the REAM in accordance with Attachment 1.

6.2 If the EOF is not habitable, the EOF HP Supervisor shall determine habitability of the AEOF and make appropriate recommendations to the REAM in accordance with Attachment 1.

6.3 Evacuation of the EOF shall be performed in accordance with Procedure 1903.034, "Emergency Operations Facility Evacuation".

7.0 **SURVEYS**

7.1 Surveys should be conducted in accordance with the applicable radiation protection procedures and emergency radiation protection procedures Series. Performance of surveys should be logged on Form 1905.004A, "EOF Survey Log".

7.2 Survey results shall be performed and documented in accordance with current RP procedures. Radiation surveys should be made inside and outside the EOF hourly and shall be made every two hours. Contamination surveys should be performed as conditions warrant (i.e., contaminated personnel at the control point(s)).

7.3 Airborne radioactivity surveys shall be performed and documented in accordance with current RP procedures. If a release is in progress, attempts should be made to take air samples inside and outside the EOF protected area every hour but shall be taken at least every four hours.

PROC./WORK PLAN NO. 1905.004	PROCEDURE/WORK PLAN TITLE: EOF RADIOLOGICAL CONTROLS	PAGE: 5 of 8 CHANGE: 007-01-0
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7.4 A completed copy of each survey report shall be retained by the EOF HP Supervisor.

7.5 The EOF HP Supervisor should provide the REAM a verbal summary report of the EOF radiological conditions at least hourly or more frequently as conditions warrant.

8.0 CONTROL POINTS

8.1 Upon activation of the EOF, radiological control points should be established at the designated exits/entrances to the EOF. (Normally the 1st floor west entrance and the 2nd floor north entrance.)

8.2 The following radiological controls should be instituted at the control points.

8.2.1 A frisking station should be used to check personnel entering the EOF suspected of being contaminated and contamination control points set up accordingly.

NOTE

An HP Technician shall be stationed at the control point during plant evacuation to the EOF to monitor Emergency Response/Emergency Standby Personnel as they arrive.

8.2.2 If anyone entering or leaving the EOF is found to be contaminated, decontamination procedures should be evaluated/initiated in accordance with current RP procedures.

9.0 ATTACHMENTS AND FORMS

9.1 ATTACHMENTS

Attachment 1, "EOF/AEOF Protective Action Guidelines"

9.2 FORMS

Form 1905.004A, "EOF Survey Log"

PROC./WORK PLAN NO. 1905.004	PROCEDURE/WORK PLAN TITLE: EOF RADIOLOGICAL CONTROLS	PAGE: 6 of 8 CHANGE: 007-01-0
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ATTACHMENT 1

Page 1 of 2

EOF/AEOF PROTECTIVE ACTION GUIDELINES

<u>CONDITION</u>	<u>RECOMMENDED ACTIONS</u>
1. Plant Evacuation declared, EOF Evacuation likely to occur.	Consider relocation of media and/or non-essential ANO personnel.
2. Exclusion Area and/or Area Evacuation declared.	Consider protective action for media and/or non-essential ANO personnel consistent with the protective action recommendations made for the general public per the applicable EPIP.
3. Area Survey Measurements Exceed 2.5 mRem/hr in Unprotected Areas of EOF.	Consider evacuation of all non-essential personnel from the unprotected areas of the EOF.
4. EOF Protected Area Radiation Monitor Warning Alarm (1 mr/hr)	Verify EOF ARM alarm. Conduct area radiation survey of unprotected areas of EOF and evacuate all personnel in those areas if necessary.
5. EOF Protected Area Radiation Monitor alarms Hi (2.5 mr/hr) and/or iodine concentration exceeds $2.7E^{-9}$ μ Ci/cc.	Consider having all ERO personnel, other than activated Emergency Response Teams, to remain sheltered in the protected area of the EOF, unless otherwise instructed by the EOF Director. Verify EOF ARM alarm. Consider evacuation of all non essential personnel from the protected areas of the EOF. All ERO personnel should remain sheltered in the EOF protected area. Increase frequency of airborne and direct radiation monitoring of EOF, ensure EOF filtered ventilation is operational; record DAC hours.

PROC./WORK PLAN NO. 1905.004	PROCEDURE/WORK PLAN TITLE: EOF RADIOLOGICAL CONTROLS	PAGE: 7 of 8 CHANGE: 007-01-0
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ATTACHMENT 1

Page 2 of 2

EOF/AEOF PROTECTIVE ACTION GUIDELINES

<u>CONDITION</u>	<u>RECOMMENDED ACTIONS</u>
6. EOF Protected Area radiation levels exceed 100 mRem/hr but less than 1 Rem/hr, and/or iodine concentration exceeds 1 DAC ($2.0E^{-8}$ μ Ci/cc).	If conditions are estimated to be temporary (less than 30 minutes), continue on-going protective actions.
7. EOF Protected Area radiation levels exceed 1 Rem/hr, and/or iodine concentration exceeds 4 DAC ($8.0E^{-8}$ μ Ci/cc).	If conditions are estimated to be long-term (greater than 30 minutes), initiate EOF evacuation.
	<u>Immediate</u> evacuation of the EOF is required.

Date: _____

Time of Survey	Area Surveyed (1)	Contamination Levels <1000 dpm Y/N	Highest GA Dose Rate in mRem/hr	Air Sample Clean Y/N (2)	Surveyed By	Badge Number	Inst. No.

- (1) Area Surveyed - choose from the following:
- 1) All assigned areas inside and outside
 - 2) All levels inside the EOF
 - 3) Upper level of the EOF
 - 4) Lower level of the EOF
 - 5) All assigned areas outside the EOF
- (2) Air Sample Clean Y/N - the air sample can be screened using a frisker as long as the volume of the sample is greater than or equal to 6.0E5cc using the following formula:

$$\frac{(\text{Net cpm}) (10)}{(2.22E6\text{dpm}/\mu\text{Ci}) (\text{volume})} = \mu\text{Ci/cc}$$

IF an air sample is not clean by screening with a frisker, **THEN** notify the EOF HP Supervisor for direction.

IF activity above background is detected (contamination levels or dose rates), **THEN** document a survey showing the locations of detected activity and notify the EOF HP supervisor for direction.

Inst. No.	Instrument	Cal. Due Date	Background Reading
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____

Reviewed by: _____ Date: _____