

DETROIT EDISON - FERMI 2
AUTOMATED RECORD MANAGEMENT
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Ref: ca6076

A045

**CALCULATION OF ESTIMATED CONTAINMENT HIGH RANGE
RADIATION MONITOR OR SGTS/AXM MONITOR READINGS
IF INSTRUMENTS ARE INOPERABLE OR OFFSCALE**

Revision Summary

- 1) Added IP Code to ARMS stamp and Attachments 1 and 2.
- 2) Converted procedure from MAC to PC format.

Implementation Plan

- Revision effective immediately - ongoing work impacted
- Ongoing work may proceed using previous revision

CONTROLLED

Attachments

- 1 012700 Calculation of Estimated CHRRM Reading With Instruments
INOPERABLE or OFFSCALE
- 2 012700 Calculation of Estimated SGTS/AXM Reading With Instruments
INOPERABLE or Failed LOW or HIGH

Enclosures

- A 050494 Multiplication Factor to Obtain Estimated CHRRM Reading (Rad/Hr)
From Survey Meter Reading
- B 050494 Multiplication Factor to Obtain Estimated SGTS/AXM Reading [uCi/cc
(Xe-133 equivalents)] From Survey Meter Reading

<i>Information and Procedures</i>				
DSN EP-546	Revision 7	DCR # 00-0204	DTC TPEPT	File # 1703.10
IP Code I	Date Approved 2-2-00	Released By D. Adams/s/	Date Issued 2-3-00	Recipient 935

1.0 PURPOSE

To prescribe the method by which the Containment High Range Radiation Monitor (CHRRM) readings or the Standby Gas Treatment System (SGTS)/AXM high range monitor readings may be estimated if the instruments are INOPERABLE or OFFSCALE in order to perform offsite dose calculations and estimates of core/fuel damage.

2.0 USE REFERENCES - None

3.0 ENTRY CONDITIONS

3.1 The Fermi 2 Radiological Emergency Response Preparedness Plan and procedures have been implemented.

3.2 And either of the following:

3.2.1 Annunciator DIV I/DIV II Containment Area Radiation Monitor Trouble (3D43) alarms, and it is verified on the CHRRM recorder on Panel H11-P812 (back panel) or in the Relay Room that both Division I and Division II are either INOPERABLE or OFFSCALE

or

3.2.2 Annunciator Effluent Process Radiation Monitor Trouble (3D44) alarms, and no valid SGTS/AXM reading is available for an operating division of SGTS.

4.0 GENERAL INFORMATION

4.1 If Division I and II CHRRM monitors are INOPERABLE or OFFSCALE, and readings are required to perform potential offsite dose projections and/or perform rapid estimate of core damage, follow this procedure.

4.2 If the AXM on the operating Division of SGTS is inoperable or failed low or high, switch to the alternate SGTS division. If both Divisions are INOPERABLE or failed LOW or HIGH and readings are required to perform actual offsite dose projections, follow this procedure.

4.3 The responsibility for implementing this procedure is assigned to the Emergency Director/designee. The estimated monitor readings are calculated by the Radchem Advisor and reported to the Radiation Protection primary contact for dose calculations.

- 4.4 If dose assessment is being performed from the TSC, the Radiation Protection Advisor (RPA) is the primary contact for dose calculations. If dose assessment is being performed from the EOF, the Radiation Protection Coordinator (RPC) is the primary contact.
- 4.5 Noble gas samples obtained for this procedure may be used for isotopic analysis. If this is requested, the priority for timely reporting of dose rate information should be communicated to the technicians.

5.0 IMMEDIATE ACTIONS - None

6.0 PROCEDURE

NOTE: The following abbreviations are used to identify the individuals responsible for accomplishing the action indicated:

ED Emergency Director
RCA Radchem Advisor

6.1 CHRRMs Divisions I and II Verified INOPERABLE or OFFSCALE

<i>Who</i>	<i>Step</i>	<i>Action</i>
ED	6.1.1	Request a Post Accident Sampling System (PASS) sample of drywell atmosphere for determination of estimated CHRRM reading.
RCA	6.1.2	Obtain measured 75 cm sample dose rate value
RCA	6.1.3	Calculate estimated CHRRM reading in Rad/hr using Attachment 1 and Enclosure A.
RCA	6.1.4	Provide results to RPA/RPC as appropriate for incorporation into the dose assessment.
		1. Perform rapid estimate of core damage using EP-547 if required.

6.2 SGTS/AXM Monitor Divisions I and II Verified INOPERABLE or Failed LOW or HIGH (CHRRMs Divisions I and II Verified INOPERABLE or OFFSCALE)

<i>Who</i>	<i>Step</i>	<i>Action</i>
ED	6.2.1	Request an AXM noble gas sample for determination of estimated SGTS/AXM reading.
RCA	6.2.2	Obtain measured sample contact dose rate value.
RCA	6.2.3	Calculate the SGTS/AXM reading in uCi/cc (Xe-133 equivalents) using Attachment 2 and Enclosure B.
RCA	6.2.4	Provide results to RPA/RPC as appropriate for incorporation into the dose assessment.

7.0 FOLLOW-UP ACTIONS

- 7.1 If the CHRRM or SGTS/AXM monitors continue to be INOPERABLE or OFFSCALE, repeat Section 6.0 hourly, or at an interval recommended by the Radiation Protection Advisor based on the dose to the individuals involved in the sampling procedures, and observed changes in plant conditions.
- 7.2 Forward each completed Calculation of Estimated CHRRM Reading with Instruments Inoperable or Offscale (Attachment 1) and/or Calculation of Estimated SGTS/AXM Reading with Instruments Inoperable or Failed Low or High (Attachment 2) to the Supervisor, RERP, 164 NOC.

8.0 RECORDS

- 8.1 The following are required records and shall be retained or dispositioned in accordance with established requirements:
- 8.1.1 Calculation of Estimated CHRRM Reading With Instruments Inoperable or Offscale (Attachment 1)
- 8.1.2 Calculation of Estimated SGTS/AXM Reading With Instruments Inoperable or Failed Low or High (Attachment 2)

END OF TEXT

**CALCULATION OF ESTIMATED CHRRM READING WITH INSTRUMENTS
INOPERABLE OR OFFSCALE**

1. Reactor Shutdown Time _____ Hour (A)
2. Time Sample Taken _____ Hour (B)
3. Time After Shutdown [(B)-(A)] _____ Hour (C)
4. Dose Rate Ratio [from Enclosure A and
Line (C)] _____ (D)
5. Measured Dose Rate (from PASS sample) _____ Rad/hr (E)
6. Estimated CHRRM Reading, [(D)x(E)]
(D)_____ x (E)_____ = _____ Rad/hr (F)

7. Estimated CHRRM reading may be used as follows:

Enter (F) in RADOSE Model according to EP-542, Radiological Dose Assessment Calculational Procedure Using a Computer-Based Program - Airborne Releases

Enter (F) on Line (D) of Form EP-547 Att1, Rapid Estimate of Core/Fuel Damage Based on actual or estimated CHRRM Reading

Forward to Supervisor, RERP, 164 NOC

**CALCULATION OF ESTIMATED SGTS/AXM READING WITH INSTRUMENTS
INOPERABLE OR FAILED LOW OR HIGH**

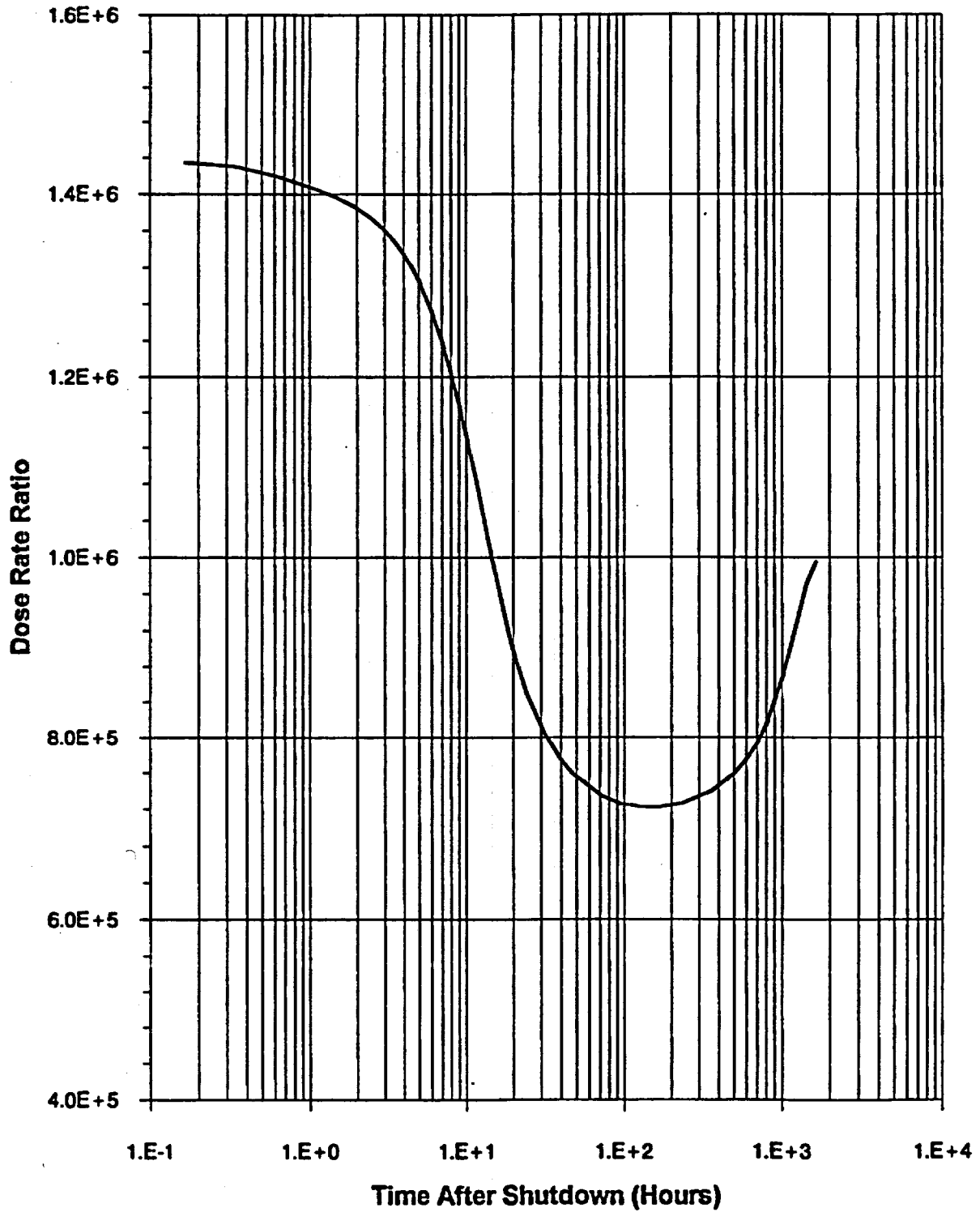
1. Reactor Shutdown Time _____ Hour (A)
2. Time Sample Taken _____ Hour (B)
3. Time After Shutdown [(B)-(A)] _____ Hour (C)
4. Dose Rate Ratio [from Enclosure B and Line (C)] _____ (D)
5. Measured Dose Rate (from SGTS/AXM sample) _____ Rad/hr (E)
6. Estimated Reading, [(D)x(E)]
(D)_____ x (E)_____ = _____ $\frac{\mu\text{Ci/cc}}{\text{Xe-133 equiv}}$ (F)

7. Estimated SGTS/AXM reading may be used as follows:

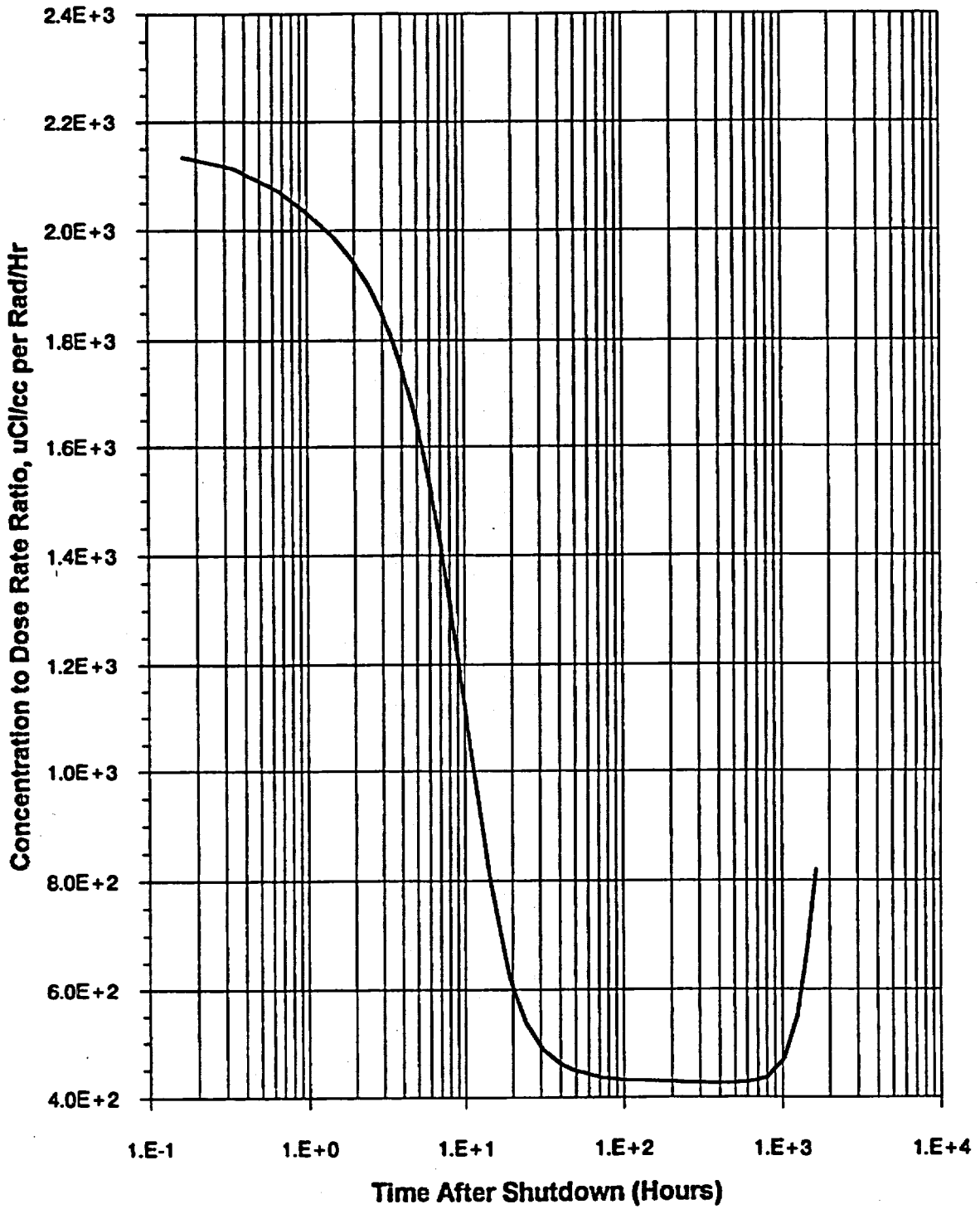
Enter (F) in RADOSE Model according to EP-542, Radiological Dose Assessment Calculational Procedure Using a Computer-Based Program - Airborne Releases.

Forward to Supervisor, RERP, 164 NOC

**MULTIPLICATION FACTOR TO OBTAIN ESTIMATED CHRRM READING
(RAD/HR) FROM SURVEY METER READING**



**MULTIPLICATION FACTOR TO OBTAIN ESTIMATED SGTS/AXM READING
[$\mu\text{Ci/cc}$ (Xe-133 equivalents)] FROM SURVEY METER READING**



END