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1641
Revision 1
06/17/77

THREE MILE ISLAND NUCLEAR STATION
STATION HEALTH PHYSICS PROCEDURE 1641
SELF-READING DOSIMETER USAGE AND RECORD KEEPING

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Unit 1 Staff Recommends Approval

Approval N/A Date _____
Cognizant Dept. Head

Unit 2 Staff Recommends Approval

Approval N/A Date _____
Cognizant Dept. Head

Unit 1 PORC Recommends Approval

R. Hartman Date 6/13/77
VICE Chairman of PORC

PORC comments of _____ included
(date)

By _____ Date _____

Unit 2 PORC Recommends Approval

D. F. Helberich Date 6/13/77
VICE Chairman of PORC

PORC comments of _____ included
(date)

By _____ Date _____

Approval [Signature] Date 6-15-77/6-17-77
Station Superintendent/
Unit Superintendent
195 096 TMI-88-A 11-74

THREE MILE ISLAND NUCLEAR STATION
STATION HEALTH PHYSICS PROCEDURE 1641

Self-Reader Dosimeter Usage and Record Keeping

1.0 PURPOSE

- 1.1 The purpose of this procedure is to explain the method used for dosimeter radiation exposure record keeping for personnel at Three Mile Island (TMI).

2.0 DISCUSSION

- 2.1 Self Reading Dosimeters are pencil shaped ionization chambers that are calibrated to discharge at a predictable rate when exposed to gamma or neutron radiation.
- 2.2 This method of exposure determination is useful for daily radiation exposure record keeping.

3.0 REFERENCES

- 3.1 W.B. Johnson Dosimeter Manual
- 3.2 TMI Radiation Protection Manual - AP 1003
- 3.3 General Public Utilities Radiation Exposure Monitoring Procedure Manual (Self-Reader Dosimetry - TMI)
- 3.4 HPP 1772

4.0 EQUIPMENT

- 4.1 Dosimeters
- 4.2 Log Sheets (Form 1641-1, 1641-2)
- 4.3 Dosimeter Charger

5.0 OPERATING PROCEDURES

- 5.1 Self-Reading Dosimeter Issue

- 5.1.1 Self-reading dosimeters will be charged as per H.P.P. 1772.
- 5.1.2 Self-reading dosimeters will be issued to all personnel entering the Controlled Area at the Access Control Point.
- 5.2 Self Reading Neutron Dosimeter and High Range Dosimeters
 - 5.2.1 The self reading neutron and high range dosimeter(s) will be worn between the neck and waist lines. These will be issued to persons at the discretion of Radiation Protection Supervision.
 - 5.2.2 To read the dosimeter, point it at a source of light and observe the position of the image of the quartz fiber on the scale. (See Figure 1615-1)
- 5.3 Self Reading Low Range Gamma Dosimeter
 - 5.3.1 The self reading low range gamma dosimeter will be worn between the neck and waistlines. On occasion additional dosimeters may be worn where exposures are expected to be greatest.
 - 5.3.2 A self reading low range gamma dosimeter, 0-200 MR range, will be issued to all plant personnel working in radiation areas.
 - 5.3.3 To read the dosimeter, point it at a source of light and observe the position of the image of the quartz fiber on the scale. (See Figure 1641-1)
 - 5.3.4 In the event a dosimeter would be dropped, lost or reads off scale, it must be immediately reported to Radiation Protection Personnel who will complete Sections A, C and D of the Contamination/Exposure Report (Form 1612-1).
- 5.4 Rezero of Dosimeters
 - 5.4.1 Insert the base of the dosimeter in the socket located on the top of the dosimeter charger and press down on the dosimeter firmly and observe the position of the hairline crossing vertically through the horizontal scale.

- 5.4.2 While observing the hairline, rotate the potentiometer to position the hairline to zero.
- 5.4.3 Remove the dosimeter from the socket and observe the dosimeter reading to verify that the hairline is on zero.
- 5.4.4 If the dosimeter hairline is not on zero repeat steps 5.4.1 through 5.4.3.
- 5.5 Permanent TMI Personnel Dosimeter Radiation Exposure Record Keeping
- 5.5.1 Each permanent employee will have a "Daily Self-Reader Exposure Form" (Form 1641-1) on file, located at the Access Control Point.
- 5.5.2 Locate your "Daily Self-Reader Dosimeter Exposure Form" (Form 1641-1).
- NOTE: The forms are listed in alphabetical order, by department.
- 5.5.3 Locate the appropriate "MONTH, DAY, YEAR" Column ① and log your current dosimeter reading under the "READ-IN" Column ② .
- 5.5.4 Upon exiting the Controlled Area, enter your dosimeter reading under the "READ-OUT" Column ③ .
- 5.5.5 Enter the difference between the "READ-IN" and "READ-OUT" dosimeter readings, ③ - ② under the "DIFFERENCE" Column ④ .
- NOTE: Space is provided on Form 1641-1 for six (6) entries for each day, corresponding to an individual entering and exiting the controlled area six (6) times in one day. If more than six (6) entries are made to the controlled area in one day, the additional entries

will be documented on a "BLANK SELF-READER EXPOSURE FORM", Form 1641-2. Form 1641-2 may be obtained at the Access Control Point.

- 5.5.6 Upon exiting the Controlled Area for the final time that day, enter the sum of the "DIFFERENCE" ④ readings in the "DAILY TOTAL" Column ⑤ .
- 5.6 TMI Visitors Dosimeter Radiation Exposure Record Keeping
- 5.6.1 Upon entering the controlled area, a visitor will be issued a "BLANK SELF-READER EXPOSURE FORM", Form 1641-2.
- 5.6.2 A Rad. Chem. Tech./Jr. or other suitably qualified personnel, will enter the visitors "SOCIAL SECURITY NUMBER" in Section ① and name, last name first, in Section ② of Form 1641-2.
- 5.6.3 Place the form in alphabetical order in the "VISITORS SELF-READING DOSIMETER EXPOSURE LOG" located at the Access Control Point.
- 5.6.4 Enter the appropriate "MONTH, DAY, YEAR" in ③ and log your current dosimeter reading under the "READ-IN" Column ④ of Form 1641-2.
- 5.6.5 Upon exiting the controlled area, enter your dosimeter reading under the "READ-OUT" Column ⑤ Form 1641-2.
- 5.6.6 Enter the difference between the "READ-IN" and "READ-OUT", ⑤ - ④ , under the difference Column ⑥ , Form 1641-2.
- 5.6.7 Upon exiting the Controlled Area for the final time that day, enter the sum of the "DIFFERENCE" ⑥ readings in the "DAILY TOTAL" Column ⑦ .

NOTE: At the conclusion of the report period, (Weekly and Daily) the "DAILY SELF-READER DOSIMETER EXPOSURE

FORMS" (Forms 1641-1, 1641-2) will be reviewed, approved and submitted for computer entry by a Radiation Protection Supervisor/Foreman.

5.7 Radiation Exposure Monitoring System Report Listings

The data from the "DAILY SELF-READER DOSIMETER EXPOSURE FORMS" (Forms 1641-1, 1641-2) will be summarized and distributed in the form of a "SELF-READER DOSIMETER EXPOSURE REPORT LISTING" (Form 1641-3). Form 1641-3 will be distributed on a weekly basis or as determined by the Radiation Protection Supervisor.

A form 1641-3 will be distributed to each department including the names of departmental personnel in alphabetical order, daily exposures, exposures for the period covered by Form 1641-1, monthly accumulated exposure, and quarterly accumulated exposure.

NOTE: A master list of the "SELF-READER DOSIMETER EXPOSURE REPORT LISTINGS" for all departments will be maintained at the Access Control Point and in the Radiation Protection office area. The report will be used as a reference to determine current exposure levels for an individual and to assist in work assignments of personnel, based on individual exposure levels.

DAILY SR DOSIMETER EXPOSURES

1641

Revision 0 04/11/77
DEPT FM

① TYP 1134 C/S/L 512510 SOC SEC 211204050 ANDERSON JOHN W
PERIOD ENDING 12/15/75 QTR TOT 200 AS OF 12/16/75

② READ-IN ③ READ-OUT ④ DIFFERENCE READ-IN READ-OUT DIFFERENCE

12/09/75 L L L L I L L L L I L L L L I L L L L I L L L L I L L L L I
L L L L I L L L L I L L L L I L L L L I L L L L I L L L L I
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⑤ DAILY-TOTAL L L L L I

12/10/75 L L L L I L L L L I L L L L I L L L L I L L L L I L L L L I
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DAILY-TOTAL L L L L I

12/11/75 L L L L I L L L L I L L L L I L L L L I L L L L I L L L L I
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DAILY-TOTAL L L L L I

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DAILY-TOTAL L L L L I

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DAILY-TOTAL L L L L I

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FORM 1641-1

6.0

ANDERSON J W

DEPT FM

105 102

TYPE
1.1.3.A

C/S/U
5 13

SOCIAL SECURITY NUMBER
11 1 19

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DEPARTMENT

PERIOD ENDING

② NAME

MO	DAY	YR
30	③	25

READ IN
25 27
④

READ OUT
30 32
⑤

DIFFERENCE
34 37
⑥

READ IN
25 29

READ OUT
30 32

DIFFERENCE
34 37

20 25

25 29

30 32

34 37

25 29

⑦ DAILY TOTAL

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DAILY TOTAL

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FORM 1641-2f

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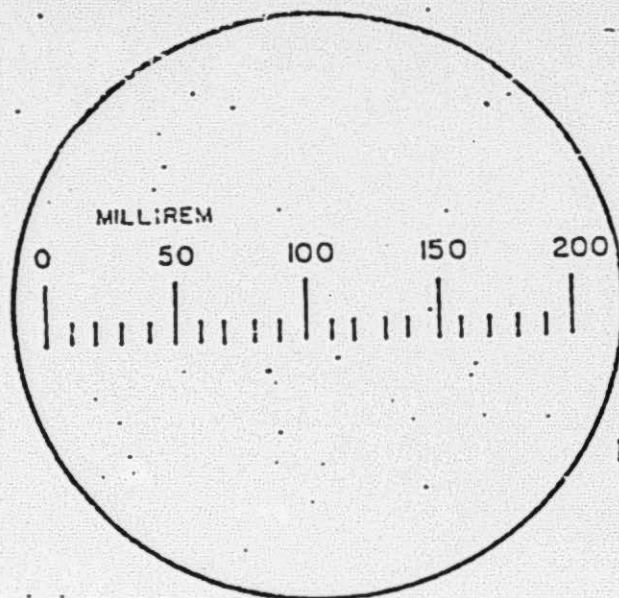
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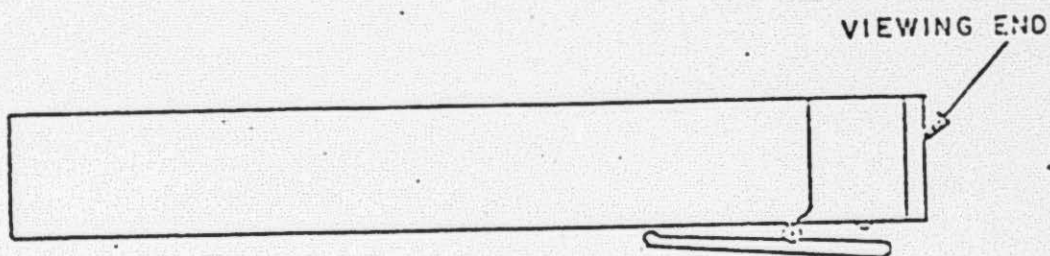
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POOR ORIGINAL

1641
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04/11/77



TYPICAL
MAGNIFIED SCALE



SELF READING DOSIMETER

FIGURE 1641-1

195 105

CONTAMINATION/EXPOSURE REPORT

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04/11/77

☐ LOSS OF PERSONAL DOSIMETRY

☐ PERSONNEL CONTAMINATION

Name _____ Company _____

SS# _____ Date _____ Time _____

Address (If not Met-Ed) _____

A. LOSS OF PERSONAL DOSIMETRY

Section 1 - Film Badge/TLD

1. Date Issued _____ Date Lost _____
2. Dosimeter reading covering lost Film Badge/TLD period _____ mrem
3. Reading entered on individuals Radiation Record: Yes _____ No _____
4. Individual restricted from controlled area: Yes _____ No _____

Section 2 - Self Reading Dosimeter

1. Dosimeter Lost ☐ Dosimeter Off Scale ☐ Date _____
2. Film Badge/TLD Evaluated: _____ mrem
3. Film Badge/TLD Reissued: Yes _____ No _____
4. Individual restricted from controlled areas: Yes _____ No _____

B. PERSONNEL CONTAMINATION:

1.

Contaminated Body Areas	Survey Results Highest DPM

B. PERSONNEL CONTAMINATION: (Cont'd)

2. Method of Decontamination: _____

3.

Decontaminated Body Areas	Survey Results Highest DPM

4. Sample for Urine Bio Collected: Yes _____ No _____

5. Individual sent for Whole Body Count: Yes _____ No _____

C. INVESTIGATION REPORT: (Include R.W.P. #)

Form Completed By: _____

D. RESULTS OF INVESTIGATION: (Completed by Radiation Protection Supervisor/Foreman)

Approved By RP Supv/Foreman _____

cc: F. H. Grice
J. G. Herbein
Department Head
HP Lab
Original to Individual's File Folder

195 107

TMI DOCUMENTS

DOCUMENT NO: TM-092

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W.R.M.
Wilda R. Mullinix, NRC

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