



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

JUL 31 1992

MEMORANDUM FOR: Those on Attached List

FROM: Frederick C. Combs, Chief
Operations Branch
Division of Industrial and
Medical Nuclear Safety, NMSS

SUBJECT: ALARMING RATEMETERS

The Operations Branch (IMOB) reviews a sampling of notices of violation, inspection reports, and NRC Form 591s that are generated by the regional offices and responses to notices of violation generated by the licensee as part of our oversight responsibilities for the materials inspection program. During a routine review of these documents, we identified a technical issue that should be brought to your attention.

The identified issue relates to alarming ratemeters. Specifically, an NRC inspector observed a radiographer using a Victoreen Model 885, Series 886 personal dosimeter as an alarming ratemeter. The inspection report stated that "radiographers do not wear direct-reading pocket dosimeters since the type of alarm ratemeter used also incorporates the function of a self-reading pocket dosimeter." The licensee was cited with two violations: (1) a Severity Level IV violation of 10 CFR 34.33(f)(2) which requires each alarm ratemeter be set to give an alarm signal at a preset dose rate of 500 mR/hr, and (2) a Severity Level IV violation of 10 CFR 34.33(f)(3) which requires that special means be used to change the preset alarm function of each alarm ratemeter (in this case, the instrument setting could be changed externally by using a common screwdriver).

IMOB staff reviewed the technical specifications for the Victoreen Model 885, Series 886, personal dosimeter. It was found that this meter does not meet the requirements for an alarming ratemeter since it cannot be set to alarm at a preset dose rate as required by 10 CFR 34.33(f)(2). It "chirps" in proportion to the radiation intensity and accumulates the exposure like a direct-reading pocket dosimeter.

Based on the technical information, the licensee should have been cited with a Severity Level III violation against 10 CFR 34.33(a) for not using an alarming ratemeter rather than 10 CFR 34.33(f)(2). Although NMSS and the Office of Enforcement (OE) may rarely consider downgrading the severity level based upon unique facts and circumstances, this particular enforcement action was not discussed with either office. In addition, although the Model 885 dosimeter does not meet the requirements for an alarming ratemeter, a screwdriver is

Attached List for Memorandum dated: JUL 31 1992

SUBJECT: ALARMING RATEMETERS

Ronald R. Bellamy, Chief
Nuclear Material Safety and Safeguards Branch, RI

Douglas M. Collins, Chief
Nuclear Material Safety and Safeguards Branch, RII

John A. Grobe, Director
Nuclear Materials Safety Branch, RIII

L. Joe Callan, Director
Division of Radiation Safety and Safeguards, RIV

Gregory P. Yuhas, Chief
Nuclear Materials and Fuel Fabrication Branch, RV

John E. Glenn, Chief
Medical, Academic, and Commercial
Use Safety Branch, NMSS

Charles J. Haughney, Chief
Source Containment
and Devices Branch, NMSS

John Hickey, Chief
Fuel Cycle Safety Branch, NMSS

CP&L

Carolina Power & Light Company

SHEARON HARRIS NUCLEAR POWER PLANT
PO BOX 165
NEW HILL NC 27562

TELECOPY COVER SHEET

504-3162

1004

DATE SENT: _____

TIME SENT: _____

TO: ROGER PEDERSON

(919) 362-2816
FROM: KARL NEUSCHAEFER, CAROLINA POWER & LIGHT CO.

TELECOPY PHONE NUMBER: (301) 504-2259 (OR 2260, 2261)
VERIFICATION #: (301) 504-2262

CITY AND STATE: _____

NUMBER OF PAGES FOLLOWING COVER SHEET: 3

IF ANY PROBLEM OCCURS DURING TRANSMISSION, PLEASE
CONTACT OFFICE SERVICES AT (919) 362-2987.

OPERATOR NAME: _____

B/L

***** RESULTS OF *****
BWROG RP/ALARA SURVEY ON THE USE OF ELECTRONIC DOSIMETERS
NOVEMBER 1992

SURVEY QUESTION	YES	NO
Does your Utility use Electronic Dosimetry?	100%	0%
Does your Utility use Electronic Dosimetry to supplement the TLD and pocket ion chamber?	81%	19%
Does your Utility use the Electronic Dosimeter in place of the pocket ion chamber?	41%	59%
Do you use the Electronic Dosimeter to meet the requirement for a survey instrument in a high radiation/locked high radiation area?	64%	36%
Does your Electronic Dosimeter have an audible alarm based on dose rate?	86%	14%
Does your Electronic Dosimeter have an audible alarm based on accumulated exposure?	100%	0%
Do you require workers to exit the area anytime their Electronic Dosimeter alarms?	91%	9%
Do you allow a worker to remain in the area when his/her Electronic Dosimeter alarms due to dose rate provided that the individual moves to a lower dose area and clears the alarm?	30%	70%
Does the individual wearing Electronic Dosimetry receive special training or instructions on its use and what to do if it alarms?	100%	0%
Does your Utility address use of Electronic Dosimeters as part of General Employee Training?	82%	18%
Does your Utility have an advanced radiation worker training program that addresses the use of Electronic Dosimeters?	18%	82%
Are you considering the possible future use of Electronic Dosimeters as a dosimeter of record which will replace the TLD?	19%	81%
Have you placed extra precautions on the use of Electronic Dosimetry in light of recent industry administrative overexposures?	45%	55%
Are you using or planning to use the telemetry feature of the electronic dosimeter?	75%	25%

CONCLUSIONS & INFERENCES

- 22 BWR sites responded representing 89% of the US BWR's and 90% of the RP/ALARA Committee members.
- Type of Electronic Dosimeter being used and percent usage:

XETEC -	12%
MERLIN GERIN -	32%
EBERLINE -	4%
ALNOR -	28%
DOSITEC -	12%
SAIC -	8%
STEPHENS -	4%
- All responses were favorable for the Merlin Gerin, ALNOR, SAIC and Stephens Electronic Dosimeters.
- All responding Utilities utilize Electronic Dosimeters.
- All Electronic Dosimeters of responding Utilities have alarms based on accumulated exposure.
- All users of Electronic Dosimeters receive special training or instructions with most Utilities utilizing GET as the mechanism for instruction.
- Many Utilities are switching from the pocket ion chamber to the Electronic Dosimeter for all or part of their radiation workforce.
- Approximately 2/3 of the responding Utilities do take credit for the Electronic Dosimeter in place of a survey instrument for High Radiation Areas.
- Approximately one half of the responding Utilities have placed additional precautions on the use of Electronic Dosimeters in light of recent industry overexposures.
- Approximately 3/4 of the responding Utilities use, or intend to use, the telemetry feature.
- Approximately 1/5 of the responding Utilities are looking to the future for application of Electronic Dosimeters as a dosimeter of record.

POINT-OF-CONTACT LIST

STATION	POINT-OF-CONTACT	PHONE NUMBER
Browns Ferry	Rob L. Coleman	(205) 729-2586
Brunswick	Robert Pennock	(919) 457-6050
Clinton	Gary S. Kephart	(217) 935-8881 Ext. 3729
Cooper	Brian Hall	(402) 825-5679
Dresden	Paul Horvat	(815) 942-2920 Ext. 3553
"	Sigmund Cieszkiewicz	(815) 942-2920 Ext. 2640
Duane Arnold	Bob Hite	(319) 851-7625
Fermi-2	John Oetken	(313) 586-1158
FitzPatrick	Kurt Szeluga	(315) 349-6713
Grand Gulf	Lester Freeman	(601) 437-2161
Hatch	Steve Cowan	(912) 367-7857 Ext. 2568
Hope Creek	Dave Mason	(609) 339-3133
La Salle	Dave Daniels	(815) 357-6761 Ext. 2661
Limerick	Jim Flanagan	(215) 327-1200 Ext. 2249
Millstone	Bob Doherty	(203) 444-4379
Monticello	Warren Shinnick	(612) 295-1235
Nine Mile Point	Skip Taylor	(315) 349-4982
Oyster Creek	Bill Cooper	(609) 971-4499
"	Michael J. Slobodien	(609) 971-4709
Peach Bottom	Dave Barron	(717) 456-7014 Ext. 4829
Perry	Dan Ipoletta	(216) 259-3737 Ext. 5404
Quad Cities	Mark Zinnen	(309) 654-2241 Ext. 2743
"	Greg Powell	(309) 654-2241 Ext. 2744
River Bend	C. L. Fantacci	(504) 381-4589
WNP-2	Davin M. Truman	(509) 377-2050

< TRANSACTION REPORT >

12-21-1992(MON) 13:05

[RECEIVE]

NO.	DATE	TIME	DESTINATION STATION	PG.	DURATION	MODE	RESULT
6265	12-21	13:02	1 919 362 2400	4	0'02'38"	NORMAL	OK
				4	0'02'38"		