



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

IN RESPONSE, PLEASE
REFER TO: M820707B

July 13, 1982

OFFICE OF THE
SECRETARY

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MARGO BRIDGERS

MEMORANDUM FOR: ✓ Leonard Bickwit, Jr., General Counsel
FROM: Samuel J. Chilk, Secretary
SUBJECT: STAFF REQUIREMENTS - DISCUSSION AND POSSIBLE
VOTE ON CONTESTED ISSUES IN SUSQUEHANNA
OPERATING LICENSE PROCEEDING, 2:00 P.M.,
WEDNESDAY, JULY 7, 1982, COMMISSIONERS'
CONFERENCE ROOM (CLOSED MEETING)

The Commission was briefed on the May 7, 1982 OPE analysis of the ASLE initial decision which concludes that the Director, NRR should be authorized to issue a full power operating license for Susquehanna Units 1 and 2, with certain conditions.

The Commission voted unanimously to approve the draft order, attached to the May 7 OPE memorandum, as modified at the meeting, making the Board decision immediately effective; the General Counsel was instructed to circulate the revised Order prior to its release. Commissioner Gilinsky will attach separate views.
(OGC)

(Subsequently, the Order was circulated by the General Counsel on July 9, 1982.)

In connection with his approval, Commissioner Roberts stated his preference not to take multiple votes in OL reviews.

The Commission:

1. Requested a meeting with staff, FEMA, states and others in the fall to discuss the question of dosimeters for emergency workers (Commissioner Gilinsky would have preferred a meeting prior to voting on this Order);
(IE)
2. Asked the General Counsel to prepare a Commission proposal for a generic resolution to the above question;
(OGC)

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ENCLOSURE 3

3. Requested staff to include in their briefing on uncontested issues in Susquehanna, the status of the public information brochures; and
(NRR) (SECY Suspense: August, 1982)
4. Requested the General Counsel advise the staff immediately if the Court mandate in the S-3 case is issued.
(OGC)

cc: Chairman Palladino
Commissioner Gilinsky
Commissioner Ahearne
Commissioner Roberts
Commissioner Asselstine
Commission Staff Offices



Federal Emergency Management Agency

Washington, D.C. 20472

November 8, 1983

MEMORANDUM FOR: Richard W. Krimm
Chairman, Federal Radiological Preparedness
Coordinating Committee (FRPCC)

FROM: Carl R. Siebentritt *Carl Siebentritt*
Chairman, Interagency Subcommittee On Offsite
Emergency Instrumentation

SUBJECT: Dosimetry for Emergency Workers

This is to provide a final response by the FRPCC Subcommittee On Offsite Emergency Instrumentation to your memorandum dated March 4, 1983, on the same subject. Your memorandum requested that recommendations be made by the subcommittee on the following:

1. Definition of emergency worker;
2. The preferred (ideal) system of dosimetry for emergency workers;
3. The acceptable (minimum acceptable) system of dosimetry for emergency workers;
4. The position of States with operating commercial nuclear power plants in meeting the recommended, preferred and acceptable systems;
5. The status of FEMA (and other Federal agencies) furnished dosimeters--their performance characteristics, availability, and applicability for peacetime radiological emergency response;
6. Other sources of dosimeters--their applicability, performance, cost, and availability for radiological emergency response.

The subcommittee recommendations for items 1, 2, and 3 are provided in Attachment I. The subcommittee response to the other items are as follows:

- o Item 4: 25 of those States having a requirement for offsite planning for nuclear power plant accidents responded to the questionnaire which resulted in Attachment 4 of your memorandum. All 25 States provided for emergency worker dosimetry. However, 4 States admitted to limitations in operational capabilities. Most of the States use direct reading dosimeters having a range of 0-200 mR

as a component of their emergency worker dosimetry. The subcommittee believes that this range is too sensitive for a practical system and recommends that the attached guidance on emergency worker dosimetry be provided to all States.

- o Item 5: FEMA is the only federal agency which has provided instruments to the States. Large quantities were granted to the States starting in the 1950's. FEMA records show that the States have inventories of direct reading dosimeters as follows:

<u>0-200 mR</u>	<u>0-20 R</u>	<u>0-100 R</u>	<u>0-200 R</u>
80,000	97,000	65,000	2,100,000

(All figures are rounded - a breakout by State is available.)

FEMA experience with these instruments has shown that they are capable of providing radiological information with good accuracy if they are tested periodically in accordance with well-established FEMA guidance. An improved capability for calibrating dosimeters will be provided in FY 1984 to the State Radiological Systems Maintenance Shops. Also, FEMA has advised the States that FEMA granted dosimeters found to be defective will be repaired (if possible) by the FEMA Emergency Management Systems Test Facility (EMSTF). Tests conducted recently by EMSTF on 500 recently refurbished 20 R dosimeters, originally manufactured in the 1950's, showed that these dosimeters are capable of meeting the test and performance requirements specified in FEMA-REP-2 and ANSI N322-1977 "Inspection and Test Specifications for Direct and Indirect Reading Quartz Fiber Dosimeters." A test report is available. The subcommittee knows of no federal agency furnishing TLDs or film badges.

- o Item 6: Direct-reading dosimeters which meet the performance requirements of FEMA-REP-2 and ANSI N322-1977 are available from the private sector. The recommendations of Attachment I indicate that the States should develop their procurement requirements around ANSI N322-1977. Paragraph 4, Test Requirements of the ANSI standard should be included in the preparation of procurement specifications. In addition, FEMA has developed policy regarding dosimeters procured directly by the States. This policy is contained in the memorandum dated September 14, 1983, (Attachment II).

The cost of direct-reading dosimeters are estimated to be on the order of \$60 to \$100 depending upon quantity.

TLDs and film badges which meet requirements for emergency worker dosimetry are widely available at reasonable cost. The system which employs these instruments should conform to ANSI N13.11-1983, "Personnel Dosimetry Performance - Criteria for Testing."

Summary: The subcommittee believes that the foregoing and the attachments satisfy your requirements. This information will be included in the update of FEMA-REP-2 as appropriate.

Note: The subcommittee has received requests for the information given herein. For example, Margaret Reilly, Pennsylvania would like to have the definition of emergency worker. Please advise in writing, if draft copies may be furnished in response to these inquiries and, if so, any caveats that may apply.

Attachments (2)

DEFINITION OF AN EMERGENCY WORKER

An emergency worker is an individual who has a mission within the Plume Exposure EPZ which is essential to protect the health and safety of the public and who could be exposed to ionizing radiation from the plume or its deposition. This individual must be trained in the basic characteristics of ionizing radiation and its health effects. The individual must be able to determine his cumulative radiation dose with a direct reading dosimeter and know what to do when dose limits and turn-back values are reached.

Emergency workers may include the following: radiation monitoring personnel, traffic control personnel, evacuation vehicle drivers, fire and rescue personnel, EOC personnel, personnel carrying out backup alerting procedures and essential services or utility personnel. Essential services or utility personnel are considered emergency workers only when their services are required to protect the health and safety of the public.

DOSIMETRY SYSTEMS FOR EMERGENCY WORKERS

1. The Ideal System: Two direct reading dosimeters with different ranges that can adequately cover a range of radiation exposure from 1 R to 200 R. The dosimeter with the lowest range should be able to measure radiation exposures of at least 5 R, but no more than 20 R. The dosimeter with the highest range should be able to measure exposures of at least 100 R. The direct reading dosimeters should, as a minimum, meet ANSI Standard N322-1977, Inspection and Test Specification for Direct and Indirect Reading Quartz Fiber Pocket Dosimeters and be certified. The dosimeters should be tested annually for calibration accuracy and electrical leakage. The lowest range direct reading dosimeter allows the emergency worker to monitor his radiation exposure for turn-back values and/or administrative dose limits. The highest range dosimeter allows the emergency worker to monitor to above 75 rem whole-body dose which is the EPA lifesaving PAG for emergency workers. The reason for recommending an upper limit of 200 R is that there are many direct reading dosimeters available with this range (e.g., CDV-742) and it has adequate sensitivity to measure approximately 2 R increments of exposure.

In addition a permanent record dosimeter consisting of a multiple chip TLD should be provided as a backup device for the direct reading dosimeters and to provide a legal record. The TLD should be read by a processor accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) in accordance with ANSI Standard N 13.11-1983, Personnel Dosimetry Performance-Criteria for Testing.

2. Minimum Acceptable System: One direct reading dosimeter with a minimum range capable of measuring a radiation exposure of at least 5 R and a maximum range that shall not exceed 20 R. This dosimeter shall be certified, annually leak tested and meet ANSI Standard N 322-1977. In addition each emergency worker shall be provided a permanent record dosimeter which is read by an accredited processor under NVLAP.

MANAGEMENT
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MEMORANDUM FOR: Regional Directors
~~Acting Regional Director~~

FROM: Deputy Associate Director
State and Local Programs and Support

SUBJECT: Testing of Radiological Instruments Procured by the
States for Radiological Emergency Preparedness.

Some States have received funding from utilities for use in procuring radiological instruments for emergency preparedness capabilities under NUREG 0654/FEMA-REP-1. The Pennsylvania Emergency Management Agency (PEMA) procured 2,500, 0-20R dosimeters and requested that FEMA assist in quality assurance testing. Tests were performed by the FEMA Emergency Management Systems Test Facility and the results reported to PEMA. Tests were also performed on a similar procurement by the State of Maine. Other States have expressed the need of the same services.

Our experience with Pennsylvania and Maine indicates that such testing is very labor intensive and would constitute an overwhelming workload if continued. In addition, it is not an appropriate FEMA function should the capability be available in the private sector. Therefore, FEMA will not accept any further requests for such testing.

FEMA has no objection if the State Maintenance and Calibration facilities are used for quality assurance testing of instrumentation for REP and other contingencies, to the extent that the shop has the capability. To this end, FEMA will shortly be supplying the State shops with an improved dosimeter calibration fixture for use with the CDV-794 calibrators. If the State shops do not have the testing capability, the use of qualified private sector resources should be sought by the States.

Our experience also has revealed the need for a policy statement on instrumentation procured by the States. This policy is as follows:

- o FEMA will not provide quality assurance or acceptance testing support to the States.
- o FEMA will permit the use of the State Maintenance and Calibration shops, within the limitations of the capabilities and equipment, for such testing.

- o Upon written request, FEMA will provide technical advice to the States regarding quality assurance testing. Such requests should be submitted through Regions and endorsed to the attention of the Emergency Management Programs Office.
- o FEMA will not assist in the preparation of, or evaluation and review of State procurement specifications. Similarly, FEMA will not be a party to any determination relating to the Contractor's performance against State procurement specifications.
- o Upon written request, FEMA will repair all dosimeters which were originally procured by FEMA predecessor agencies and granted to the States. This includes all models. However, it must be understood by the States that certain models will have low yields. In all cases the same dosimeters sent in for repair will be returned. Those that can not be repaired will also be returned if the State so requests. The repair will be performed by the FEMA Emergency Management Systems Test Facility.

All questions regarding this policy should be addressed to the Emergency Management Programs Office.



Federal Emergency Management Agency

Washington, D.C. 20472

DEC 30 1983

MEMORANDUM FOR: Members of the Federal Radiological Preparedness
Coordinating Committee (FRPCC)

FROM: ~~Assigned~~ Richard W. Krimm
Chairman, FRPCC

SUBJECT: Dosimetry for Emergency Workers

On March 4, 1983, I requested the Chairman of the Subcommittee on Offsite Emergency Instrumentation to make recommendations on the following:

1. Definition of Emergency Worker;
2. The preferred (ideal) system of dosimetry for emergency workers;
3. The acceptable (minimum acceptable) system of dosimetry for emergency workers;
4. The position of States with operating commercial nuclear power plants in meeting the recommended, preferred, and acceptable systems;
5. The status of Federal Emergency Management Agency (and other Federal agencies) furnished dosimeters--their performance characteristics, availability, and applicability for peacetime radiological emergency response; and
6. Other sources of dosimeters--their applicability, performance, cost, and availability for radiological emergency response.

The Subcommittee has been working on this assignment and the Chairman provided a final written response to me dated November 8, 1983, Subject: Dosimetry for Emergency Workers.

Please review the attached response from the Subcommittee Chairman and provide your agency's comments, recommendation, and/or concurrence to me by January 26, 1984. In particular, I request that you review and comment on Attachment I pertaining to the definition of an Emergency Worker.

Attachment
As Stated