

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS
WASHINGTON, D.C. 20555

January 23, 1992

NRC INFORMATION NOTICE NO. 92-08: REVISED PROTECTIVE ACTION GUIDANCE FOR
NUCLEAR INCIDENTS

Addressees

All fuel cycle and materials licensees authorized to possess large quantities of radioactive material.

Purpose

The U.S. Nuclear Regulatory Commission (NRC) is issuing this information notice to notify addressees of recent revisions to the U.S. Environmental Protection Agency (EPA) Manual of Protective Action Guides and Protective Actions for Nuclear Incidents (PAG Manual). It is expected that recipients will review the information for applicability to their operations and consider actions, as appropriate, to update emergency response procedures. Suggestions contained in this information notice are not new NRC requirements, and no written response is required.

Description of Circumstances

On October 15, 1991, EPA revised Chapters 1, 2, and 5, and added a new Appendix C to its PAG Manual. The EPA's transmittal letter to emergency response planners is attached. EPA revised this manual to incorporate new dose units and to expand the scope of the manual to include nonreactor facilities, although the primary focus of the manual is still nuclear power reactors.

Discussion

The revisions update the PAG Manual in several important ways. The most important revision is the use of committed effective dose equivalent units, to express the protective action guides, instead of using whole-body dose units. This revision allows the use of a total dose that includes: 1) external exposure from airborne radioactive material; 2) internal exposure from inhaled airborne radioactive material; and 3) external exposure from radioactive materials deposited on the ground.

Another important revision clarifies what offsite protective actions are most suitable. EPA emphasizes that, for most incidents, under normal conditions, evacuation of the public should be initiated at a projected dose of 1 rem. Sheltering the public may be used as an alternative to evacuation, under certain circumstances.

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3/4/92


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An important factor to consider when preparing for an emergency is that most incidents involving radioactive materials at nonreactor facilities are likely to occur quickly and with little warning. Therefore, any necessary offsite protective actions must be taken quickly to be effective. Usually, there will not be enough time for complicated dose projections or lengthy consultations, during an incident. Licensees should be prepared to recommend offsite protective actions to local officials immediately after an incident occurs. This can only be accomplished by evaluating potential consequences during the planning process and having preliminary recommendations for offsite protective actions ready for use before an incident occurs.

Chapter 2 of the PAG Manual also provides guidance for controlling doses to emergency workers onsite and should be discussed with those offsite emergency workers (i.e., firemen, etc.) likely to respond to your facility during an emergency.

Requests for copies of the PAG Manual can be directed to Allan C.B. Richardson (ANR-460), Office of Radiation Programs, Environmental Protection Agency, Washington, D.C. 20460.

This information notice requires no specific action or written response. If you have any questions about the information in this notice, please contact one of the technical contacts listed below or the appropriate regional office.


Richard E. Cunningham, Director
Division of Industrial and
Medical Nuclear Safety
Office of Nuclear Material Safety
and Safeguards

Technical contacts: Kevin M. Ramsey, NMSS
(301) 504-2534

W. Scott Pennington, NMSS
(301) 504-2693

Attachments:

1. Letter from EPA Announcing Revision of the PAG Manual
2. List of Recently Issued NMSS Information Notices
3. List of Recently Issued NRC Information Notices



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OCT 15 1991

OFFICE OF
AIR AND RADIATION

Dear Emergency Response Planner:

Enclosed are revised pages for your copy of the Manual of Protective Action Guides and Protective Actions for Nuclear Incidents. This Manual provides the Environmental Protection Agency's (EPA) recommendations, pursuant to the Federal Emergency Management Agency's regulations under 44 CFR Part 351, for the levels of radiation exposure at which action should be taken to protect members of the public in the event of a nuclear accident. These revisions replace the 1980 versions of Chapters 1, 2 and 5, which were reprinted and distributed in February 1990, and add a new Appendix C. The balance of the Manual, which contains the Protective Action Guides (PAGs) for relocation and a reprint of "Recommendations for Accidental Radioactive Contamination of Human Food and Animal Feeds," published by the Food and Drug Administration (FDA) in 1982, should be retained as is. Previous versions of the Title Page, Preface, and Table of Contents should also be discarded and replaced by the enclosed new versions. If you do not have the complete manual, please advise us, and we will send you a new copy.

These new Chapters update the 1980 Guidance for the early phase of a nuclear incident in several important ways. First, they adopt current health physics practice for dose units. The principal PAG for protection against an airborne radioactive plume is now expressed in terms of the committed effective dose, rather than the previous whole body dose. This more general unit encompasses the risks from all radionuclides, and the PAG now addresses doses from all significant pathways. Chapter 5 contains extensive new tables which address important pathways for all of the radionuclides that are likely to be significant at nuclear incidents, for both commercial and Federal facilities.

Second, we have clarified the language regarding use of the PAG range. Guidance for protective actions is, we believe, most useful when the complexity of judgments required of decision-makers at the time of an incident is minimized. The guidance clarifies that the upper end of the PAG range is intended for use to accommodate special groups in the population and abnormal circumstances present at the time of an incident. It is not intended to accommodate differing views on the level of risk from a given dose, or on the risk level at which protective action should be initiated under normal circumstances. Finally, the

limits for workers exposed during the response to an incident have been refined.

These revised recommendations are intended to be phased into use in an orderly fashion. In the case of Nuclear Regulatory Commission (NRC) licensees, a period of time consistent with their implementation of the new 10 CFR Part 20 regulations is envisioned. The NRC will be advising its licensees, in due course, on appropriate steps to carry this out. At that time, the State emergency management agency and the State agency responsible for radiological protection should jointly work with NRC and their licensees to ensure a coordinated implementation. In the meantime, plans and procedures developed based on current guidance are acceptable. It is anticipated that the substantive change to most plans developed using the current guidance will be to the dose projection methodology, and revision to other major planning provisions will not be required at most of NRC's licensed facilities. In the case of Federal facilities, these recommendations are appropriate for use in any new, or at the time of revision of any existing, emergency response plans.

It is our hope that these expanded and updated recommendations will prove useful in implementing your emergency response functions. We will appreciate you advising us of your experience in applying these recommendations, including any problems encountered. We are continuing work to develop PAGs for drinking water and, in cooperation with FDA, revised PAGs for food. When this development is completed, and one or two years experience has been gained in the application of these recommendations, EPA intends to propose all of these PAGs to the President for formal incorporation into Federal Radiation Protection Guidance. In this sense, these current PAGs must still be regarded as interim recommendations. Requests for additional copies of the PAG Manual, and any questions regarding this revised Protective Action Guidance should be directed to Allan C.B. Richardson (ANR-460), Office of Radiation Programs, Environmental Protection Agency, Washington, D.C. 20460.

Sincerely,



Margo T. Oge
Acting Director, Office of
Radiation Programs

Enclosures

LIST OF RECENTLY ISSUED
NMSS INFORMATION NOTICES

Information Notice No.	Subject	Date of Issuance	Issued to
91-86	New Reporting Requirements for Contamination Events at Medical Facilities (10 CFR 30.50)	12/27/91	All licensees authorized to use byproduct materials for human use.
91-84	Problems with Criticality Alarm Components/Systems	12/26/91	All Nuclear Regulatory Commission (NRC) fuel cycle licensees, interim spent fuel storage licensees, and critical mass licensees.
91-71	Training and Supervision of Individuals Supervised by an Authorized User	11/12/91	All NRC medical licensees.
91-66	(1) Erroneous Data in "Nuclear Safety Guide, TID-7016, Revision 2," (NUREG/CR-0095, ORNL/NUREG/CSD-6 (1978)) and (2) Thermal Scattering Data Limitation in the Cross-Section Sets Provided with the KENO and SCALE Codes	10/18/91	All fuel cycle licensees, critical mass licensees, interim spent fuel storage licensees, and all holders of operating licenses or construction permits for test, research, and nuclear power reactors.
91-65	Emergency Access to Low-Level Radioactive Waste Disposal Facilities	10/16/91	All NRC licensees.
91-60	False Alarms of Alarm Ratemeters Because of Radiofrequency Interference	09/24/91	All Nuclear Regulatory Commission (NRC) licensees authorized to use sealed sources for industrial radiography
91-49	Enforcement of Safety Requirements for Radiographers	08/15/91	All Nuclear Regulatory Commission (NRC) licensees authorized to use sealed sources for industrial radiography.

LIST OF RECENTLY ISSUED
NRC INFORMATION NOTICES

Information Notice No.	Subject	Date of Issuance	Issued to
92-07	Rapid Flow-Induced Erosion/- Corrosion of Feedwater Piping	01/09/92	All holders of OLs or CPs for pressurized water reactors.
92-06	Reliability of ATWS Mitiga- tion System and Other NRC Required Equipment Not Controlled by Plant Tech- nical Specifications	01/15/92	All holders of OLs or CPs for nuclear power reactor:
92-05	Potential Coil Insulation Breakdown in ABB RXMH2 Relays	01/08/92	All holders of OLs or CPs for nuclear power reactors
92-04	Potter & Brumfield Model MDR Rotary Relay Failures	01/06/92	All holders of OLs or CPs for nuclear power reactors
92-03	Remote Trip Function Failures in General Electric F-Frame Molded-Case Circuit Breakers	01/06/92	All holders of OLs or CPs for nuclear power reactors
92-02	Relap5/Mod3 Computer Code Error Associated with the Conservation of Energy Equation	01/03/92	All holders of OLs or CPs for nuclear power reactors.
92-01	Cable Damage Caused by Inadequate Cable Installa- tion Procedures and Controls	01/03/92	All holders of OLs or CPs for nuclear power reactors.
91-87	Hydrogen Embrittlement of Raychem Cryofit Couplings	12/27/91	All holders of OLs or CPs for nuclear power reactors.
91-86	New Reporting Requirements for Contamination Events at Medical Facilities (10 CFR 30.50)	12/27/91	All licensees authorized to use byproduct materials for human use.

OL = Operating License
CP = Construction Permit

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Original signed by *John Green*
Richard E. Cunningham, Director
Division of Industrial and
Medical Nuclear Safety
Office of Nuclear Material Safety
and Safeguards

Technical contacts: Kevin M. Ramsey, NMSS
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Editor/NMSS
EKraus
1/09/92

OFC	:IMOB	:IMOB	:IMOB	:IMSB	:IMNS	:IMNS	:
NAME	:KRamsey/11	:CTrottier	:JGrobe	:JHickey	: JGreeff	:RECunningham	:
DATE	:1/14/92	:1/14/92	:1/14/92	:1/15/92	:1/ /92	:1/15/92	:

OFFICIAL RECORD COPY
IN 92-08

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OFC	:IMOB	:IMOB	:IMOB	:IMSB	:IMNS	:IMNS
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DATE	:1/14/92	:1/14/92	:1/14/92	:1/15/92	:1/ /92	:1/16/92

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1/9/92

OFC	:IMOB	:IMOB	:IMOB	:IMSB	:IMNS	:IMNS	:
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IN/NUCLEAR INCIDENTS

LTS PROGRAM CODES FOR GENERATING LICENSEE MAILING LABEL
FOR IN 92-08, REVISED PROTECTIVE ACTION GUIDANCE FOR NUCLEAR INCIDENTS."

1100	1110	1120
2110	2500	3211
3212	3213	3520
3521	3610	3611
3612	3613	11300
11400	21130	21200
21210	21240	21310
21320	23200	