



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

SECRETARIAT RECORD COPY

February 11, 1982

A-12

MEMORANDUM FOR: Chairman Palladino
FROM: William J. Dircks
Executive Director
for Operations
SUBJECT: EVACUATION

In response to your November 27, 1981 memorandum to me regarding criteria for ordering evacuation in event of an emergency, the staff has prepared the enclosed information. Enclosure 1 provides the current methodology for determining protective action recommendations. The underlying bases for these recommendations are the EPA Protective Action Guides which are dose thresholds at which various protective actions are called for. Decisions to recommend protective actions, including evacuations, are based on the best estimate of what is actually occurring during an accident, in particular plant and containment parameter measurements. This "best estimate" philosophy is emphasized by the emergency preparedness appraisal teams to ensure no over-reaction based on overly conservative dose calculations during an actual emergency.

While decisions on recommended protective actions are based on actual conditions at the plant, the size of the emergency planning zones (the 10 mile plume exposure pathway and the 50 mile ingestion exposure pathway) and the associated warning systems are based on a spectrum of source terms--essentially those used in WASH-1400, which are now considered to be conservative. Our current understanding of that postulated source term is that it may be too high by a factor of 2 to 10. Because we cannot technically justify the precise magnitude of the conservatism in the source term at this time, we believe it premature to rethink the size of the emergency planning zones. Enclosure 2 gives the current schedule for short- and long-term research in the source term program.

With regard to current status of work on NUREG-0771, Enclosure 3 describes the on-going efforts. We expect to revise that document by June 1, 1982.

William J. Dircks
Executive Director
for Operations

Enclosures:
See next page

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EXA

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Chairman Palladino

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Enclosures:

1. Current Methodology
2. Current Schedule for Short and Long Term Research
3. Current Status of NUREG-0771

cc w/ enclosures:

Commissioner Gilinsky
Commissioner Bradford
Commissioner Ahearne
Commissioner Roberts
SECY
OGC
OPE

METHODOLOGY FOR PROTECTIVE ACTION RECOMMENDATIONS

Conditions under which protective actions recommended have been standardized by Appendix 1 to NUREG-0654, Rev. 1. (Evacuation is only recommended for major core damage.) The underlying bases for these recommendations are the EPA Protective Action Guides (PAGs). The actions have been hinged as much as possible to plant conditions, however, to avoid over-reaction based on calculations of offsite exposures which may be based on insufficient information early in an accident.

NUREG-0654 presents a series of recommended constraints on protective actions:

1. Calls for notification of authorities only on Unusual Event and Alert Classes.
 - a. Provides authorities confidence they are "part of the action."
 - b. Provides public confidence that authorities are looking out for the interest of the local public.
 - c. Increases the likelihood that unnecessary evacuations will not be initiated by bringing offsite emergency organizations into play in an orderly manner.
2. Calls for decision on notifying public for Site Area Emergency and only protective actions in the immediate plant vicinity for certain cases (e.g., core damage controlled, containment intact - sheltering recommended unless EPA PAG's would be exceeded.)
3. Calls for notification of the public for all General Emergencies. Immediate action is sheltering followed by a decision on what the appropriate protective action is (see pp 1-16, 17 of Appendix 1 to NUREG-0654, Rev. 1, attached).
 - a. Core damage not controlled, containment presently intact - precautionary evacuation, if time is available (2, 5 or 10 miles depending on whether and to what extent iodine and particulate material are in containment atmosphere).
 - b. Core damage not controlled, containment failed or failure imminent - sheltering until cloud has passed, then relocation from contaminated area.

A decision on whether to evacuate depends principally on what is measured in containment and what the core and containment status are. The recommendations for protective actions would be refined by dose calculations which would take into account the quantities and types of radioactive material measured or estimated to be available for release and current and projected meteorological conditions. Licensees are encouraged to use best estimate, rather than conservative, assumptions when direct measurements are not available (e.g., containment leak rate test values rather than design basis values).

SCHEDULE

