

50-443
50-444

FEB 25 1986

Mr. Bob Moore
Lot 2 Lindenshire
Exeter, New Hampshire 03833

Dear Mr. Moore:

This letter is in response to your letter dated February 1, 1986 concerning radiation protection in the vicinity of a nuclear power plant during an unplanned release. As a resident living within 10 miles of the Seabrook Station, you will receive basic emergency planning information on a yearly basis. This information should include general information as to the nature and effects of radiation, and a listing of local broadcast stations that will be used for dissemination of information during an emergency.

Specific technical information you requested about protection factors is enclosed in Table 1. Table 2 lists radionuclides associated with nuclear power plant accidents which are thought to have a significant contribution to exposure. Further information in this regard is contained in NUREG-0654/FEMA-REP 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants." Additional information can be found in your local Public Document Room or Federal Document Repository.

If you have any additional questions or specific concerns relative to the Seabrook Station, your local emergency planners can work through the Federal Emergency Management Agency and the utility to provide you with information and answers relative to establishing a safe evacuation plan.

Sincerely,

Original Signed By
Thomas T. Martin

Thomas T. Martin, Director
Division of Radiation Safety
and Safeguards

Attachments: As Stated

B603060090 B60225
PDR ADOCK 05000443
H PDR

RI:DRSS
Hawxhurst
2/21/86

RI:DRSS
Harpster
2/21/86

RI:DRSS
Bellamy
2/24/86

RI:DRSS
Martin
2/25/86

OFFICIAL RECORD COPY

11
JED

TABLE I (a)

Typical Dose Reduction Factors (Cloud and Ground)

| | <u>Cloud</u> | <u>Ground</u> |
|--|----------------|-----------------------|
| Brick building (no basement) | 0.6 | 0.2 |
| Window panes | 1.0 | --- |
| Woodframe home (no basement) | 0.9 | 0.4 |
| Large office or industrial-type building | 0.2 or less | 0.01 (1) 0.005 (2) |

- (1) Upper floors of multi-story structure
- (2) Basement of multi-story structure

(a) Lindell, Mike, "Planning Concepts and Design Criteria for Sheltering and Evacuation in a Nuclear Power Plant Emergency". Atomic Industrial Forum, Inc., National Environmental Studies Project AIF/NESP-031, June 1985.

Table 2 (b)

RADIONUCLIDES WITH SIGNIFICANT CONTRIBUTION TO DOMINANT EXPOSURE MODES

| <u>Radionuclides with Significant Contribution to Thyroid Exposure</u> | | <u>Radionuclides with Significant Contribution to Whole Body Exposure</u> | | <u>Radionuclides with Significant Contribution to Lung Exposure* (Lung only controlling when thyroid dose is reduced by iodine blocking or there is a long delay prior to releases).</u> | |
|--|-------------------------|---|-------------------------|--|-------------------------|
| <u>Radionuclide</u> | <u>Half Life (days)</u> | <u>Radionuclide</u> | <u>Half Life (days)</u> | <u>Radionuclide</u> | <u>Half Life (days)</u> |
| I-131 | 8.05 | I-131 | 8.05 | I-131 | 8.05 |
| I-132 | 0.0958 | Te-132 | 3.25 | I-132 | 0.0958 |
| I-133 | 0.875 | Xe-133 | 5.28 | I-133 | 0.875 |
| I-134 | 0.0366 | I-133 | 0.875 | I-134 | 0.0366 |
| I-135 | 0.280 | Xe-135 | 0.384 | I-135 | 0.280 |
| Te-132 | 3.25 | I-135 | 0.280 | Cs-134 | 750 |
| | | Cs-134 | 750 | Kr-88 | 0.117 |
| | | Kr-88 | 0.117 | Cs-137 | 11,000 |
| | | Cs-137 | 11,000 | Ru-106 | 365 |
| | | | | Te-132 | 3.25 |
| | | | | Ce-144 | 284 |

(b) "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants", USNRC, NUREG-0654/FEMA-REP-1, November 1980.

(c) "Calculation of Reactor Accident Consequences", Appendix VI to Reactor Safety Study, WASH-1400, USNRC, October 1975.

*Derived from the more probable Reactor Safety Study core melt categories and from postulated design basis accident releases.