WISCONSIN PUBLIC SERVICE CORPORATION Kewaunee Nuclear Power Plant EMERGENCY PLAN IMPLEMENTING PROCEDURE	NO. EP-ENV-3H REV. B TITLE: Protective Action Recommendations DATE: JUN 21 1983 PAGE 1 of 6
REVIEWED BY [signature]	APPROVED BY [signature]

1.0 APPLICABILITY

This procedure applies to all emergency situations when environmental monitoring and dose assessment is necessary, and Environmental Monitoring Teams have been dispatched.

2.0 PRECAUTIONS

2.1 Accurate recording of data acquired from the Radiological Protection Director (RPD) or Environmental Monitoring Team (EMT) Coordinator is essential.

2.2 All conclusions drawn from environmental data must be accurately documented.

3.0 REFERENCES

None

4.0 INSTRUCTIONS

4.1 Short Term Protective Action Determinations

4.1.1 Obtain the printer output or completed data sheets and worksheets for the dose projection and field sample evaluations.

4.1.2 Compare these results for all points of interest to TABLES ENV-3H.1 as follows:

TABLE ENV-3H.1: Take the projected Dose(s) and enter the chart at the appropriate level by projected Doses listed in the left hand column. Read across from the Doses and obtain the corresponding Recommended Actions and comments.

NOTE: EPA guidelines state that protective action recommendations should be based on the projected child thyroid dose.

4.1.3 Record the impact times on the Field Maps at the points of interest.

4.1.4 Evaluate the impact time, plant conditions (past, present and future), weather conditions, and evacuation time estimates, and determine the most beneficial and appropriate Protective Actions the public can take to reduce their exposure.

4.1.5 Verify previous recommendations, if any are still valid, for any new data that is now available.

4.1.6 Report Protective Action Recommendations to the Emergency Response Manager.

4.1.7 Repeat steps 4.1.2 through 4.1.6 as necessary as new information is received from the Environmental Monitoring Teams.

4.2 Long Term Protective Action Determinations

4.2.1 Obtain data from the results of ground deposition samples reported by the Environmental Consultant.

4.2.2 Compare these results to Table ENV-3H.2 to determine the appropriate Protective Action Recommendations as follows.

Table ENV-3H.2:

Section I, Part A: Compare the projected dose above ground, Ground Contamination level measurements, or exposure rates 1 meter above ground and at or above these base limits proceed to Part B for the Recommended Protective Actions.

Section II, Part A: Evaluate the results of the Environmental Consultant. The results of a specific nuclide concentration (I-131, Cs-137, Sr-90, and/or Sr-89) and the medium in which it was obtained are listed for comparison against the reported results. For example, if a milk analysis was reported by the Environmental Consultant at 0.012 uc/ml of I-131, proceed to the I-131 column under the heading Nuclide. Then read to the right for the Action Levels and concentrtion in Milk & Water Preventive or Emergency Levels, and compare the levels to the reported result. If the Reported result is less than the preventive level, no protective action is necessary. If the results are higher than the preventive or Emergency level, then proceed to the next page and recommend the listed protective action recommendations, as in the example, the recommendations under preventive level.

4.2.3 Record Protective Action Recommendations in EPD Log Book.

4.2.4 Report Protective Action Recommendations to the Emergency Response Manager.

4.2.5 Repeat steps 4.2.1 through 4.2.4 as necessary as new information is received from the Environmental Consultant.

TABLE ENV-3H.1

RECOMMENDED PROTECTIVE ACTIONS TO REDUCE WHOLE BODY AND THYROID DOSE FROM EXPOSURE TO A GASEOUS PLUME

Projected Dose (Rem) to Individual in General Public	Recommended Actions[a]	Comments
Whole body < 1 or Thyroid < 5	No planned Protective Actions.[b] State may issue an advisory to seek shelter and await further instructions. Monitor environmental radiation levels.	Previously recommended Protective Actions may be reconsidered or terminated.
Whole body 1 to < 5 or Thyroid 5 to < 25	Seek shelter as a minimum. Consider evacuation. Evacuate unless constraints make it impractical. Monitor environmental radiation levels. Control access to the affected area.	If constraints exist, special consideration should be given for evacuation of children and pregnant women.
Whole body 5 and above or Thyroid 25 and above	Conduct mandatory evacuation. Monitor environmental radiation levels and adjust area for mandatory evacuation based on these levels. Control access to the affected areas.	Seeking shelter would be an alternative if evacuation were not immediately possible.

(a) These actions are recommended for planning purposes. Protective Action decisions at the time of the incident must take existing conditions into consideration.

(b) At the time of the incident, officials may implement low-impact Protective Actions in keeping with the principle of maintaining radiation exposure as low as reasonably achievable.

Reference: Manual of Protective Action Guides and Protective Actions for Nuclear Incidents, EPA-520/1-75-001, September 1975, U.S. Environmental Protection Agency.

TABLE ENV-3H.2

GUIDELINES FOR PROTECTION AGAINST INGESTION OF CONTAMINATION

I. GROUND CONTAMINATION

A. Action Levels

1. Projected whole-body dose above the ground $\geq$ 1 REM.

2. Ground Contamination levels $\geq 4.4 \times 10^7$ DPM/100cm^2 at t = 1 hr post-accident

3. Exposure rate $\geq$12 mR/hr at 1 meter above ground at t = 1 hr post-accident

B. Recommended Protective Actions

1. Evacuation of affected areas.

2. Restriction of entry to contaminated offsite areas until radiation level has decreased to State approved levels.

II. FOOD AND WATER CONTAMINATION

A. Action Levels

Preventive Level: 0.5 REM WB or bone, 1.5 REM thyroid

Emergency Level: 5 REM WB or bone, 15 REM thyroid

	Concentration in Milk or Water		Total Intake via all Food and Water Pathways		Pasture Grass (Fresh Weight)	
Nuclide*	Preventive Level (uCi/l)	Emergency Level (uCi/l)	Preventive Level (uCi)	Emergency Level (uCi)	Preventive Level (uCi/kg)	Emergency Level (uCi/kg)
I-131 (thyroid)	0.012	0.12	0.09	0.9	0.27	2.7
Cs-137 (whole body)	0.34	3.4	7	70	3.5	35
Sr-90 (bone)	0.007	0.08	0.2	2.0	0.7	7
Sr-89 (bone)	0.13	1.3	2.6	26	13	130

* If other nuclides are present, Reg. Guide 1.109 will be used to calculate the dose to the critical organ(s). Infants are the critical segment of the population.

TABLE ENV-3H.2 (cont'd)

GUIDELINES FOR PROTECTION AGAINST INGESTION OF CONTAMINATION

RECOMMENDED PROTECTIVE ACTIONS

Preventive Level	Emergency
1. Removal of lactating dairy cows from contaminated pasture and substitution of uncontaminated stored feed.	Isolate feed and water from its introduction into commerce after considering:
2. Substitute source of uncontaminated water.	a. availability of other possible actions;
3. Withhold contaminated milk from market to allow radioactive decay.	b. importance of particular food in nutrition;
4. Divert fluid milk to production of dry whole milk, butter, etc.	c. time and effort to take action;
	d. availability of other foods.

References

U.S. Food and Drug Administration, 21 CFR Part 1090, Federal Register, Vol. 43, No. 242, Dec. 15, 1978.