

RELATED CORRESPONDENCE

LILCO, March 21, 1984

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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Before the Atomic Safety and Licensing Board

In the Matter of)	
)	
LONG ISLAND LIGHTING COMPANY)	Docket No. 50-322-OL-3
)	(Emergency Planning
(Shoreham Nuclear Power)	Proceeding)
Station, Unit 1))	

LILCO'S TESTIMONY ON CONTENTION 81 (INGESTION PATHWAY)

PURPOSE

Contention 81 questions the adequacy of LILCO's emergency planning for the 50-mile Ingestion Pathway EPZ. This testimony will demonstrate that LILCO's Emergency Plan embodies adequate planning and procedures for the ingestion exposure pathway. Specifically, OPIP 3.6.6 of LILCO's Plan sets forth detailed procedures for implementing preventive and emergency protective actions governing the treatment and/or disposition of lactating dairy animals, milk, water, fruit, vegetables and other food-stuffs. This testimony will further demonstrate that LILCO's Plan provides for the necessary personnel, facilities, equipment and communications network to implement such protective actions.

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Attachments

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|--------------|---|
| Attachment 1 | OPIP 3.6.6 |
| Attachment 2 | OPIP 3.5.3 |
| Attachment 3 | State of New York - Dairy Farms |
| Attachment 4 | State of New York - Milk Dealers, Operating
Plants and Ice Cream Plants |
| Attachment 5 | New York State - Farmstand Information |
| Attachment 6 | Surface Water and Groundwater Sources For
Community Water Systems in the New York
State 50-mile Emergency Planning Zone |
| Attachment 7 | Draft Federal Radiological Emergency Re-
sponse Plan, 49 Fed. Reg. 3578 (1984) |

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TESTIMONY

1. Q: Please state your name and business address.

A: [Cordaro] My name is Matthew C. Cordaro. My business address is Long Island Lighting Company, 175 Old Country Road, Hicksville, New York 11801.

[Daverio] My name is Charles A. Daverio. My business address is Long Island Lighting Company, 175 Old Country Road, Hicksville, New York 11801.

[Miele] My name is Michael L. Miele. My business address is Long Island Lighting Company, Shoreham Nuclear Power Station, Post Office Box 628, Wading River, New York 11792.

[Porter] My name is Sydney W. Porter, Jr. My business address is Porter Consultants, Inc., 125 Argyle Road, Ardmore, Pennsylvania 19003.

[Watts] My name is Richard J. Watts. My business address is Impell Corporation, 225 Broad Hollow Road, Melville, New York 11747.

2. Q: Please state your professional qualifications.

A: [Cordaro] I am Vice President, Engineering for LILCO. My professional qualifications are being offered into evidence as part of the document entitled "Professional Qualifications of LILCO Witnesses." I am participating on this panel to provide the LILCO management perspective on Emergency Planning, and to answer any questions pertinent to management. My role in emergency planning for Shoreham is to ensure that the needs and requirements of emergency planning are being met, and that the technical direction and content of emergency planning are being conveyed to corporate management.

[Daverio] I am LILCO'S Supervisor of Emergency Planning and Regulatory Services. I am also Assistant Manager of LILCO'S Local Emergency Response Implementing Organization (LERIO). My professional qualifications are being offered into evidence as part of

the document entitled "Professional Qualifications of LILCO Witnesses." As Supervisor of Emergency Planning and Assistant Manager of LERIO, I am responsible for implementing LILCO's Local Emergency Response Plan. As such, I am familiar with the issues surrounding this contention.

[Miele] I am employed by LILCO as the Radiation Protection Section Supervisor in the Nuclear Engineering Department. My professional qualifications are being separately offered into evidence as part of the document entitled "Professional Qualifications of LILCO Witnesses." I am responsible for the overall management and technical direction of all onsite and offsite aspects of radiological protection for the Shoreham Nuclear Power Station. As such, I am familiar with the issues surrounding this contention.

[Porter] I am President of Porter Consultants, Inc. My professional qualifications are being offered into evidence as part of the document entitled "Professional Qualifications of LILCO Witnesses." My familiarity with the issues surrounding this contention stems from some 23 years of experience in the fields of health physics, radiological environmental

monitoring, emergency planning, nuclear engineering and radiochemistry, including the assessment of onsite releases and management of offsite emergency environmental surveillance at Three Mile Island Station after the Unit 2 accident in 1979.

[Watts] I am the Health Physics Supervisor for the Radiological Services Section-Northeast Region of Impell Corporation. My professional qualifications are being offered into evidence as part of the document entitled "Professional Qualifications of LILCO Witnesses." I have been retained by LILCO to serve as one of the Radiation Health Coordinators in the Local Emergency Response Organization (LERO) and have participated in LERO drills in this capacity. As such, I am familiar with the issues surrounding this contention.

3. Q: Would you please summarize the issues raised by SC Contention 81?

A: In essence, Suffolk County Contention 81 questions the adequacy of LILCO'S emergency planning for the 50-mile Ingestion Pathway EPZ. Specifically, the Contention raises concerns that:

Further Preamble to Contentions 78-83. 10 CFR Section 50.47(b)(10) requires that protective actions for the ingestion exposure pathway EPZ "appropriate to the locale" be in place. The ingestion exposure pathway generally covers an area approximately 50 miles in radius. 10 CFR Section 50.47(c)(2). Plans for the ingestion pathway are required to "focus on such actions as are appropriate to protect the food ingestion pathway." Id. The purpose of these requirements is to protect the public from consumption of contaminated foodstuffs. NUREG 0654, Section II.J.11.

Contention 81: Ingestion Exposure Pathway

Contention 81. The Plan contains insufficient procedures or other means of implementing the protective actions set forth in OPIP 3.6.6. Thus, LILCO has not developed adequate plans for the 50-mile ingestion exposure pathway, and there is no compliance with 10 CFR Sections 50.47(a)(1), 50.47(b)(1), 50.47(b)(3), 50.47(b)(10), 50.47(c)(2) and NUREG 0654 Section II.J.11. Specifically:

Contention 81.A. The Plan does not provide adequate procedures or guidance governing the disposition of contaminated lactating dairy animals, or the treatment of uncontaminated lactating dairy animals should uncontaminated stored feed not be available. Thus, there is no assurance that the milk or meat products of these animals will be kept from public consumption.

Contention 81.B. The Plan calls for withholding contaminated milk from the market to allow radioactive decay of short-lived radionuclides but does not call for its disposal or continued withholding after the decay period. (OPIP 3.6.6, Attachment 7, at 1). The Plan provides no standards for determining what constitutes an adequate "decay period" or for identifying short-lived radioisotopes, nor does

it contain any provisions for dealing with long-lived isotopes which would pose a serious health consequence to the public. In addition, the Plan does not state: (1) how the withholding of contaminated milk would be achieved; (2) how the prolonged storage and special pasteurization of milk would be achieved; (3) how the diversion of the production of fluid milk would be achieved; or (4) how the introduction of milk supplies into commerce would be prevented.

Contention 81.C. The Plan calls for washing contaminated fruit and vegetables and milling and polishing contaminated grains (OPIP 3.6.6, Attachment 7, at 1a). However, the Plan contains no procedures for disposing of the wash water or residue, which could pose a serious potential for adverse health consequences. In addition, the Plan does not state: (1) how the removal of surface contamination from fruits and vegetables by washing, etc. would be achieved; (2) how the milling and polishing of contaminated grains would be achieved; or (3) how the many informal local farm stands can be found and controlled.

Contention 81.D. The Plan contains no maps showing key land use data, watersheds, water supply intakes and treatment plants and reservoirs. Nor does it state: (1) how and from where alternative drinking water supplies would be made available; or (2) how affected wells would be identified and isolated and reservoirs secured.

Contention 81.E. The Plan does not state: (1) how the diet of all residents and visitors is to be restricted; (2) who will pay for condemnation and under what procedures condemnation will be executed; or (3) how exports of agricultural products and ducks from Suffolk County to other parts of the country can be controlled or prevented.

Contention 81.F. The Plan does not provide for personnel, facilities,

equipment or even a communications network to implement any of the actions listed in subparts A through E.

4. Q: Would you briefly describe the scope of this testimony?

A: This testimony will address all parts of Contention 81 to the extent that they relate to LILCO's Emergency Plan as modified by Revision 3. With respect to the general scope of this testimony, however, we offer two caveats. First, our testimony deals solely with that portion of the 50-mile Ingestion Pathway EPZ within the boundaries of New York State. By letter dated December 15, 1983, from Frank Mancuso, Director of the Office of Civil Preparedness of the Department of Public Safety of the State of Connecticut, to Donald A. DeVito, Director of the Office of Disaster Preparedness of the State of New York, the State of Connecticut has agreed to "support and provide radiological assistance in Connecticut in the event of a radiological related emergency and will respond in Connecticut to requests for radiological assistance from licensees, federal, state and local (county) agencies." This response will include "collect[ing] samples and interdict[ing] food, water and milk within potentially affected areas of the Shoreham 50-mile EPZ, as required, within the

boundaries of the State of Connecticut." This letter of agreement has been filed with this Board as Attachment 28 of LILCO's Testimony on Contention 24 F, G, I, K, L, O, P, R, S and T, filed on March 2, 1984. In light of this letter of agreement, our testimony focuses upon procedures for implementing protective actions within New York State only.

Second, the Emergency Plan provides that, if an emergency is declared, the Director of Local Response will contact the New York State Commissioner of Health as well as the Connecticut Department of Environmental Protection. Our testimony presumes, however, that New York State officials will not act affirmatively and implement protective actions upon notification of the radiological emergency.

5. Q: Where do the concerns expressed in Contention 81 fit into the overall concept of emergency planning?

A: Contention 81 raises concerns about the sufficiency of LILCO'S plan and procedures for the 50-mile ingestion pathway zone around Shoreham Nuclear Power Station, should protective actions governing the ingestion pathway be necessary in the event of an accident at the plant. Emergency planning for Shoreham, as for all commercial nuclear power plants, is

structured against a background of technical/regulatory documents issued by the Nuclear Regulatory Commission (NRC) and other agencies, including the Environmental Protection Agency and the Federal Emergency Management Agency. These include NUREG-0654/FEMA-REP-1(Rev.1), Criteria For Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants (November 1980) and NUREG-0396/EPA-529/1-78-016, Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants (December 1978), as well as the NRC's regulations, 10 CFR § 50.47 and Part 50 Appendix E. Though these documents form a backdrop, this testimony will address them only to the extent they bear on issues in contention here.

Similarly, this testimony will not attempt to summarize, in any one place, the contents of LILCO'S entire Local Offsite Radiological Emergency Response Plan for Shoreham, but simply to make use of those portions which are particularly relevant to those issues actually in contention. With respect to the ingestion exposure pathway, the most directly relevant

portion of the Emergency Plan consists of two Offsite Emergency Planning Implementing Procedures, OPIP 3.6.6 (Ingestion Pathway Protective Actions) and OPIP 3.5.3 (Ingestion Pathway Assessment and Dose Projection). These procedures are appended to this testimony as Attachments 1 and 2 respectively.

Contentions 81.A and 81.B

6. Q: In the event of a radiological emergency, what procedures would LILCO and LERO implement to ensure that contaminated milk would be kept from public consumption?

A: [Cordaro, Daverio, Watts] At the outset, we emphasize that the thrust of LILCO's Emergency Plan and its Implementing Procedures is to prevent the contamination of milk altogether. To this end, LERO maintains a comprehensive list of the names, addresses and telephone numbers of commercial dairy farms located in Suffolk and Nassau Counties and in those parts of Westchester and Putnam Counties that lie within the 50-mile Ingestion Pathway EPZ. This list, which is compiled on a semiannual basis by the New York State Department of Agriculture and Markets, identifies dairy farms that are engaged in the sale or shipping of milk to processors. A copy of this list is appended to this testimony as Attachment 3.

This and other lists appended to this testimony and to OPIP 3.6.6 will be periodically updated in accordance with NRC requirements.

Using this information, LERO would take appropriate action to prevent milk contamination in the event of a radiological emergency. For example, if a General Emergency were declared, LERO would immediately contact any dairy farmers located within a 10-mile radius of Shoreham Nuclear Power Station, in accordance with Section 5.1.1.1c of OPIP 3.6.6. Farmers would be instructed to remove dairy animals from pasture at once and to place them on stored feed until further notice. Because stored feed is typically kept in a silo or similar structure, it is protected from possible contamination by airborne radioactive particulates. By taking these immediate precautionary measures, the possibility of any milk contamination would be minimized. It is worth noting that the State of New York has adopted equivalent procedures in its Radiological Emergency Preparedness Plan, at Part III-Section I, H-14 (Rev. 11/83), for essentially the same reasons as stated herein.

Pursuant to Section 5.2 of OPIP 3.6.6, environmental survey teams would be dispatched to collect milk samples from farms located within the area of potential contamination. Under Section 5.2.2.3c, these teams would also be responsible for obtaining samples of fodder and forage from such farms. Analysis of these samples would be coordinated by personnel implementing the Dose Assessment Function. The results of laboratory analysis of the milk samples would be compared to protective action guides issued by the Food and Drug Administration, 47 Fed. Reg. 47,073 (1982), which are reflected in Attachments 1-3 of OPIP 3.6.6. These FDA protective action guides have also been adopted by the State of New York in its Radiological Emergency Preparedness Plan at Part I-Section III-33 (Rev. 11/83).

If the projected or measured activity of a particular radionuclide in a sample were found to exceed the preventive response level recommended by the FDA for that radionuclide, LERO would take further protective actions, in accordance with Section 5.4 and Attachment 7 of OPIP 3.6.6. As stated in Section 5.4.3.1 of OPIP 3.6.6 and Section 1.1 of Attachment 7, LERO would instruct potentially affected farmers to keep

If the projected or measured activity of a radionuclide in a sample were found to exceed the applicable FDA preventive response level, LERO would contact the affected dairy processor by telephone pursuant to Section 5.4.3.1 A of OPIP 3.6.6. As stated in Attachments 7 and 8 of OPIP 3.6.6, the processor would be advised to withhold contaminated milk from commerce to allow for the radioactive decay of the particular radionuclide. To this end, the processor could be advised to freeze and store contaminated milk for a specified period of time. Alternatively, the processor could be advised to divert fluid milk to the production of dry whole milk, nonfat dry milk, butter, cheese or evaporated milk. Such processing would have the effect of allowing for the decay of short-lived radionuclides. Furthermore, the processor would be instructed to store all incoming shipments in separate tanks, and to take representative one-gallon samples from each such shipment for monitoring purposes.

Finally, pursuant to Section 5.4.3.1 A of OPIP 3.6.6, both dairy farmers and processors would be notified that LILCO will fully compensate them for any unsalvageable milk.

all dairy animals indoors and to provide them with uncontaminated feed and water, i.e., feed and water from covered sources. In addition, farmers would be advised to withhold their milk from commerce and store it at reduced temperatures. Furthermore, farmers would be instructed to take a representative one-gallon sample from each milking. These samples would then be picked up by environmental survey teams for laboratory analysis. Finally, farmers would be provided with a telephone number to obtain up-to-date information.

The Emergency Plan contains additional safeguards for preventing public consumption of contaminated milk. First, Section 5.2.2.1 of OPIP 3.6.6 calls for environmental survey teams to sample milk at processing plants. Dairy processors that potentially use milk produced within the 50-mile EPZ are set forth in Attachment 4 of this testimony, which is based on information provided by the New York State Department of Agriculture and Markets. Environmental survey teams would also take milk samples from tank trucks to the extent practicable.

All of these actions, taken together, should ensure that contaminated milk will not be available for sale to the general public.

7. Q: Contention 81.A maintains that the Emergency Plan should provide for the "treatment of uncontaminated lactating dairy animals should uncontaminated store feed not be available." What is the likelihood of this eventuality?

A: [Porter, Watts] It is extremely unlikely that any dairy farmer within the 50-mile EPZ would not have stored feed on hand at any given point in time. Stored feed and vitamins account for a substantial, if not the predominant, share of the overall diet of dairy animals in the region.

Because of the relatively severe winters in New York State, local dairy farmers typically maintain a substantial supply of stored feed. Local climatic conditions, moreover, necessitate that such feed be kept in a shelter of one form or another. Stored feed thus would be protected from contamination resulting from airborne radioactive particulates.

In short, it is highly unlikely that uncontaminated feed would not be available in the event of a radiological emergency. This contention therefore does not raise a realistic concern.

8. Q: Should the Emergency Plan have procedures for the "disposition of contaminated lactating dairy animals," as Contention 81.A further maintains?

A: [Miele, Porter, Watts] There is no need for any procedure governing the "disposition" of "contaminated" dairy animals per se. As explained above, the implementing procedures focus on preventing internal contamination by removing dairy animals from the pasture and limiting their intake to stored feed and water from a covered source. To the extent that dairy animals receive external contamination, such contamination may be removed simply by washing and scrubbing the affected animal.

Even assuming that a lactating dairy animal did receive some internal contamination, this would not pose a potential public health problem except insofar as milk is concerned. There is no significant beef production within that portion of New York State covered by the 50-mile EPZ. We understand that the Suffolk County Farm in Yaphank may slaughter some dairy animals for consumption by residents of County institutions. Beef produced by this farm would be monitored for radioactive contamination in the event of a radiological emergency. To the best of our knowledge, however, no lactating dairy animals are

routinely slaughtered for consumption by the general public within the 50-mile EPZ. Consequently, OPIP 3.6.6 focuses upon the contamination of milk, and not meat products, from such animals. In the event that a commercial beef operation were to be identified within the 50-mile zone, it would be an easy matter to expand the scope of the existing procedures to cover it.

9. Q: Does the Emergency Plan provide standards for identifying specific short-lived radioisotopes?

A: [Miele, Porter, Watts] The Emergency Plan does not set forth specific "standards" for identifying various types of short-lived radioisotopes. Indeed, it would serve no useful purpose to include such information in the Plan itself. It is difficult to identify specific radioisotopes accurately in the field. Rather, laboratory analysis is usually necessary in order to determine the presence of particular radioisotopes in a sample. Section 2.0 of OPIP 3.6.6 authorizes the Radiation Health Coordinator to coordinate the laboratory analysis of field samples for this purpose.

10. Q: Does the Emergency Plan provide standards for determining what would constitute an adequate "decay period" for short-lived radioisotopes found in milk, water or other foods?

A: [Miele, Porter, Watts] Yes. As we have testified above, the Food and Drug Administration has issued preventive and emergency protective action guides with respect to radioactive milk, water and other foods. 47 Fed. Reg. 47,073 (1982). The FDA guidelines identify specific activities of various short-lived radionuclides in milk, water and other foods that pose the potential for serious adverse health consequences to the public. These guidelines are reflected in Attachments 1 and 2 of OPIP 3.6.6, which set forth preventive and emergency response levels for various radionuclides, and in Attachments 3, 4 and 5 of OPIP 3.6.6, which constitute protective action worksheets for milk, water and other foods, respectively.

By using Attachments 1-5, LERO can determine the appropriate decay period for a given radioactive food sample. Assume, for example, that the activity of a particular radioisotope in the food sample is 10 pCi/liter and the preventive response level for that radioisotope is 2.5 pCi/liter. If the half-life of the radioisotope is 5 days, then the food will have an unacceptably high level of radioactive contamination for two half-life periods, or 10 days. Thus, in

the foregoing hypothetical, an adequate decay period is 10 days. In short, Attachments 1-5 set out FDA-recommended standards for determining the amount of time necessary for radioactivity in milk, water and other foods to subside to an acceptable level.

11. Q: Does the Emergency Plan include provisions for long-lived radioisotopes?

A: It is extremely unlikely that any "long-lived" radioisotopes would be released in the event of an accident at Shoreham. LILCO's Emergency Plan nonetheless accounts for this improbable eventuality. Attachments 1-5 of OPIP 3.6.6 set forth preventive and emergency protective action guides for milk, water and foodstuffs that have been exposed to cesium-134, cesium-137, strontium-89 and strontium-90. In the unlikely event that a milk or food sample were determined to have an unacceptably high concentration of any of these radioisotopes, LILCO would undertake to purchase the affected food and dispose of it in accordance with Sections 5.4 and 5.5 of OPIP 3.6.6.

12. Q: Does the Plan contain specific procedures for the "special pasteurization" of contaminated milk?

A: No. Special pasteurization is only one of several recommended procedures for facilitating the decay of

short-lived radioisotopes in contaminated milk. Indeed, we understand that in many instances, processors may not have equipment necessary for special pasteurization. Such processors, however, may accomplish the objective of special pasteurization by other means, such as storing contaminated milk at reduced temperatures or diverting the milk to the production of cheese or other dairy products.

Contention 81.C

13. Q: Are special criteria needed for determining whether a consumer's washing, brushing and scrubbing of fruits and vegetables has been effective in eliminating surface contamination, as Contention 81.C suggests?

A: If locally grown fruits and vegetables are found to have an unacceptably high level of radioactive contamination, LILCO's policy, as provided in Section 5.4.3.1 C of OPIP 3.6.6, is to buy all such fruits and vegetables from farmers, vendors and other food-chain establishments. In so doing, LILCO seeks to minimize the possibility that any contaminated fruits and vegetables would reach the consuming public.

As an additional precaution, LERO will instruct the public, via EBS bulletin, to wash, brush, scrub or

peel all locally grown fruits and vegetables purchased or harvested subsequent to a radiological incident. No special procedures are necessary for removing surface contamination in this matter. Normal washing, brushing and scrubbing will remove radioactive contamination from the surfaces of fruits and vegetables, in exactly the same manner that it removes surface contamination caused by nonradioactive substances. In other words, the consumer does not have to use different methods or exercise any greater care than is necessary to remove insecticide residues and other similar, regularly encountered toxic substances from the surfaces of fruits and vegetables. Thus, the New York State Radiological Emergency Preparedness Plan, at Part III-Section I, H-14 (Rev. 11/83), recommends that the public "wash fruits and vegetables thoroughly prior to eating them," but does not contain specific procedures for removing radioactive contamination in this manner.

14. Q: Are special procedures necessary for disposing of wash water and residue in connection with the removal of radioactive contamination from the surfaces of fruits and vegetables, as Contention 81.C maintains?

A: [Miele, Porter, Watts] No. Contaminated fruits and vegetables may be washed or scrubbed in an ordinary

kitchen sink. Radioactive particulates that are washed down the drain would be so diluted by the water purification process as not to pose a potential public health problem. The average American household, for example, uses 50-100 gallons of water per day.

Washing fruits and vegetables to eliminate radioactive contamination is no different from washing them to remove other toxic residues. In both cases, the contamination is significantly diluted by the wash water, which is further diluted by sewer water or septic systems. By the same token, peelings and other residue should be disposed of as any other garbage would, in a trash receptacle or other container. In short, there is no need for the Plan to have specific procedures governing the disposal of radioactive wash water and residue.

15. Q: Does the Plan contain procedures for the "milling and polishing of contaminated grains"?

A: LILCO's Emergency Plan, as modified by Revision 3, does not refer to the "milling" or "polishing" of "contaminated grains." LILCO has dispensed with the need for milling and polishing procedures inasmuch as it will purchase contaminated grains from farmers and

food processors pursuant to Section 5.4.3.1E of OPIP 3.6.6. Moreover, it should be noted that there is relatively little grain production -- particularly that for human consumption -- within the New York Portion of the 50-mile EPZ.

16. Q: Are "informal" farmstands identified in the Emergency Plan?

A: [Cordaro, Daverio, Watts] LERO maintains an extensive list of the names, addresses and telephone numbers of all types of farmstands located on Long Island and in those parts of Westchester and Putnam Counties covered by the 50-mile EPZ. This list, which is appended to this testimony as Attachment 5, is based on information contained in the Guide to Farm Fresh Food-Metro Region published by the New York State Department of Agriculture and Markets and in an article entitled "Where They Are -- Farm Stand Season on Long Island" published by Newsday on July 29, 1982.

In addition, it should be noted that Attachment 13 of OPIP 3.6.6 identifies New York fruit and vegetable farmers within the 50-mile EPZ. Thus, LERO could readily contact these farmers if circumstances so warranted.

17. Q: Does the Emergency Plan have procedures for "control[ling]" produce available for sale at farmstands?

A: [Cordaro, Daverio, Watts] The Emergency Plan contains specific procedures for dealing with farmstand produce. As we testified above, LERO maintains a listing of the names, addresses and telephone numbers of New York farmstands within the 50-mile EPZ. In the event of a radiological emergency, environmental survey teams would be dispatched to collect representative samples of fruits and vegetables from farmstands located in the affected area, in accordance with Section 5.2.2.3c of OPIP 3.6.6. If these samples were found to have an unacceptably high level of radioactive contamination, LERO would contact, via telephone and/or EBS bulletins, farmstand operators in the affected area. Pursuant to Section 5.4.3.1 of OPIP 3.6.6, farmstand operators would be advised to withhold their produce from the market until further notice. In addition, they would be provided with a telephone number to obtain up-to-date information, and would be instructed to wash, brush or scrub all uncovered produce.

Perhaps most importantly, however, farmstand operators would be advised of LILCO's policy to compensate

within the New York State portion of the 50-mile EPZ and a pamphlet which lists New York streams that drain into river basins.

19. Q: What "alternative drinking water supplies" would be potentially available to the public, and how would such supplies be made available?

A: Contention 81.D.1 is premised on the assumption that the greater portion of the drinking water supply for residents of the 50-mile EPZ would be susceptible to radioactive contamination in the event of an accident. This premise is faulty.

Wells provide the only source of drinking water for residents of Nassau and Suffolk Counties. Because of the natural filtration process that occurs when surface water enters the aquifer, it is extremely unlikely that a release of radioactive material from a nuclear plant would cause the contamination of well water supplies. Therefore, it is highly unlikely that residents of Nassau and Suffolk Counties (which represent approximately 80% of the New York portion of the 50-mile EPZ) would ever be in need of "alternative drinking water supplies."

There are, however, several reservoirs situated on the periphery of the 50-mile EPZ in Putnam and

them fully for produce that has been contaminated as a result of the accident. This policy should eliminate any incentive for farmstand operators to sell contaminated produce to the public. The Plan thus includes specific procedures to minimize the possibility that contaminated produce would be available for sale to the public at farmstands.

Finally, it should be noted that LILCO's Plan compares favorably with the New York State Radiological Emergency Preparedness Plan. In contrast to LILCO's detailed information and procedures, the New York Plan does not contain any farmstand information, and does not set forth procedures governing notification of farmstands.

Contention 81.D

18. Q: Does LERO maintain maps showing "land use data, watersheds, water supply intakes and treatment plants and reservoirs?"

A: [Cordaro, Daverio] LERO maintains up-to-date maps showing key land use data, dairies, food processors, surface water intakes, reservoirs, treatment plants and groundwater sources. In addition, LERO has obtained from the United States Geological Service a hydrologic unit map which shows drainage basins

Westchester Counties. These reservoirs provide potable water to residents of Putnam and Westchester Counties and to certain areas of Queens County within the 50-mile zone. Assuming that an airborne radiological release contaminated these reservoirs, affected residents would be advised, via EBS bulletin, to drink bottled water, well water, or tap water which had been stored in closed tanks or vessels prior to the advisory, pursuant to Attachments 7 and 8 of OPIP 3.6.6.1/ Moreover, under Section 5.6 of OPIP 3.6.6, the Director of Local Response, in conjunction with the Logistics Support Coordinator and the Support Services Coordinator, would undertake procurement of supplemental potable water supplies.

20. Q: How would affected wells be identified and isolated?

A: As we testified above, the natural filtration process renders it extremely unlikely that well water would ever be contaminated in the event of a radiological accident. Thus, the New York State Radiological

1/ Our testimony does not address how reservoirs would be "secured," as stated in Contention 81.D.2, inasmuch as this measure is not included in LILCO's Plan as modified by Revision 3. LILCO has concluded that the securing of reservoirs may not be a viable option, and has adopted other measures, as described above, to ensure the availability of safe drinking water.

Emergency Preparedness Plan, for example, does not contain any provisions that specifically deal with wells, even though there are wells located within the 50-mile ingestion pathway zones (including Westchester and Putnam Counties) surrounding other nuclear power plants located in New York State.

LERO nonetheless maintains a comprehensive list of community wells and surface water sources situated in Nassau and Suffolk Counties and those portions of Westchester, Putnam and Queens Counties within the 50-mile EPZ. This list, which is appended to this testimony as Attachment 6, also identifies the title and telephone number of the contact person of each such groundwater or surface water operation. This list is based on information contained in the New York State Atlas of Community Water System Sources published by the Division of Environmental Protection of the New York State Department of Health.

If a radiological emergency were declared, environmental survey teams would periodically obtain water samples from wells located in the area of potential contamination, in accordance with Section 5.2.2.2 of OPIP 3.6.6. In the unlikely event that these samples

were determined to have an unacceptably high level of radioactive contamination, LERO would contact the affected water supply operators and inform them of such contamination pursuant to Section 5.1.3.1 B of OPIP 3.6.6. Furthermore, as stated in Attachments 7 and 8 of OPIP 3.6.6, residents of affected water districts would be advised, via EBS bulletin, to limit or cease consumption of tap water until further notice.

[Miele] It should also be noted that LILCO's Radiological Environmental Monitoring Program (REMP) maintains six wells at the site of Shoreham Nuclear Power Station for routine monitoring purposes. Three of these wells have been drilled only as far down as the highest water table, so that any groundwater contamination resulting from a radiological accident would be detected as early as possible. LILCO also monitors a privately owned well which is located approximately two miles from the plant. In the event of a radiological emergency, these wells could be monitored on an expedited basis, thus providing LERO with immediate data as to the nature and extent of any groundwater contamination.

Contention 81.E

21. Q: Does the Emergency Plan state how the diet of residents or other persons within the 50-mile EPZ would be restricted?

A: Contrary to the allegations of Contention 81.E.1, the Emergency Plan delineates specific procedures and criteria for developing dietary recommendations. Attachments 4 and 5 of OPIP 3.6.6 are worksheets which set forth a procedure for determining appropriate protective actions for milk and food respectively. Among the factors to be considered in this procedure is the relative importance of the particular food item in the average daily diet. In this connection, Attachment 6 of OPIP 3.6.6 assigns average daily consumption values for specific food groups based on FDA Guidelines.

If, upon completion of the worksheet, the measured activity of a radionuclide in a food sample exceeds the emergency response level, LERO will advise the general public, via EBS bulletin, to restrict its diet to foods other than those identified as contaminated, in accordance with Section 5.4.3.2 and Attachment 8 of OPIP 3.6.6. In such circumstances, LERO will undertake to purchase the contaminated food item

from farmers, vendors, processors and other affected food chain establishments. Such action should substantially reduce the likelihood that the food item will be available for public consumption.

It should also be noted that OPIP 3.6.6 prescribes various protective actions designed to minimize the need for diet restrictions. For example, LERO may recommend that the public use foods in sealed packages, cartons or cans pursuant to Section 3.1 of Attachment 8 of OPIP 3.6.6. Such foods, of course, should be free from radioactive contamination. Section 5.6 of OPIP 3.6.6, moreover, directs the Director of Local Response, in conjunction with the Logistics Support Coordinator and the Support Services Coordinator, to procure and distribute alternative food supplies.

22. Q: Does the Emergency Plan provide for "condemnation" payments and procedures, as suggested by Contention 81.E?

A: [Cordaro, Daverio] The Emergency Plan does not provide for "condemnation" payments and procedures as such. The term "condemnation" refers to a legal process by which property of a private owner is taken for public use. Redress of property damage resulting

from radioactive contamination does not fall within the usual framework of condemnation.

The Plan, however, does embody a liberal policy of compensating food-chain establishments for losses sustained by reason of radiological contamination. As stated in Section 5.4.3.1 of OPIP 3.6.6, LILCO will fully compensate any farmer, processor, vendor, commercial fishery or other food-chain establishment for food that has been rendered unsalvageable as a result of radiological contamination. This policy, of course, is designed to eliminate any incentive for the farmer or merchant to sell or distribute contaminated food to anyone other than LILCO.

23. Q: How would "exports of agricultural products and ducks from Suffolk County" be controlled or prevented?

A: As a threshold matter, we emphasize that LERO maintains a comprehensive listing of the names, addresses and telephone numbers of various types of farmers and food processors in Suffolk County. This information is reflected in Attachments 9-14 of OPIP 3.6.6 and in Attachments 3-5 appended to this testimony. Attachment 11 of OPIP 3.6.6, for example, identifies duck and other poultry farms on Long Island.

By using this information, LERO would be able to notify Suffolk County farmers and processors promptly of appropriate protective actions. If any particular agricultural product were found to have received an unacceptably high level of radioactive contamination, affected farmers and processors would be instructed to withhold that product from commerce. Moreover, whenever appropriate, LERO would undertake to purchase contaminated foodstuffs from farmers and processors to ensure that they would not be sold or distributed to the general public.

Since the normal diet of commercially raised ducks consists almost entirely of stored feed, it is highly unlikely that such ducks would receive internal contamination as a result of an atmospheric release of radioactive particulates. Moreover, if a radiological accident occurred during a season when wild ducks were present on Long Island, LERO would advise the public, via EBS bulletin, not to consume wild ducks until further notice. Although the prospect seems somewhat far-fetched, similar notices could be given to areas to which these ducks might migrate seasonally.

Contention 81.F

24. Q: Does the Emergency Plan provide for the "personnel, facilities, equipment [and] communications network" to implement the protective actions described above?

A: Yes. Contrary to the allegations of Contention 81.F, the Emergency Plan does set forth, in detail, the personnel, facilities, equipment and communications system to be employed in implementing ingestion pathway protective actions:

With respect to personnel, Section 2.0 of OPIP 3.6.6 expressly provides that the Director of Local Response has the overall responsibility for making protective action decisions concerning the ingestion exposure pathway. Such decisions would be based on dose projection determinations made by personnel implementing the Dose Assessment Function in accordance with OPIPs 3.5.3 and 3.6.6.

As stated in Section 2.0 of OPIP 3.6.6, the Radiation Health Coordinator is responsible for coordinating sampling and assessment activities. Pursuant to Section 5.2.2 of OPIP 3.6.6, samples of milk, water and foodstuffs would be collected by personnel implementing the Environmental Survey Function at predesignated sampling locations. Personnel

implementing the Dose Assessment Function would then arrange for laboratory analysis of these samples to verify initial dose projections.

Under the Plan, the Department of Energy (DOE) would initially provide dose assessment and environmental survey personnel from the Brookhaven National Laboratory, which is located approximately six miles from the plant. DOE would provide additional personnel, if necessary, from remote locations within sufficient time to monitor the ingestion exposure pathway. Collectively, these DOE employees have considerable experience in making ingestion pathway dose determinations and in developing appropriate protective action recommendations on the basis of such determinations.

It is also important to note that LILCO is a member of the Institute of Nuclear Power Operations (INPO). Under INPO's Emergency Plan, LILCO could draw upon the resources of other member utilities in the event of a radiological emergency. We estimate that member utilities within a 300-mile radius of the Shoreham plant could furnish more than 60 two-man radiological survey teams equipped with survey instrumentation and vehicles. These utilities could also provide

approximately 25 health physics supervisors to coordinate these teams and roughly 45 health physics/environmental engineers to coordinate sample analysis and interpret environmental data. Moreover, we estimate that member utilities located beyond a 300-mile radius of Shoreham could more than double these resources, if necessary, within 24 hours.

[Miele] To augment the number of field survey teams, the Radiation Health Coordinator could call upon LILCO personnel, including those assigned to Shoreham's Radiological Environmental Monitoring Program (REMP). Since its inception in 1977, REMP has been engaged in the radiological sampling of milk, fish, water, soil and vegetation at predesignated sites around the Shoreham facility. More than a dozen LILCO employees would be available to supplement and assist the DOE survey teams as required. Eight of these employees, moreover, have received training in the operation of radiation monitoring equipment.

[Cordaro, Daverio, Miele, Porter, Watts] The Plan also describes in detail the equipment required for monitoring the ingestion pathway. Specifically,

Section 5.2.2 of OPIP 3.6.6 delineates various types of equipment and materials that would be necessary for sampling milk, water and foodstuffs.

Furthermore, the Plan sets forth the communications network to be used in implementing protective action recommendations. The overall communications system available to LILCO and LERO personnel is illustrated in Figure 3.4.1 of the Plan. The communications network would function as follows: As stated in Section 5.1.3.6 of OPIP 3.6.6, the Director of Local Response would communicate protective action recommendations directly to the New York State Commissioner of Health, as well as to the Chief of the Radiation Control Unit of the Connecticut Department of Environmental Protection. If New York State officials, for whatever reason, failed to assume responsibility for the ingestion exposure pathway, LERO personnel would undertake to implement appropriate protective actions. In the eventuality, Section 5.4 of OPIP 3.6.6 provides that the Radiation Health Coordinator would be responsible for communicating recommended protective measures to farmers, food processors and other food chain establishments. In this capacity, the Radiation Health Coordinator would supervise

three communicators who would contact the affected establishments by telephone. Section 5.4.3.2 of OPIP 3.6.6 moreover provides that the Coordinator of Public Information would be responsible for communicating appropriate protective action recommendations to the general public. The public would be notified of such information via EBS bulletins.

25. Q: Are there additional, federal resources available to implement protective actions for the 50-mile ingestion pathway zone?

A: [Porter] In the event of a major radiological emergency, the federal government probably would commit substantial resources to environmental surveillance and monitoring of the ingestion exposure pathway. In response to the Three Mile Island accident in March 1979, for example, the Nuclear Regulatory Commission (NRC), Department of Energy (DOE), Environmental Protection Agency (EPA), and Food and Drug Administration (FDA) each provided personnel and equipment to assist in offsite environmental surveillance. DOE provided, among other things, survey teams, a mobile laboratory, meteorological equipment and a sophisticated aerial monitoring and surveillance aircraft. EPA continually sampled and analyzed the air quality, and took continuous composite samples of local

drinking water throughout the emergency period. FDA, moreover, sampled and analyzed locally produced fruits, vegetables, fish, game, and other foodstuffs for radioactive contamination.

In the aftermath of the Three Mile Island accident, the Federal Emergency Management Agency was charged with preparing a Federal Radiological Emergency Response Plan in order to define the roles and coordinate the activities of the NRC, DOE, EPA, FDA and other federal agencies during a radiological emergency. The most recent draft of this Plan was published in the Federal Register on January 27, 1984 and is appended hereto as Attachment 7. The Plan evidences the intent of the federal government to respond quickly and effectively to radiological emergencies in the future. Moreover, earlier this month, this Plan served as the basis for a large-scale field exercise at the St Lucie plant in Florida. In short, additional personnel and equipment would be available from NRC, DOE, EPA, FDA and other federal agencies to supplement LERO's monitoring of the ingestion exposure pathway.

ATTACHMENT 1

EPC _____

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Approved: _____

Effective Date _____

OPIP 3.6.6 INGESTION PATHWAY PROTECTIVE ACTIONS

1.0 PURPOSE

This procedure provides guidance for protective actions that will mitigate the consequences of a radiological release in the ingestion pathway. It is intended that sound judgment and personal assessment of the progress of events will be supplemented with the guidance found in this procedure.

2.0 RESPONSIBILITY

The Director of Local Response is responsible for decision-making regarding protective action recommendations.

The Dose Assessment Function will develop ingestion pathway protective actions recommendations for the review of the Director of Local Response.

The Radiation Health Coordinator is responsible for the coordination of the sampling and assessment. The Radiation Health Coordinator is also responsible for the protective actions implementation of this procedure.

The Radiation Health Coordinator is responsible for the direct telephone communication of protective actions recommendations to the food chain establishments. The Director of Local Response will direct the Coordinator of Public Information to inform the public of his protective actions recommendations.

3.0 PRECAUTIONS

- 3.1 After a radiological release from SNPS, the effects on the ingestion pathway will not be known, from field sample analysis, for several hours or days. The initial basis for a protective action recommendation for fresh milk will be provided by the projected ground deposition calculated in OPIP 3.5.3, Attachment 5. Field sample analysis of initial deposition will probably not be available for several hours after the release. In areas where laboratory results are available, use the measured deposition activity levels instead of projected levels. The laboratory analysis of pasture grass and fresh milk for peak activity will not be available for several days after the release.

- 3.2 Environmental Survey Teams must have anti-contamination personal protection equipment for entry into contaminated or potentially contaminated areas.

4.0 PREREQUISITES

- 4.1 The release of radioactive material into the air or water is either in progress or was in progress and has been terminated.
- 4.2 Offsite dose projections have been completed or dose levels have been measured in accordance with OPIP 3.5.2 and OPIP 3.5.3.

5.0 ACTIONS

5.1 Protective Action Determination

Following are the methods for determining the necessary ingestion pathway protective actions:

5.1.1 Fresh Milk

This subsection is used in conjunction with Attachment 3 to determine if protective actions are necessary for fresh milk. It is also used in conjunction with projected and measured deposition activity levels and the preventive and emergency response levels as referenced in Attachments 1 and 2. The preventive and emergency protective actions for fresh milk ingestion are outlined in Attachments 7 and 8, respectively.

5.1.1.1 Pre-determined Actions

- a. In the early stages of an emergency, the milk pathway is the most significant. Thus, early protective actions for preventing contamination of milk in the affected area are recommended prior to obtaining confirmatory data.

- b. If a Site Area Emergency is declared, an immediate recommendation will be made to place milk animals located within 2 miles on stored feed. As more information becomes available, this may be modified as required.
- c. In the case of a General Emergency, an immediate recommendation to place milk animals within 10 miles on stored feed will be made. This may be modified as more information becomes available.

5.1.1.2 The Dose Assessment Function will:

- a. Obtain Attachment 3, Fresh Milk Protective Action Worksheet.
- b. Determine the area for which the protective action analysis is to be made. Enter the area of concern on the worksheet as item 1.
- c. Obtain the projected ground deposition activity from OPIP 3.5.3, Attachment 5, for the area of concern and enter into item 2.
- d. Obtain the measured ground deposition and peak activities for the area of concern, if available, and enter into item 5.
- e. Complete the action statements of items 3 and 4 and also items 6 and 7.

5.1.1.3 If any of the projected or measured activity levels exceed the listed preventive activity response levels, the preventive protective actions as outlined in Attachment 7, Preventive Protective Actions, should be considered. If any emergency response levels are exceeded, consult Attachment 8, Emergency Protective Actions.

- 5.1.1.4 If protective actions are required, the affected facilities can be determined from the following lists:

Dairy Farms - New York (Attachment 9)

Milk Processors - New York (Attachment 10)

Milk Processors - Connecticut
(Attachment 15)

Dairy Farms - Connecticut (Attachment 16)

5.1.2 Water

This subsection is used in conjunction with Attachment 4 to determine if protective actions are necessary for potable water.

As soon as water samples have been collected and analyzed, use the measured dose as a basis for protective actions.

- 5.1.2.1 The Dose Assessment Function will:

- a. Obtain Attachment 4, Drinking Water Protective Action Worksheet.
- b. Obtain the measured drinking water activity level from the laboratory and enter into item 1b.

- 5.1.2.2 If the measured activity levels exceed the listed response levels, consider the preventive protective action for water ingestion as outlined in Attachment 7, Preventive Protective Actions.

5.1.3 Foods Other Than Milk

This subsection is used in conjunction with Attachment 5 to determine if protective action is necessary for foods other than milk. This procedure uses the dietary factors of Attachment

6 and the measured food activity levels. The preventive and emergency protective actions for the ingestion of these foods are outlined in Attachment 7 and 8.

5.1.3.1 The Dose Assessment Function will:

- a. Obtain Attachment 5, Determination of Protective Actions for Foods Other Than Milk.
- b. Determine the type of food for which protection analysis is to be made and enter into item 1.
- c. Enter into item 2 the location where analyzed food sample originated.

5.1.3.2 Compute the response level for this food by completing items 4 through 8. The inputs for this calculation are obtained as follows:

- a. The Dietary Factor (item 4) depends on the food group. These groups and their dietary factors are listed in Attachment 6, Dietary Factors for Foods Other Than Milk.
- b. The Days of Intake (item 5) is an estimation of the period of time the food in question will be available for intake. For example, fresh vegetables will have a shorter consumption period than frozen vegetables.
- c. The Intake Factor is defined for both infants and adults. For Step 7, Preventive Response Levels, calculate for infants only. For Step 8, calculate Emergency Response Levels for infants and adults.

5.1.3.3 The Dose Assessment Function will:

- a. Enter the Preventive Response Levels and Emergency Response Levels in the appropriate columns of item 9.
- b. Obtain the measured activity levels of the food sample for the specific radionuclides and enter into the appropriate column of item 9.
- c. Complete the action statements of items 10 and 11.

5.1.3.4 If any of the measured activity levels exceed the calculated preventive activity response levels, then Preventive Protective Actions, as outlined in Attachment 7, should be considered. If any of the measured activity levels exceed the calculated emergency adult response levels, then emergency protective actions as outlined in Attachment 8, Emergency Protective Actions, should be considered.

5.1.3.5 If protective actions are required, see Section 5.4.

5.1.3.6 The Director of Local Response will contact the New York State Commissioner of Health and the Connecticut Department of Environmental Protection and provide the LERO Ingestion Pathway protective action recommendation:

- New York State Commissioner of Health
- Connecticut Department of Environmental Protection, Chief of Radiation Control Unit

If the above-mentioned state officials/agencies indicate that they are willing and able to implement the ingestion

pathway plan for their state, no further action is necessary. If an adequate response cannot be ensured, refer to Section 5.4.

5.2 Ingestion Pathway Sampling

The objective of this section is to describe the procedures for collecting, labeling, and transporting ingestion pathway samples by the survey teams. The ingestion pathway sampling teams will be mobilized, equipped and briefed in accordance OPIP 3.5.1, Section 5.1.

- 5.2.1 Each team will perform the following pre-departure tasks:
- a. Perform source and battery checks of survey instruments, if applicable:
 - b. Examine vehicle tires, fuel and other key operational features.
 - c. Test communication equipment.

NOTE

SEE SPECIFIC SAMPLING PROCEDURE, SECTIONS 5.2.2.1, 5.2.2.2, AND 5.2.2.3, FOR SAMPLING EQUIPMENT REQUIRED.

5.2.2 Field Sampling Instructions

5.2.2.1 Milk

Samples may be taken from farm holding tanks, tank trucks, or processing plants.

- a. Load the vehicle with the following sampling equipment:

- Ice chests and ice, if required
 - Sodium Bisulfite (40 gms in pre-prepared packets)
 - Dipper
 - 1-gallon containers (plastic)
 - Masking tape (for sealing container caps)
 - Writing instruments
 - Surgical tape, 2" wide (for marking containers)
 - Grease pencils
 - Sampling forms (Attachment 17) and carbon paper
- b. Maintain contact with the Environmental Survey Function on an hourly basis or after each sample collection, whichever is sooner.
- c. Draw a gallon sample after the storage has been agitated for homogeneity. Either dip from the top or drain enough volume to twice empty the contents of the line before the valve closure and then fill the sample container. If tanks contain different batches, sample each.
- d. Depending on Radiation Health Coordinator briefing instructions, add Sodium Bisulfite (and shake) or refrigerate in the ice chest.
- e. Cap the container, seal it with masking tape, adhere a strip of surgical tape and on it enter the location of the sample source and the identification number.
- f. Complete the Sampling Form (Attachment 17) in duplicate, including additional data that may be of value.

Examples of additional data:

- Farm: Dates/Times of milking(s) in the hold tank;
- Truck: License no., farm sources of contents;
- Plant: Summary of collection points, if available.

One copy accompanies the sample, the second copy is forwarded to the Radiation Health Coordinator to track laboratory analytical results.

- g. At the conclusion of the shift or assignment, the team reports to the emergency worker decontamination facility at the Brentwood Operations Center to be checked for exposure and contamination.
- h. The team proceeds to the dispatch point to be debriefed and to surrender samples, records, and equipment to the Environmental Survey Function. The Environmental Survey Function notes the types of required laboratory analyses on each sampling form.

5.2.2.2 Water

Potable as well as surface (non-potable ponds, streams, etc.) water will be sampled. The surface water will be sampled because of recreational use, fishing areas, or use by animals.

- a. Load the vehicle with the following sampling equipment:
 - 1-gallon containers (plastic)
 - Sodium Bisulfite (pre-prepared 40 gm packets)

- Dipper
 - Masking tape (for sealing container caps)
 - Writing instruments
 - Surgical tape, 2" wide, for marking containers
 - Grease pencils
 - Sampling Forms (Attachment 17) with carbon paper
- b. Maintain contact with the Environmental Survey Function on an hourly basis or after each sample collection, whichever is sooner.
- c. Draw a one-gallon sample at each specified location, or additional samples if warranted. The technique differs slightly for each type of source.
- Open body of water (pond, lake): Dip pint samples of water from the surface from various points up to 10 yards apart and continue until the gallon container is full. If a body of water is large (i.e. lake) obtain one gallon sample from each of four quadrants.
 - Running water (stream): Draw one pint samples from the surface of a swiftly moving area at one-minute intervals until the one-gallon container is full.
 - Reservoir and well (potable water): Draw one pint samples at one minute intervals from the pump discharge, making certain that the sampling line is properly cleared, and combine in a one-gallon container until full.

- Treatment Plant: Perform direct radiation field measurements, using a survey meter, on the surface of purification, deionization, or filtration systems. Enter this information on a sampling form (no sample involved) and immediately report the data to the Environment Survey Function.
- d. Add Sodium Bisulfite only if instructed to do so by the Environment Survey Function.
- e. Cap the container, seal it with masking tape, adhere a strip of surgical tape and on it enter the identification of the sample source and the identification number.
- f. Complete the Sampling Form (Attachment 17) in duplicate, including details of sampling method. One copy accompanies the sample, the second copy is forwarded to the Radiation Health Coordinator to track laboratory analytical results.
- g. At the conclusion of the shift or assignment, the team reports to the emergency worker decontamination facility at the Brentwood Operations Center to be checked for exposure and contamination.
- h. The team proceeds to the dispatch point to be debriefed and to surrender samples, records, and equipment to the Environmental Survey Function. The Environmental Survey Function notes the types of required laboratory analyses on each sampling form.

5.2.2.3 Foodstuffs other than Milk

This section considers edibles, for human and animal consumption, in the field, on road-side stands, stored out of doors, and in processing plants.

a. Load the vehicle with the following sampling equipment:

- Unused polyethylene bags (10 gallon), either self-sealing or with wire ties
- Ice chests and ice
- Masking tape
- Writing instruments
- Surgical tape, 2" wide, for marking containers
- Grease pencils
- Spade, heavy shears, tongs
- Tape measure or folding ruler
- Sampling Forms (Attachment 17) and carbon paper

b. Maintain contact with the Environmental Survey Function on an hourly basis or after each sample collection, whichever is sooner.

c. Take samples in accordance with the following instructions. In some situations where large areas and volumes are involved, take as many samples as are appropriate and clearly identify each. Use tongs and shears as appropriate.

- Fruits/vegetables in the field:

Fill 10-gallon bag approximately one-half full, taking uppermost leafy sections that are directly exposed to the sky.

- Fruits on trees:

Select fruit from the outermost reaches of the branches which are not sheltered from above and collect one-half 10 gallon bag.

- Fruits/vegetables on roadside stands:

Select directly exposed fruits and vegetables to fill the sample bag one-half full. Different types may be mixed to obtain the sample.

- Food (other than milk) in processing plants:

Take one-half bag samples of food which is identified as having arrived since a release occurred waiting for process, in process, or finished (canned, bagged, or otherwise packaged).

- Finfish and shellfish:

Visit commercial fisheries and charter boat firms to collect half-bag representative samples of fin and shellfish types. Inquire with the boat crew and note on the report the fishing grounds location.

- Animal forage growing in the pasture:

Select a heavily grazed area using shears, clip the upper vegetation from an area one meter by one meter. Cut enough grass for a three-quarter bag

sample - take more than one sample if necessary to obtain a representative sample in the area.

- Animal fodder stored out of doors:

Sample this material if the location is unprotected from the sky - take material from the top, exposed layer only and to a depth of one inch. Obtain a three-quarter bag sample from multiple locations.

- d. Place each sample in an appropriate type and size of container, seal with masking tape if a bottle or wire tie if a bag. Adhere a strip of surgical tape and, on it, enter the sample source and sample number identification.
- e. Complete the Sampling Form (Attachment 17) in duplicate, including details of sampling method. One accompanies the sample, the second is forwarded to the Radiation Health Coordinator to track laboratory analyses results.
- f. At the conclusion of the shift or assignment, the team reports to the emergency worker decontamination facility at the Brentwood Operations Center to be checked for exposure and contamination.
- g. The team proceeds to the dispatch point to be debriefed and to surrender samples, records, and equipment to the Environmental Survey Function. The Environmental Survey Function notes the types of required laboratory analyses on each sampling form.

5.3 Protective Actions Revision and Termination

The decision to recommend protective actions will be made by the Director of Local Response. Likewise, any decision to revise or terminate protective actions will be made by the Director of Local Response. The Dose Assessment Function will monitor radiological release and field survey sampling values on an ongoing basis and will provide the Radiation Health Coordinator with revised protective actions recommendations where appropriate. These recommendations in turn will be forwarded to the Director of Local Response for review and approval. The Radiation Health Coordinator will be responsible for implementing the decisions to revise or terminate protective actions.

5.4 Implementation of Protective Actions Recommendations

If the state officials cannot be contacted or are unable or unwilling to implement protective actions, as stated in Section 5.1.3.6, this section will be implemented by LERO.

Implementation of this section is the responsibility of the Radiation Health Coordinator with the cooperation of the Environmental Survey Function, the Dose Assessment Function, and the RAP Team Captain. The Radiation Health Coordinator will receive ingestion pathway sampling information from the Environmental Survey Function survey teams, analyses from designated laboratories, and protective action recommendations from the Dose Assessment Function. He or she will summarize the information to report to the Director of Local Response for decision-making. The Radiation Health Coordinator will implement such decisions communicating them as described in Section 5.3.3.

Following are the implementation procedures:

5.4.1 Notification of Affected Facilities

The Radiation Health Coordinator will:

- a. Activate the communicator group.

- b. Brief the communicator group on the status of the situation and recommended protective actions.
- c. Assign specific call lists to communicators. Such lists are provided in Attachments 9 through 16 to this procedure.
- d. Provide a message (Attachment 18) for each communicator in accordance with the type of food and recommended protective actions (see Section 5.4.2).
- e. Instruct communicators to maintain a log of all telephone calls and a detailed record of each call (Attachment 18).

5.4.2 Message Assembly

This procedure is used in conjunction with Attachment 18 - INGESTION PATHWAY PROTECTIVE ACTIONS NOTIFICATION FORM.

- 5.4.2.1 The Radiation Health Coordinator uses this form to issue instructions to the communicators. He checks the "Coordinator" box and then completes appropriate blanks in accordance with the explanation in Section 5.3.2.3.
- 5.4.2.2 The communicator, using the Coordinator's instructions as a guide, will complete the Notification Form as the message is provided to concern/person called. The "Communicator" box is checked. The following additional guidelines must be observed.
 - a. Communicate only that information provided by the Coordinator.
 - b. Difficult calls should be referred to the Coordinator.

5.4.2.3 Ingestion Pathway Protective Actions
Notification Form

Following is an explanation for the use of Attachment 18. Unless otherwise indicated, the information is provided by the communicator.

- Line 3 Attachment number. This corresponds to the list of concerns to be called. [Provided by the Coordinator.]
- Line 4 Subdivision of the above list. [Provided by the Coordinator.]
- Line 5 Check appropriate box for person who completed the form.
- Line 6 Name of concern contacted and name of person receiving the message.
- Line 7 Phone number used for the contact.
- Line 8 Food type(s) involved by the protective action. [Provided by the Coordinator.]
- Line 9 Note whether concern contacted is a Supplier (Examples: water company, reservoir), processor (Examples: milk bottler, food packager), or other (Examples: farm, roadside foodstand).
- Line 10 Sector - geographical area involved in the protective action. [Provided by the Coordinator.]
- Line 11 Miles - distance from the utility involved in the protective action. [Provided by the Coordinator.]

- Line 12 Contamination - actual or potential. [Provided by the Coordinator.]
- Line 13 Recommendation - indicate whether the action is Preventive or Emergency. [Provided by the Coordinator.]
- Line 14 Protective Actions - specific instructions. Use the Attachments 7 and 8 code provided by the Coordinator to secure the text to be transmitted.
- Line 15 Name/Phone No. of User - obtain this information from the person called. This refers to the recipient of the food produced/handled at this location. (Examples: The farm contacted may sell its milk production to the bottler. A food packager may sell its canned goods to a distributor or directly to retail stores.)
- Line 16 LILCO Liability - Advise that LILCO will compensate for food that is not salvageable. [Provided by the Coordinator.]
- Line 17 Call Back Phone No. - provide the contact with a number to be used to obtain up-to-date information. [Provided by the Coordinator.]
- Line 18 Other - additional data to be transmitted as provided by the Coordinator.
- Line 19 Contact Comments - enter information in detail.

Line 20 Name - print full name.

Line 21 Message No. - communicators
enter sequential number,
starting at the beginning for
each shift.

If the space allotted is insufficient
for any entry, use the reverse side of
the form and reference on the front of
the form.

Notification Forms will be regularly
collected by the Radiation Health
Coordinator who will monitor the entire
notification process and insure optimum
coverage.

5.4.3 Ingestion Pathway Protective Actions Messages

The Radiation Health Coordinator will complete a
Notification Form (Attachment 18) for each of the
affected food chain categories in accordance with
the instructions by the Dose Assessment Function
and the RAP Team Captain.

5.4.3.1 Commerce and Industry (including farms)

A. Milk - Farms and processors

1. Advise of contamination or
possibility of contamination
(Item 12).
2. Recommend not to move food until
further notice (Item 13).
3. Communicate recommended
protective actions (Item 14).
Examples:
 - a. Preventive - 1.1a, b, and c
(Attachment 7)
 - b. Emergency - 1.2a, d, e
(Attachment 8)

4. Request the name/telephone number of purchaser of this facility's shipments (Item 15).
 5. Advise that LILCO will compensate for unsalvageable food (Item 16).
 6. Provide the phone number to call for up-to-date information (Item 17).
- B. Drinking Water - Water companies and commercial users
1. Advise of contamination or possibility of contamination (Item 12).
 2. Provide recommended protective actions (Item 14). Examples:
 - a. Preventive - 2.1b (Attachment 7)
 - b. Emergency - 2.1a, c (Attachment 8)
- 2.2a, b (Attachment 8)
 3. Provide telephone number to call for up-to-date information (Item 17).
- C. Fresh Fruits and Vegetables - Farms, processors, and vendors
1. Advise of contamination or possibility of contamination (Item 12).
 2. Recommend not to move food until further notice (Item 13).

3. Communicate recommended protective actions (Item 14).
Examples:

- a. Preventive - 3.1a
- b. Emergency - 3.1a, c

4. Request the name/telephone number of the purchaser of this facility's shipments (Item 15).
5. Advise that LILCO will compensate for unsalvageable food (Item 16).
6. Provide a telephone number to call for up-to-date information (Item 17).

D. Fin Fish and Shell Fish

1. Advise of contamination or possibility of contamination (Item 12).
2. Recommend not to move food until further notice (Item 13).
3. Provide recommended protective actions (Item 14). Examples:
 - a. Preventive - 4.0a, b, c
 - b. Emergency - 3.1a, c
4. Request the name/telephone number of the purchaser of this firm's shipments (Item 15).
5. Advise that LILCO will compensate for unsalvageable food (Item 16).

6. Provide a telephone number to call for up-to-date information (Item 17).

E. Other Foods

1. Advise of contamination or possibility of contamination (Item 12).
2. Recommend not to move food until further notice (Item 13).
3. Communicate recommended protective actions (Item 14).
Examples:
 - a. Preventive: 6.0a
 - b. Emergency: 3.1a, c
4. Request the names/telephone numbers of purchasers of this firm's shipments (Item 15).
5. Advise that LILCO will compensate for unsalvageable food (Item 16).
6. Provide a telephone number to call for up-to-date information (Item 17).

5.4.3.2 General Public, via Public News Bulletins

- a. The Director of Local Response will communicate to the Coordinator of Public Information those protective actions recommendations pertinent to the public which he has approved.
- b. The Director of Local Response will communicate revisions of protective actions recommendation to the

Coordinator of Public Information.
This includes termination of
protective actions recommendations.

5.5 Disposition of Contaminated Foodstuffs

The Radiation Health Coordinator will brief the Manager of Local Response and the Health Services Coordinator on a continuing basis. They will develop a proposal for the disposition of contaminated foodstuffs based on the following factors:

- a. The availability of other possible preventive actions (see Attachment 7).
- b. Relative proportion of the total diet by weight represented by the food item in question.
- c. The importance of the particular food in nutrition and the availability of uncontaminated food or substitute having the same nutritional properties.
- d. The time and effort required to effect corrective actions.

Any decision to recommend the disposition of contaminated food will be made by the Director of Local Response.

5.6 Alternate Food Sources

If a particular food or water source is determined to exceed the values stated in Attachment 1, curtailed consumption may be recommended. Alternate sources of such food may be desirable, for which the following considerations are provided.

As food needs are identified:

- a. The Director of Local Response will approve the procurement of necessary supplies.
- b. The Logistics Support Coordinator will direct Material Purchasing to order the required supplies to be delivered to a designated central staging facility.

- c. The Support Services Coordinator will arrange for local distribution.

5.7 Continued Ingestion Pathway Sampling and Sampling Evaluation

The Radiation Health Coordinator will monitor the continued sampling of ingestion pathway foods with the following considerations:

- a. Provide the Environmental Survey Function with information regarding the places/food types to be sampled as follow-up. When contamination attains a level less than that stated in Attachment 1, new instructions are to be communicated to the concerns/persons previously notified in accordance with the Director of Local Response decision.
- b. Provide the Environmental Survey Function with identification of new places/food types to be sampled - based on information provided by the Dose Assessment Function.
- c. Advise the Environmental Survey Function to pick up samples taken by farmers, processors, etc.
- d. Coordinate with the designated analytical laboratories to expedite analyses, obtain data and forward the results to the Dose Assessment Function.

6.0 REFERENCES

- 6.1 Department of Health, Education, and Welfare, Food and Drug Administration, 21 CFR Part 1090, "Accidental Radioactive Contamination of Human Food and Animal Feeds." Federal Register, Vol. 43, No. 242, December 15, 1978, p. 58790.
- 6.2 Department of Health and Human Services, Food and Drug Administration, Federal Register, Vol. 47, No. 205, October 22, 1982.
- 6.3 OPIP 3.5.2, Assessment and Dose Projection (airborne and waterborne).
- 6.4 OPIP 3.5.3, Ingestion Pathway Assessment and Dose Projection.

7.0 ATTACHMENTS

1. Derived Response Levels for Preventive PAG
2. Derived Response Levels for Emergency PAG
3. Fresh Milk Protective Action Worksheet
4. Drinking Water Protective Action Worksheet
5. Determination of Protective Actions for Foods Other Than Milk
6. Dietary Factors for Foods Other Than Milk
7. Preventive Protective Actions
8. Emergency Protective Actions
9. State of New York Dairy Farms
10. State of New York Processing Plants
11. State of New York Processing Plants
12. State of New York Poultry Farms
13. State of New York Vegetable and Fruit Growers
14. State of New York, Potato Processing Plants - Nassau and Suffolk Counties
15. State of Connecticut Processing Plants
16. State of Connecticut Dairy Farms
17. Ingestion Pathway Sampling Form
18. Ingestion Pathway Protective Actions Notification Form

DERIVED RESPONSE LEVELS FOR PREVENTIVE PAG

Radionuclide -	I-131	Cs-134	Cs-137	Sr-90	Sr-89
<u>SOURCE OF SAMPLE</u>					
Initial Deposition (u Ci/m ²)	0.13	2.0	3.0	0.5	8.0
Peak Activity:					
Pasture (uCi/kg)*	0.05	0.8	1.3	0.18	3.0
Milk (u Ci/l)	0.015	0.15	0.24	0.009	0.14
Total intake (u Ci)	0.09	4.0	7.0	0.2	2.6
Dose Commitment (rem)	1.5	0.5	0.5	0.5	0.5

*Fresh Weight

NOTE: Attachment 1 uses infants as the critical segment of the population. For I-131, the newborn infant is the critical population segment. For the other radionuclides "infant" refers to a child less than 1 year of age.

Reference: Department of Health and Human Services
Food and Drug Administration
Federal Register, Volume 47, No. 205, October 22, 1982

DERIVED RESPONSE LEVELS FOR EMERGENCY PAG

Radionuclide	I-131		Cs-134		Cs-137		Sr-90		Sr-89	
Source of Sample	*Infant-Adult		Infant-Adult		**Infant-Adult***		Infant-Adult		Infant-Adult	
Initial Deposition (u Ci/m ²)	1.3	18.0	20.0	40.0	30.0	50.0	5.0	20.0	80.0	1600.0
Peak Activity:										
Pasture (u Ci/kg)	0.5	7.0	8.0	17.0	13.0	19.0	1.8	8.0	30.0	700.0
Milk (u Ci/l)	0.15	2.0	1.5	3.0	2.4	4.0****	0.09	0.4	1.4	30.0
Total Intake (u Ci)	0.9	10.0	40.0	70.0	70.0	80.0	2.0	7.0	26.0	400.0
Dose Commitment (rem)	15.0	15.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0

- * Newborn infant critical population segment
 ** "Infant" refers to child less than 1 year of age
 *** Based on Meat-to-Man Pathway
 **** Peak activity in meat, u Ci/kg

Reference: Department of Health and Human Services
 Food and Drug Administration
Federal Register, Volume 47, No. 205, October 22, 1982

FRESH MILK PROTECTIVE ACTION WORKSHEET

Time: _____ Date: _____ Prepared by: _____

1. Area of Concern: _____
2. Enter the projected and measured pasture land ground deposition activity levels in the appropriate column.

Radionuclide	Ground Deposition Activity Levels uCi/m ²		Preventive	Response Levels uCi/m ²	
	Projected	Measured		Emergency Infant	Adult
I-131	_____	_____	0.13	1.3	18.0
Cs-134	_____	_____	2.0	20.0	40.0
Cs-137	_____	_____	3.0	30.0	50.0
Sr-90	_____	_____	0.5	5.0	20.0
Sr-89	_____	_____	8.0	80.0	1,600.0

3. Circle the projected or measured activity levels which exceed the indicated preventive response level for each radionuclide.
4. Compare the circled activity levels against Emergency adult and infant response levels. Circle the response levels which are exceeded.
5. Enter the concentration levels for pasture grass and fresh milk for each radionuclide:

Radionuclide	Pasture Grass (uCi/kg)		Preventive	Response Levels	
	Projected	Measured		Emergency Infant	Adult
I-131	_____	_____	0.05	0.5	7.0
Cs-134	_____	_____	0.8	8.0	17.0
Cs-137	_____	_____	1.3	13.0	19.0
Sr-90	_____	_____	0.18	1.8	8.0
Sr-89	_____	_____	3.0	30.0	700.0

FRESH MILK PROTECTIVE ACTION WORKSHEET
(continued)

<u>Radionuclide</u>	<u>Fresh Milk (uCi/l)</u>		<u>Response Levels</u>		
	<u>Projected</u>	<u>Measured</u>	<u>Preventive</u>	<u>Emergency</u>	
				<u>Infant</u>	<u>Adult</u>
I-131	_____	_____	0.015	0.15	2.0
Cs-134	_____	_____	0.15	1.5	3.0
Cs-137	_____	_____	0.24	2.4	4.0
Sr-90	_____	_____	0.009	0.09	0.4
Sr-89	_____	_____	0.14	1.4	30.0

6. Circle the measured activity levels which exceed the indicated preventive response level for each radionuclide.
7. Compare the circled activity levels against the emergency adult and infant response levels. Circle any response levels which are exceeded.
8. Consult Attachment 7 for Preventive Protective Actions and Attachment 8 for Emergency Protective Actions.

DRINKING WATER PROTECTIVE ACTION WORKSHEET

Time: _____ Date: _____ Prepared by: _____

1. Measured CONCENTRATION vs. Preventive Response Level (PRL)

- a. Location from which sample was taken: _____
- b. Enter the measured CONCENTRATION for each radionuclide in the space provided below:

<u>Radionuclide</u>	<u>Measured</u>	<u>PRL (pCi/l)</u>
I-131	_____	0.015
Cs-134	_____	0.15
Cs-137	_____	0.24
Sr-90	_____	0.009
Sr-89	_____	0.14

- c. Compare the measured concentrations for each radionuclide against its preventive response level. Circle the measured concentration which exceed their preventive response levels.
2. If protective actions are warranted consult Attachment 7.

DETERMINATION OF PROTECTIVE ACTIONS FOR FOODS OTHER THAN MILK

Time: _____ Date: _____ Prepared by: _____

1. Type of food: _____
2. Location where analyzed food sample originated: _____
3. Total intake values (uCi) from Preventive and Emergency PAGs, Attachments 7 and 8.

	<u>Preventive</u>	<u>Emergency</u>	
		<u>Infant</u>	<u>Adult</u>
I-131	9.09	0.9	10.0
Cs-134	4.0	40.0	70.0
Cs-137	7.0	70.0	80.0
Sr-90	0.2	2.0	7.0
Sr-89	2.6	26.0	400.0

4. Dietary Factor from Attachment 6 = _____
5. Days of Intake = _____
6. Intake Factor = a. _____ and/or b. _____
Where: Infant = 1 kg/day or 1 liter/day
Adult = 2.2 kg/day or 2.2 liter/day

7. Preventive Response Levels (PRL)

Where:

$$\begin{aligned} \text{Response Level} &= \frac{\text{Total Intake}}{\text{Dietary Factor} \times \text{Days of Intake} \times \text{Intake Factor}} \\ \text{a. I-131: PRL} &= \frac{0.09}{(\text{Item 4}) \times (\text{Item 5}) \times (\text{Item 6a})} \\ &= \frac{0.09}{(\quad) \times (\quad) \times (\quad)} \\ &= \quad \text{uCi/kg or uCi/l} \end{aligned}$$

DETERMINATION OF PROTECTIVE ACTIONS FOR FOODS OTHER THAN MILK
(continued)

- b. Cs-134: PRL = $\frac{4.0}{(\text{Item 4}) \times (\text{Item 5}) \times (\text{Item 6a})}$
 = $\frac{4.0}{(\quad) \times (\quad) \times (\quad)}$
 = _____ uCi/kg or uCi/l
- c. Cs-137: PRL = $\frac{7.0}{(\text{Item 4}) \times (\text{Item 5}) \times (\text{Item 6a})}$
 = $\frac{7.0}{(\quad) \times (\quad) \times (\quad)}$
 = _____ uCi/kg or uCi/l
- d. Sr-90: PRL = $\frac{0.2}{(\text{Item 4}) \times (\text{Item 5}) \times (\text{Item 6a})}$
 = $\frac{0.2}{(\quad) \times (\quad) \times (\quad)}$
 = _____ uCi/kg or uCi/l
- e. Sr-89: PRL = $\frac{2.6}{(\text{Item 4}) \times (\text{Item 5}) \times (\text{Item 6a})}$
 = $\frac{2.6}{(\quad) \times (\quad) \times (\quad)}$
 = _____ uCi/kg or uCi/l

Enter response levels in the Preventive column of Item 9.

8. Emergency Response Levels (ERL)

- a. I-131: ERL = $\frac{0.9}{(\text{Item 4}) \times (\text{Item 5}) \times (\text{Item 6a})}$
 (infant) = $\frac{0.9}{(\quad) \times (\quad) \times (\quad)}$
 = _____ uCi/kg or uCi/l

DETERMINATION OF PROTECTIVE ACTIONS FOR FOODS OTHER THAN MILK
(continued)

- b. I-131: ERL (adult) = $\frac{10}{(\text{Item 4}) \times (\text{Item 5}) \times (\text{Item 6b})}$
= $\frac{10}{(\quad) \times (\quad) \times (\quad)}$
= _____ uCi/kg or uCi/l
- c. Cs-134: ERL (infant) = $\frac{40}{(\text{Item 4}) \times (\text{Item 5}) \times (\text{Item 6a})}$
= $\frac{40}{(\quad) \times (\quad) \times (\quad)}$
= _____ uCi/kg or uCi/l
- d. Cs-134: ERL (adult) = $\frac{70}{(\text{Item 4}) \times (\text{Item 5}) \times (\text{Item 6b})}$
= $\frac{70}{(\quad) \times (\quad) \times (\quad)}$
= _____ uCi/kg or uCi/l
- e. Cs-137: ERL (infant) = $\frac{70}{(\text{Item 4}) \times (\text{Item 5}) \times (\text{Item 6a})}$
= $\frac{70}{(\quad) \times (\quad) \times (\quad)}$
= _____ uCi/kg or uCi/l
- f. Cs-137: ERL (adult) = $\frac{80}{(\text{Item 4}) \times (\text{Item 5}) \times (\text{Item 6b})}$
= $\frac{80}{(\quad) \times (\quad) \times (\quad)}$
= _____ uCi/kg or uCi/l

DETERMINATION OF PROTECTIVE ACTIONS FOR FOODS OTHER THAN MILK
 (continued)

- g. Sr-90: ERL = $\frac{2}{(\text{Item 4}) \times (\text{Item 5}) \times (\text{Item 6a})}$
 = $\frac{2}{(\quad) \times (\quad) \times (\quad)}$
 = _____ uCi/kg or uCi/l
- h. Sr-90: ERL = $\frac{7}{(\text{Item 4}) \times (\text{Item 5}) \times (\text{Item 6b})}$
 = $\frac{7}{(\quad) \times (\quad) \times (\quad)}$
 = _____ uCi/kg or uCi/l
- i. Sr-89: ERL = $\frac{26}{(\text{Item 4}) \times (\text{Item 5}) \times (\text{Item 6a})}$
 = $\frac{26}{(\quad) \times (\quad) \times (\quad)}$
 = _____ uCi/kg or uCi/l
- j. Sr-89: ERL = $\frac{400}{(\text{Item 4}) \times (\text{Item 5}) \times (\text{Item 6b})}$
 = $\frac{400}{(\quad) \times (\quad) \times (\quad)}$
 = _____ uCi/kg or uCi/l

Enter calculated emergency response levels in the appropriate emergency column of Item 9.

DETERMINATION OF PROTECTIVE ACTIONS FOR FOODS OTHER THAN MILK
(continued)

9. Measured concentration levels

<u>Radionuclide</u>	<u>Activity Measured uCi/kg or uCi/liter</u>	<u>Calculated Response Levels</u>	
		<u>Preventive</u>	<u>Emergency</u> <u>Infant</u> <u>Adult</u>
I-131	_____	_____	_____
Cs-134	_____	_____	_____
Cs-137	_____	_____	_____
Sr-90	_____	_____	_____
Sr-89	_____	_____	_____

10. Circle the measured concentrations which exceeds its Preventive response level.
11. Compare the circled measured activity against the Emergency Response Levels. Circle any Emergency Response Level which is exceeded.
12. Consult Attachment 7 for consideration of preventive protective actions and Attachment 8 for consideration of emergency protective actions.

DIETARY FACTORS FOR FOODS OTHER THAN MILK

<u>Group</u>	<u>Food Item</u>	<u>Dietary Factor for any single food item in the group</u>
I	Liquid Milk	0.70 infants* 0.25 adults**
II	Meat, bakery products, fresh vegetables and fruit, beverages (excluding those individually listed)	0.10
III	Fats, oils, potatoes, yams, flour, poultry, eggs, sugar; canned, frozen and dried vegetables	0.05
IV	Condiments, spices, fish and shellfish, canned, frozen and dried fruit, vegetable and fruit juices, soups and gravies, nuts, peanut butter	0.02

* Includes children less than 1 year of age.

** Based on quantity of whole fluid milk to which dairy products are
equivalent in calcium content. Includes cream, cheese and ice
cream.

PREVENTIVE PROTECTIVE ACTIONS

<u>Food Type</u>	<u>Protective Action</u>
1.0 <u>Fresh Milk</u>	
1.1 <u>Farm</u>	<ul style="list-style-type: none">a. Remove lactating dairy animals from contaminated pasturage, move the animals in-doors, and provide uncontaminated feed (had been stored in-doors or covered out-of-doors).b. Provide animals with uncontaminated water. Sources may be covered wells, covered cisterns, and closed storage tanks. Do not use surface water such as streams, ponds, or open reservoirs.c. If individual milkings cannot be stored in separate tanks, take a representative one-gallon sample from each milking, affix identification and refrigerate. Samples will be picked up by a survey team.d. Store for a prolonged period of time at reduced temperature.
1.2 <u>Processor</u>	<ul style="list-style-type: none">a. Withhold contaminated milk from the market to allow radioactive decay of short-lived radionuclide. This may be achieved by storing frozen fresh milk, frozen concentrated milk or frozen concentrated milk products.b. Store for a prolonged period of time at a reduced temperature in conjunction with a special pasteurization process using ultra high temperatures.c. Divert the production of fluid milk for the production of dry whole milk, nonfat dry milk, butter or evaporated milk.

PREVENTIVE PROTECTIVE ACTIONS (continued)

<u>Food Type</u>	<u>Protective Action</u>
	d. Attempt to store all incoming shipments in separate tanks and segregate milk not originating in the 50-mile EPZ. Take a one-gallon representative sample of each incoming shipment, affix identification (source, date/time of arrival, carrier, volume, in-plant storage tank, etc.) and refrigerate. Samples will be picked-up by a survey team.
1.3 <u>Public</u>	a. No advisory.
2.0 <u>Drinking Water</u>	
2.1 <u>All</u>	a. Do not use surface water (streams, lakes, ponds) for human and animal consumption. b. Limit the ingestion of potable water (either for drinking or cooking) until the source has been checked and approved for consumption. c. Water stored in closed containers or vessels prior to the incident may be ingested. This includes refrigerator storage, closed tanks, covered wells, etc. d. Bottled water and canned beverages and juices may be used as water sources.
3.0 <u>Fresh Fruits and Vegetables</u>	Includes crops in the field, in transit to market, roadside stands, markets and in homes.
3.1 <u>Commerce</u>	a. Remove surface contamination by washing, brushing, scrubbing or peeling. b. Food in sealed packages, cans, cartons, barrels, etc. needs no treatment.

PREVENTIVE PROTECTIVE ACTIONS
(continued)

<u>Food Type</u>	<u>Protective Action</u>
3.2 <u>Public</u>	<ul style="list-style-type: none">a. If stored in the open, remove surface contamination by washing, brushing, scrubbing or peeling.b. Food in sealed packages, in refrigerators or closets are otherwise protected, needs no treatment.
4.0 <u>Fin Fish and Shell Fish</u>	<p>Commercial fishing firms and charter fishing boats.</p> <ul style="list-style-type: none">a. Suspend fishing operations until resumption is recommended.b. Check the catch made on the day of the advisory.c. Keep catch covered until transported outside the area of possible contamination.
5.0 <u>Animal Feeds (other than pasture grass)</u>	<p>Use feed that had been stored indoors.</p>
6.0 <u>General</u>	
6.1 <u>Public</u>	<ul style="list-style-type: none">a. Preserve food before contamination by canning, freezing and dehydration.b. Cooked or raw food may be stored in a refrigerator, closet, box, or other closed container.c. Store food to permit radioactive decay of short lived radionuclides.

EMERGENCY PROTECTIVE ACTIONS

<u>Food Type</u>	<u>Protective Action</u>
1.0 <u>Fresh Milk</u>	
1.1 <u>Farms</u>	<ul style="list-style-type: none">a. Prevent introduction of milk supplies into commerce.b. Provide animals with uncontaminated feed - stored in-doors or protected.c. Provide animals with uncontaminated water - stored in covered or closed tanks or from a deep well.d. If individual milkings cannot be stored in separate tanks, take a representative one-gallon sample of each milking, affix identification and refrigerate. Samples will be picked up by a survey team.
1.2 <u>Processor</u>	<ul style="list-style-type: none">a. Withhold contaminated milk from the market to allow radioactive decay of short-lived radionuclide. This may be achieved by storing frozen fresh milk, frozen concentrated milk or frozen concentrated milk products.b. Store for a prolonged period of time at a reduced temperature in conjunction with a special pasteurization process using ultra high temperatures.c. Divert the production of fluid milk for the production of dry whole milk, nonfat dry milk, butter or evaporated milk.d. Attempt to store all incoming shipments in separate tanks and segregate milk not originating in the 50-mile EPZ.

EMERGENCY PROTECTIVE ACTIONS
(continued)

<u>Food Type</u>	<u>Protective Action</u>
	e. Take a one-gallon representative sample of each incoming shipment, affix identification (source, date/time of arrival, carrier, volume, in-plant storage task, etc.) and refrigerate. Samples will be picked up by a survey team.
1.3 <u>Public</u>	a. Fresh milk on hand prior to the advisory and stored in closed containers may be used. b. Dry or canned milk in closed containers may be used.
2.0 <u>Water</u>	
2.1 <u>Farms</u>	a. Do not use surface water for human or animal consumption. Surface water may be used for sanitary and non-consumption other purposes. b. Other water sources identified as contaminated should not be consumed but may be used for other purposes. c. Water stored in closed tanks or vessels prior to the advisory may be consumed.
2.2 <u>Commerce</u>	a. Water identified as contaminated should not be used for processing of materials (consumables, containers) which will enter the food chain. b. Contaminated water may be used for other industrial and commercial operations if so advised.
2.3 <u>Public</u>	a. Secure outlets of wells for water identified as contaminated. Do not use reservoir water identified as

EMERGENCY PROTECTIVE ACTIONS
(continued)

<u>Food Type</u>	<u>Protective Action</u>
	contaminated. Do not use water for consumption that has not been checked approved, this water may be used for sanitary and other purposes. If
	b. Use alternate sources of liquid such as: water drawn and stored in closed containers prior to the advisory, bottled water, bottled/canned beverages and juices, and water provided by emergency organizations such as the American Red Cross and the National Guard. Arrangements for alternate, emergency water will be made by the Health Services Coordinator.
3.0 <u>Other Foods</u>	
3.1 <u>Commerce</u>	a. Prevent introduction of food type into commerce if it has been identified as contaminated.
	b. Consider other sources of food originating outside the 50-mile EPZ.
	c. Do not process or vend unpackaged food if the operations area is contaminated.
3.2 <u>Public</u>	a. Restrict diet to foods stored in closed containers prior to the advisory or packaged, sealed foods.
	b. Fresh fruits and vegetables should be thoroughly washed, brushed, scrubbed, or peeled.
4.0 <u>General</u>	a. Restrict diet to foods not identified as contaminated or originating outside the 50-mile EPZ.
	b. Stay alert for public information bulletins.

STATE OF NEW YORK

DAIRY FARMS

Putnam County

Burdick Farms
Patterson, NY

Mendel Farm
Patterson, NY

Post Farm
Brewster, NY

Turner Farm
Patterson, NY

Salmon Farm
Brewster, NY

Westchester County

Adams Farm
Cross River, NY

Bates Farm
North Salem, NY

Suffolk County

Andrew Babinski
Water Mill, NY

Joseph Strobel
Center Moriches, NY

Peter Salm
Southampton, NY

SUNY
Farmingdale, NY

Carwytham Farm, Inc.
Bridgehampton, NY

STATE OF NEW YORK
PROCESSING PLANTS

Suffolk County

Buttercup Farms, Inc.
Terryville, NY

Charles Schwenk, Jr., Inc.
Easthampton, NY

Dellwood Farms, Inc.
Copiague, NY

Instantwhip - New York, Inc.
Farmingdale, NY

Oak Tree Farm Dairy, Inc.
East Northport, NY

Suffolk Processing Co., Inc.
Lindenhurst, NY

SUNY
Farmingdale, NY

Nassau County

Alan, Kenneth & Bernard Gouz
Dutch Broadway
Elmont, NY

Hunt Wesson Foods, Inc.
639 Merrick Road
Lynbrook, NY

Vesuvio Cheese, Inc.
972 Glen Cove Avenue
Glen Cove, NY

SUNY Agric. & Tech. Institute
Farmingdale, NY

Nassau Ice Cream Co., Inc.
Roslyn, NY

Heller Enterprises, Inc.
East Rockaway, NY

Queens County Milk & Wholesale Frozen Desserts

Kraftco, Inc. (Ice Cream Plant)
Long Island City, NY

Queensboro Farm Products, Inc.
35-13 41st Street
Long Island City, NY

Peter Benfaremo
Corona, NY

Horstmann Mix & Cream Co., Inc.
Long Island City, NY

Mayflower Ice Cream Corp.
Long Island City, NY

Olympic Ice Cream Co., Inc.
Richmond Hill, NY

Dairylea Coop., Inc.
Woodside, NY

STATE OF NEW YORK

PROCESSING PLANTS
(continued)

Queens County Milk & Wholesale Frozen Desserts (continued)

Honeywell Farms, Inc.
155-25 Styler Road
Jamaica, NY

Beatrice Foods Co., Inc.
22-11 38th Avenue
Long Island City, NY

H. Schwartz, H & S Rosenson
80-22 Caldwell Avenue
Elmhurst, NY

Liberty Farms Inc.
103-45 98th Street
Ozone Park, NY

Westchester County

Dellwood Foods, Inc.
Yonkers, NY

Neilsen Ice Cream Co., Inc.
Port Chester, NY

J. B. & Sons Ltd.
Yonkers, NY

Westchester Processing Corp.
Peekskill, NY

Kings County

Distefano & Taranto
Brooklyn, NY

Gold Star Ice Cream Co., Inc.
Brooklyn, NY

Infant Formula Laboratory
Service, Inc.
Brooklyn, NY

Grandview Dairy Inc.
60-71 Metropolitan Avenue
Brooklyn, NY

R. Leone
Brooklyn, NY

L. B. Gardens, Inc.
Brooklyn, NY

Pecoraro Dairy Products, Inc.
Brooklyn, NY

Marchiony Ice Cream, Corp.
Brooklyn, NY

Karl Droge, Inc.
Brooklyn, NY

Meadow Gold Corp.
Brooklyn, NY

Ginos Italian Ices, Inc.
Brooklyn, NY

Metro Kosher Ices, Inc.
Brooklyn, NY

STATE OF NEW YORK

PROCESSING PLANTS
(continued)

Kings County (continued)

Rehse's Ice Cream Co., Inc.
Brooklyn, NY

Evaristo Ruiz
Brooklyn, NY

Roma Italian Ices Co., Inc.
Brooklyn, NY

Savarese Italian Pastry
Shoppe, Inc.
Brooklyn, NY

Bronx

Coco Helado Inc.
Bronx, NY

Hermany Farms, Inc.
2338-42 Hermany Avenue
Bronx, NY

Senator Frozen Products, Co., Inc.
Bronx, NY

Marbledale Processing Corp.
2880 Exterior Street
Bronx, NY

Silver Crown Ice Cream Products
Bronx, NY

Wakefield Processing Corp.
1591 East 233 Street
Bronx, NY

Gold Medal Farms, Inc.
1157 East 156th Street
Bronx, NY

New York County

Chinatown Ice Cream, Inc.
New York, NY

Lucy Ricciardi Inc.
New York, NY

DPS Investors, Inc.
New York, NY

Richmond County

Consolidated Foods Corp.
Staten Island, NY

STATE OF NEW YORK

POULTRY FARMS

John Bellini
Mecox Bay Boultry Farm
Watermill, NY 11976

Bridge View Duck Farm
1581 West Main Street
Riverhead, NY 11901

Broadcove Duck Farm Inc.
119 Hubbard Avenue
Riverhead, NY 11901

C&R Duck Farm Inc.
Tanners Neck Lane
Westhampton, NY 11977

Carman River Duck Farm
Montauk Highway
Brookhaven, NY 11719

Stanley Chornoma
Bay Avenue
East Moriches, NY 11940

H. F. Corwin & Son
Main Road, Rt. 25
Aquebogue, NY 11931

Gallo Duck Farm Inc.
Zipp Avenue
E. Patchogue, NY 11772

William Hubbard & Son
Hubbard Avenue
Riverhead, NY 11901

Jurgielewicz Duck Farm
Barnes Road
Moriches, NY 11955

C. W. Massey & Son
Private Road
Eastport, NY 11941

Moriches Duck Farm Inc.
Barnes Road
Moriches, NY 11955

John Podloski
Bay Avenue
East Moriches, NY 11940

John Romanowski & Son
Private Road
East Moriches, NY 11940

Seatuck Duck Farm Inc.
River Avenue
Eastport, NY 11941

Shubert Duck Farm
Route 58
Riverhead, NY 11901

Harry A. Smith
Bay Avenue
East Moriches, NY 11940

Emory Tuttle
Bay Avenue
Eastport, NY 11941

Vigliotta Bros Inc.
Private Lane
East Moriches, NY 11940

Vigliotta Bros Inc.
Bay Avenue
East Moriches, NY 11940

STATE OF NEW YORK

POULTRY FARMS
(continued)

Kansas Duck Farm
Adelaide Avenue
East Moriches, NY 11940

Peter Kostuk & Son Inc.
Bay Avenue
Eastport, NY 11941

Long Island Research Laboratory
Old Country Road
Eastport, NY 11941

Will Miluski's Poultry Farm, Inc.
Route 25
Calverton, NY 11933

Warners Duck Farm Inc.
River Road
Calverton, NY 11933

Whitebrook Duck Farm
39 Whitebrook Drive
Riverhead, NY 11901

Leroy Wilcox
Brushy Neck Lane
Speonk, NY 11972

STATE OF NEW YORK

HOG FARMS

(With More than 50 Hogs)

Westchester County

Hemlock Hill Farm
506 Croton & Maple Avenue
Peekskill, NY

Suffolk County

Macedonio Bros.
Macedonio Farm Inc.
436 Peconic Street
Ronkonkoma, NY

Suffolk County Farm
Yaphank Avenue
Yaphank, NY

Joseph A. Visco
NYS SUNY Agric. & Tech. College
Melville Road
Farmingdale, NY

STATE OF NEW YORK
VEGETABLE AND FRUIT GROWERS

Nassau County

Rottkamps Farm Stand
554 Hempstead
Elmont
516-FL2-2940

Herman's Farm
1021 Jerusalem
Uniondale
516-486-8769

Young's Farm
110 Hegemans La.
Old Brookville
1/4 mi. N. of Rt. 107
516-626-9638

Meyers Plant and Produce
Piquets La.
Woodbury
516-921-4835

Suffolk County

Mediavilla Fruit Farm
1501 E. Jericho
Huntington
516-427-2712

South Breeze Farm
260 Old Country Rd. &
New York Ave.
Melville
516-423-5914

Meyers' Farm
Rt. 2 Old Country Rd.
Melville
516-692-9775

Grossmann's Farm
488 Hempstead
Malvern
EX. 17S Southern State Pkwy
516-LY9-0900

Glen Head Farms
One Elm Place
Glen Head
516-676-6686

Filasky Farms
Rt. 25A
Brookville
516-MA6-0317

Silberstein Farm Stand
Pulaski Rd.
Huntington
516-423-6141

White Post Farms
250 Old Country Road
Melville
516-423-9373

Schmitt Farms
26 Pine Lawn Rd.
Melville Ex. 49N L.I.E.
516-423-5693

STATE OF NEW YORK
VEGETABLE AND FRUIT GROWERS
(continued)

Suffolk County (continued)

Richter's Orchard
Pulaski Rd.
Northport
516-261-1980

Johnson's Farm
123 Cedar Rd.
East Northport
516-266-1822

Bright Waters Farm
1624 Manatuk Blvd.
Bayshore
1/4 mi. N. Ex. 42 S. Parkwy
516-MO5-5411

Louie & Vinnie
Deer Park Ave. S.
Dix Hills
Ex. 51S L.I.E.
516-864-2573

Filasky Farms
Rt. 347
Smithtown Bypass
Nesconset
516-265-3434

Borella's Farm Stand
483 Edgewood
St. James
516-JU4-5369

Scappy's Farm
Boyle and Old Town Rds.
Pt. Jefferson Station
516-473-9277

Ackerly's Farm Stand
Stootloff Rd.
East Northport
516-FO8-8785

Silberstein Farm Stand
319 Cuba Hill Rd.
Elwood
516-368-6312

Davis Farmstand
624 Deer Park Ave.
Dix Hills
Ex. 51S L.I.E.
516-586-9204

Red Barn Farms
Bagatelle Rd.
Dix Hills
Ex. 50 N. L.I.E.
516-549-1159

Yellowtop Farm Stand
Mt. Pleasant Rd.
Smithtown
516-265-1663

BB & GG
Rt. 25A
St. James
516-862-9075

Davis Peach Farm
Rt. 25A
Mt. Sinai
516-473-9065

STATE OF NEW YORK
VEGETABLE AND FRUIT GROWERS
(continued)

Suffolk County (continued)

Keibel Farms
530 Morseblock Rd.
Farmingville
516-732-3344

Lewin Farms
Sound Ave.
Wading River
Follow signs to Wildwood
State Park
516-929-4327

Lohmann's Farm Stand
S. Country Rd.
Brookhaven
516-286-1078

Donahue's Farm
Main Rd.
Calverton
516-727-0149

Fox Hollow Farm Stand
143 Sound Ave.
Calverton
516-727-1786

Olish's Farm
Eastport-Manorville Rd.
Eastport
516-325-0539

Anderson's Farmstand
Rt. 58
Riverhead
516-727-1129

Yankee Farms
241 Middle Co. Rd.
Coram
516-732-3171

Bill's Pick Your Own
Rt. 25A & Mannon Rd.
Wading River

Sabat Farm
116 Sound Ave.
Baiting Hollow
516-727-2426

Fritz Lewin Farm
Sound Ave.
Calverton
Cr. of Sound & Edwards Aves.
516-727-3346

Spruce Acres Farm
Main Rd.
Calverton
516-727-4772

Lacorte Farm Stand
Montauk Hwy.
Moriches
516-875-1140

Louis Gatz
120A Sound Ave.
Riverhead
516-722-3703

STATE OF NEW YORK
VEGETABLE AND FRUIT GROWERS
(continued)

Suffolk County (continued)

Briermere Farmstand & Bakery
Sound Ave. & Rt. 105
Riverhead
516-722-3931

Landscape Adventure Farm Stand
Riverhead
516-722-4751

Red Barn Farmstand
Main Rd.
Aquebogue
516-722-3676

William Polak Farms
Church La.
Aquebogue
516-722-3049

The Cider Mill
Main Rd.
Laurel

Manor Hill Farm
Main Rd.
Mattituck
516-298-8682

Wickham's Fruit Farm
Main Rd.
Cutchogue
12 mi. E. of Riverhead
516-734-6441

Sunburst Acres
96 Sound Ave.
Riverhead
1/2 mi. E. Northville Tpk.
516-722-3572

Young's Orchard & Country
Gift Shop
54 Sound Ave.
Riverhead
516-727-5363

McKay's Farm Stand
Main Rd.
Aquebogue
516-722-4142

Little Chief
Rt. 25
Aquebogue
516-722-3077

Cooper Farms
Breakwater Rd.
Mattituck
516-298-4949

Farmer Mike's Farm Stand
Rt. 25
Cutchogue

North Fork Farm Stand
North Rd.
Peconic
516-765-1617

STATE OF NEW YORK
VEGETABLE AND FRUIT GROWERS
(continued)

Suffolk County (continued)

Sep's Farm Main Rd. East Marion 516-477-1583	Ed Latham Farm, Inc. 25A Main Rd. Orient 516-323-2593
Terry's Farmstand Main Rd. Orient	Penny Farms Shinnecock Rd. Hampton Bays 516-728-4466
Krazewski Farm Stand Edge of Woods Rd. Southampton	North Sea Farms Noyac Rd. Southampton 516-283-0735
The Milk Pail Montauk Hwy. Water Mill	The Green Thumb of Water Mill Rt. 27 Water Mill 516-726-4989
Hampton Farms Montauk Hwy. Water Mill 516-726-4877	Benny Graboski Mitchell La. Bridgehampton 516-537-1335
Sagg Swamp Farm Montauk Hwy. & Rt. 27 Sageponack 1 mi. E. Bridgehampton 516-537-0347	Paul Rodgers Farm Stand South Country Rd. & Montauk Hwy. Speonk 516-325-0651
George Chereb Pt. Jefferson 516-473-5518	

STATE OF NEW YORK
VEGETABLE AND FRUIT GROWERS
(continued)

Queens County

Klein's Farmstand
194-15 73rd Ave.
Fresh Meadow
212-454-0678

Westchester County

Square Deal Farm
328 W. Hartsdale Ave.
Hartsdale

Westchester View Farms
701 Dobbs Ferry Rd.
Hartsdale
914-369-2935

Braewold
Wood Rd.
Mt. Kisco
914-666-8602

Henker Bros. Farm
Banksville & Greenwich Rd.
Bedford
2 1/2 mi. S. on Rt. 22
914-234-3698

Outhouse Orchards
Hardscrabble Rd.
Croton Falls
1 1/4 mi. E. of 1684, Ex. 8
914-277-3188

The Haight Orchards
Hardscrabble Rd.
Croton Falls
1684 to Ex. 8
914-277-3507

Putnam County

Salinger Orchards Inc.
Guinea Rd.
Brewster 1684 to Ex. 8
914-277-3521

Suffolk County (Wine Grapes and Juices)

D.L. Mudd Vineyard
North Rd.
Southold
516-765-1248

Mike Kaloski and Son
Alva's La.
Cutchogue
516-734-6836

STATE OF NEW YORK
VEGETABLE AND FRUIT GROWERS
(continued)

Suffolk County (Wineries)

Hargrave Vineyard
North Rd.
Rt. 27A
Cutchogue
516-734-5158

STATE OF NEW YORK

POTATO PROCESSING PLANTS - NASSAU & SUFFOLK COUNTIES

John Cichanowicz
RD Box 580
Riverhead, NY 11901

Frank Danielowich
Deep Hole Road
Calverton, NY 11933

Farmers Exchange
Osborn Avenue
Riverhead, NY 11901

G & W Farms
RD 543
Riverhead, NY 11901

Hulse Farms
Hulse Landing Rd.
Wading River, NY

Karlin Farms
Riley Avenue
Calverton, NY 11933

John Karpinski
47 1/2 Sound Avenue
Riverhead, NY 11901

Max Korus & Son
Route 25
Calverton, NY 11933

Dewey Lewin & Sons
Sound Avenue
Calverton, NY 11933

Fritz Lewin
Sound Avenue
Calverton, NY 11933

Chichanowicz Bros.
P.O. Box 82
Aquebogue, NY 11931

Cybulski Bros.
Depot Lane
Cutchogue, NY 11935

Emil & Walter Breitenbach
West Lane
Aquebogue, NY 11931

A & H Domaleski
Oregon Road
Mattituck, NY 11952

Steve J. Doroski Produce
North Road
Southold, NY 11971

Fargo Potato Co.
Laurel Lane
Laurel, NY 11948

Felix Gajeski & Sons
Laurel, NY 11948

Turnpike Acres Sales Corp.
584 Northville Turnpike
Riverhead, NY 11901

Ed Harbes
Sound Avenue
Mattituck, NY 11952

Martin Sidor & Sons
Box 841
Mattituck, NY 11952

STATE OF NEW YORK

POTATO PROCESSING PLANTS - NASSAU & SUFFOLK COUNTIES
(continued)

Nedos Farms
84 Route 25A
Shoreham, NY 11786

Precht1 Bros.
716 Canal Rd.
Mt. Sinai, NY 11766

Daniel Wells
94 Sound Avenue
Riverhead, NY 11901

Eugene Wesnofske
Rt. 27A North Road
Peconic, NY 11958

H. R. Talmage & Son
36 Sound Avenue
Riverhead, NY 11901

Avery Young
Rt. 25
Aquebogue, NY 11931

S. Zaweski
Main Road
Jamesport, NY 11947

Zanieski Farms Inc.
Box 166, Oregon Road
Cutchogue, NY 11935

Richie Anderson Farms
Middle Road, Box 166
Riverhead, NY 11901

Bergold & Jakefield
515 Mt. Sinai/Coram Road
Mt. Sinai, NY 11766

Fred Terry Farms
Main Road
Orient, NY 11957

Todd Wells
Sound Avenue
Northville, NY 11901

Vernon Wells, Jr.
Sound Avenue
Northville, NY 11901

Albin Pietrewicz
Coxs Lane
Cutchogue, NY 11935

H. A. Pollack
Box 608
Riverhead, NY 11901

Geo. Reeves & Sons
Main Road
Aquebogue, NY 11931

Henry J. Romanowski
P.O. Box 789, Theresa Drive
Mattituck, NY 11952

Jerry Schulman
Port Jefferson Sta., NY 11776

H. Sacks & Sons
Westphalia Road
Mattituck, NY 11952

John Sidor, Jr.
R.R. Avenue
Mattituck, NY 11952

STATE OF NEW YORK

POTATO PROCESSING PLANTS - NASSAU & SUFFOLK COUNTIES
(continued)

Nedos Farms
84 Route 25A
Shoreham, NY 11786

Prechtl Bros.
716 Canal Rd.
Mt. Sinai, NY 11766

Daniel Wells
94 Sound Avenue
Riverhead, NY 11901

Eugene Wesnofske
Rt. 27A North Road
Peconic, NY 11958

H. R. Talmage & Son
36 Sound Avenue
Riverhead, NY 11901

Avery Young
Rt. 25
Aquebogue, NY 11931

S. Zaweski
Main Road
Jamesport, NY 11947

Zanieski Farms Inc.
Box 166, Oregon Road
Cutchogue, NY 11935

Richie Anderson Farms
Middle Road, Box 166
Riverhead, NY 11901

Bergold & Wakefield
515 Mt. Sinai/Coram Road
Mt. Sinai, NY 11766

Fred Terry Farms
Main Road
Orient, NY 11957

Todd Wells
Sound Avenue
Northville, NY 11901

Vernon Wells, Jr.
Sound Avenue
Northville, NY 11901

Albin Pietrewicz
Coxs Lane
Cutchogue, NY 11935

H. A. Pollack
Box 608
Riverhead, NY 11901

Geo. Reeves & Sons
Main Road
Aquebogue, NY 11931

Henry J. Romanowski
P.O. Box 789, Theresa Drive
Mattituck, NY 11952

Jerry Schulman
Port Jefferson Sta., NY 11776

H. Sacks & Sons
Westphalia Road
Mattituck, NY 11952

John Sidor, Jr.
R.R. Avenue
Mattituck, NY 11952

STATE OF NEW YORK

POTATO PROCESSING PLANTS - NASSAU & SUFFOLK COUNTIES
(continued)

Steve Huggard
Rt. 25
Orient, NY 11957

Keene & Johnson
Sound Avenue
Jamesport, NY 11947

John P. Krupski Bros. Inc.
Depot Lane
Cutchogue, NY 11935

John Kujawski & Son Inc.
143 Sound Avenue
Riverhead, NY 11901

F.J. Mc Bride & Sons Inc.
Oregon Road
Cutchogue, NY 11935

Martin McKasty, Jr.
Main Road
Aquebogue, NY 11931

Ben Orlowski
Main Road
Cutchogue, NY 11935

Wright Supply Corp.
Rt. 58 & Osborn Avenue
Riverhead, NY 11901

Wulfurst Farms
151 Sound Avenue
Calverton, NY 11933

Zeh Bros.
Main Road
Calverton, NY 11933

Richard Reeve
73 Sound Avenue
Riverhead, NY 11901

Richard Ringhoff
Atlantic Avenue, Box 51
East Moriches, NY 11940

Tony Ruskowski
Timber Drive
Calverton, NY 11933

Smith Pastures Inc.
Rt. 25
Calverton, NY 11933

Henwar Farms
Box 608
Riverhead, NY 11901

H. A. Pollack
Riverhead, NY 11901

Edward J. Sujecki
Twomey Avenue
Calverton, NY 11933

David Wines
141 Sound Avenue
Riverhead, NY 11901

Stanley Sydlowski
Sound Avenue
Riverhead, NY 11901

John Keller
99 Sound Avenue
Riverhead, NY 11901

STATE OF NEW YORK

POTATO PROCESSING PLANTS - NASSAU & SUFFOLK COUNTIES
(continued)

South Shore Produce
Drawer AA
Bridgehampton, NY 11932

F & J. Stachecki
RD 660 - 0
Southampton, NY 11968

Szczepankowski
Hollow Road Box 38
Wainscott, NY 11975

Tony Tiska Inc.
Millstone Road
Bridgehampton, NY 11932

Edward Tiska
Lumber Lane
Bridgehampton, NY 11932

Howell Topping & Henry Dankowsky
Hollow Rd.
Wainscott, NY 11975

Water Mill Export
Box 213
Water Mill, NY 11976

Raymond Wesnofske
Box A2
Bridgehampton, NY 11932

Remi Wesnofske Inc.
Box AD Brick Kiln Road
Bridgehampton, NY 11932

William Lindsay
Cox Neck Road
Mattituck, NY 11952

Claude Schwonik
Box 58, Rt. 25A
Calverton, NY 11933

Joseph Troyan
Church Lane
Aquebogue, NY 11931

John Berezny
Sound Avenue
Riverhead, NY 11901

A. Babinski Farm Partnership
Mecox Road
Water Mill, NY 11976

Baldwin State, Inc.
Foster Avenue
Bridgehampton, NY 11975

A.C. Carpenter Inc.
Deerfield Road
Water Mill, NY 11976

Halsey Corwith
Head of Pond Road
Water Mill, NY 11976

Tom Conklin
Hay Ground Road
Bridgehampton, NY 11932

Falkowski Farms
Millstone Road
Bridgehampton, NY 11932

Cliff Foster
Sagaponack - Main Street
Sagaponack, NY 11962

STATE OF NEW YORK

POTATO PROCESSING PLANTS - NASSAU & SUFFOLK COUNTIES
(continued)

Bauer Farms
Skunk Lane
Cutchogue, NY 11935

Stanley Osip
35 Bay Avenue
East Moriches, NY 11940

H. Sacks & Sons, Inc.
Montauk Highway
Bridgehampton, NY 11932

Southampton Produce Dist., Inc.
P.O. Box 809
Bridgehampton, NY 11932

NAME & ADDRESS

Great A & P Tea Co.
Box 338
Riverhead, NY 11901

Buswick Comm. Co., Inc.
Box K
Farmingdale, NY 11735

I. M. Young
Rt. 58 & Osborn Avenue
Riverhead, NY 11901

Rosko Produce Co., Inc.
Box 1393
Southampton, NY 11968

ADDITIONAL SITES

1. North side of Sound Avenue
opposite West Lane,
Riverhead
2. East side Kroemer Avenue,
Riverhead
3. Youngs Avenue, Southold
4. Sound Avenue, Mattituck
5. Osborn Avenue, Riverhead
1. R.R. Avenue, Jamesport
2. Sound Avenue, Riverhead
1. Depot Lane Cutchogue at
R.R.
2. Osborn Avenue. Riverhead
1. Butter Lane, Bridgehampton
2. Powell Avenue, Southampton

STATE OF CONNECTICUT
PROCESSING PLANTS

Fairfield County

Dewhirst Dairy, Inc.
Bridgeport, CT

Marcus Dairy, Inc.
Danbury, CT

Wade's Dairy, Inc.
Fairfield, CT

Stew Leonard's Dairy
Norwalk, CT

Shelton's Dairy
Shelton, CT

Borden, Inc.
Stratford, CT

New Haven County

Cumberland Farms of CT, Inc.
Meriden, CT

Greenbacher Schwink, Inc.
Meriden, CT

Mill Pond Farm, Inc.
Milford, CT

Maple Tree Farm
North Branford, CT

Masonic Charity Foundation of CT
Wallingford, CT

Hartford County

Lower Lane Dairy
Berlin, CT

Kraft, Inc.
Hartford, CT

The Guida-Seibert Dairy Co.
New Britain, CT

Yankee Milk, Inc.
Newington, CT

Mohawk Farms, Inc.
Newington, CT

STATE OF CONNECTICUT

DAIRY FARMS

Fairfield County

Hollyrock Farm,
Easton, CT

Pulaksi Dairy
Monroe, CT

Russell M. Gerow
New Fairfield, CT

Castle Hill Farm
Newtown, CT

Arigideen Farm
Ridgefield, CT

R.J. & L.A. McEwen
Shelton, CT

Walt's Dairy Farm
Shelton, CT

Shelton's Dairy
Shelton, CT

Ludwig Stern
Shelton, CT

Joseph Wabuda
Shelton, CT

John Wiacek, Sr.
Shelton, CT

Robert T. Wilson
Shelton, CT

Babbling Brooks Farm
Sherman, CT

Happy Acres Farm
Sherman, CT

Upland Pastures Farm
Sherman, CT

Middlesex County

H. A. and/or R. Berten
Durham, CT

Henry Bugai
Durham, CT

Friendly Acres Dairy Farm
Durham, CT

Clark Brothers
Durham, CT

R.H., R.R. Rowe
Durham, CT

Raymond R. Wimler
Durham, CT

William E. Dill
East Haddam, CT

Maple Ridge Farms
East Haddam, CT

Grandpa Hill Farm
East Haddam, CT

Pach Stock Farm
Moodus, CT

W.D., M.B. Smith
Colchester, CT

Saltus Farm
East Hampton, CT

J. or A. Dill
Colchester, CT

STATE OF CONNECTICUT

DAIRY FARMS
(continued)

Middlesex County (Cont.)

Halls Pride Farm
East Hampton, CT

Mid Valley Acres
Killingworth, CT

John Kolman
Middletown, CT

Walnut Hill Farm
Middlefield, CT

Linus L. Sanstrom, Jr.
Middlefield, CT

Far View Farm
Middlefield, CT

Brock Farm
Middletown, CT

Wilbur R. Harris
Middletown, CT

Willie Harvey
Middletown, CT

Higgins Farm
Middletown, CT

Edward Hills
Middletown, CT

Lackawanna Farms
Middletown, CT

Schieman Farm
Middletown, CT

Arbutusland Farm
Middletown, CT

New Haven County

Elm Spring Farm
Seymour, CT

John B. Earley
Westville, CT

Rocky Corner Farm
Westville, CT

James J. Medlyn
Stony Creek, CT

Bouldler Knoll Farm
Cheshire, CT

Fudge Mountain View Farm
Cheshire, CT

McConney Bros.
Derby, CT

AL-SA Acres
Guilford, CT

John W. Dwyer
Guilford

Thomas W. Haggarty
Guilford, CT

Pasquale F. Esposito
Hamden, CT

Hickory Grove Farm
Meriden, CT

Charles Greenbacker & Sons, Inc.
Farm 1
Meriden, CT

Charles Greenbacker & Sons, Inc.
Farm 2
Meriden, CT

STATE OF CONNECTICUT

DAIRY FARMS
(continued)

New Haven County (Cont.)

Sievert Dairy Farm, Inc.
Meriden, CT

Richard L. Westfort
Meriden, CT

Fox Cliff
Naugatuck, CT

F.J. & L. Augur
Northford, CT

Newton Brothers
Northford, CT

J.W. or P.A. Page
North Haven, CT

Richard Page
North Branford, CT

Walter Palasiewski
Northford, CT

Riverside Farm
Northford, CT

Conhurst Farm
North Haven, CT

Harry E. Hansen
North Haven, CT

Walter S. Hine
Orange, CT

Ajello's Farm
Oxford, CT

Jensen's Dairy
Seymour, CT

James C. Olsen
Oxford, CT

Schreiber Farms
Oxford, CT

Edward Vaivoda
Seymour, CT

Alfred S. Clark
Waterbury, CT

Bucks Hill Goat Dairy
Southbury, CT

Stoney Acres Farm
Southbury, CT

R.K. Mitchell & Son
Southbury, CT

Edward A. Platt, III
Southbury, CT

Southbury Training School
Southbury, CT

Alfred C. Anderson
Wallingford, CT

Cella Bros.
Wallingford, CT

David Cella
Wallingford, CT

CO-AG Farm, Inc.
Wallingford, CT

Michale Dwyer
Durham, CT

STATE OF CONNECTICUT

DAIRY FARMS
(continued)

<u>New Haven County (Cont.)</u>	<u>New London County</u>
Carl Farkas Wallingford, CT	Beebe Farm Fitchville, CT
Fairlawn Dairy Farm Wallingford, CT	Julja Gejdenson Fitchville, CT
John F. Kranyak Wallingford, CT	A. & R. Goulart Fitchville, CT
Masonic Charity Foundation of CT Wallingford, CT	Stephen Jurczyk Fitchville, CT
Fieldstone Farm Wallingford, CT	John T. Mcmanus Fitchville, CT
Albert Tartaglia Wallingford, CT	Wauwecus Farm Dairy Norwich, CT
Three Meadows Farm Wallingford, CT	M.S. or A. Maynard Colchester, CT
Claude Tremper Wallingford, CT	William Carney North Franklin, CT
Thomas J. Wall Wallingford, CT	J. and/or L. Cecchini Willimantic, CT
Alex Werbiski Wallingford, CT	T.F. and/or J.M. Cone North Franklin, CT
Dwight Williams & Son, Inc. Wallingford, CT	Edward C. Fox Columbia, CT
Robert D. Hitchcock Woodbridge, CT	Steven Grabarek Lebanon, CT
Massaro Farm Ansonia, CT	Oweneco Farms Lebanon, CT
Frederick T. Sheperd New Haven, CT	B. and/or M. Himmelstein Lebanon, CT

STATE OF CONNECTICUT

DAIRY FARMS
(continued)

New London County (Cont.)

Edwin Kasacek Lebanon, CT	Stebner Farm Lebanon, CT
Kick Hill Farm Lebanon, CT	Siegmund Strauss Lebanon, CT
Harold A. Krause Willimantic, CT	Elm Lawn Farm Lebanon, CT
Oak Leaf Farm Lebanon, CT	John P. Walden Lebanon, CT
Alfred Lamb North Franklin, CT	William Wasylishyn Lebanon, CT
A or A Leone Lebanon, CT	Robert G. Williams Lebanon, CT
Marion Jaffe Major Colchester, CT	Richard Wolf Lebanon, CT
Morgan Place Farm Lebanon, CT	John George Mohrlein Colchester, CT
O.J. Manning Farms, Inc. Lebanon, CT	Mrs. Helen Sanitsky Colchester, CT
R. Myron Manning Lebanon, CT	B. and/or W.C. Swider Colchester, CT
J.E. or G. Mccan Lebanon, CT	Bull Hill Farm East Lyme, CT
Elizabeth Messier Franklin, CT	Robert Muschinsky East Lyme, CT
George P. Randall Lebanon, CT	Bride Brook Dairy Farm East Lyme, CT
L.H. or L.B. Scanlon Lebanon, CT	Ayer Brothers North Franklin, CT

STATE OF CONNECTICUT

DAIRY FARMS
(continued)

New London County (Cont.)

Beckwith Bros. North Franklin, CT	Donald J. Rocde, Sr. Jewett, CT
Bluescope Farm Lebanon, CT	Abell, Abell & Abell Lebanon, CT
N.P. or N.P. Cushman Lebanon, CT	Abell Farm #2 Lebanon, CT
G.R. and/or J.B. Johnson Lebanon, CT	J. & S. Andrews Lebanon, CT
Beta Farm Lebanon, CT	E. and/or K. Bender Willimantic, CT
Green Ridge Farm Lebanon, CT	Victor T. Botticello Lebanon, CT
Barnes Dairy Norwich, CT	Joesph A. Brisson Willimantic, CT
Blossom Acres Farm Jewett City, CT	Louka Zelena Farm Lebanon, CT
Bottonwould Farm Norwich, CT	C or A Allyn Norwich, CT
Campbell's Crooked Brook Farm Voluntown, CT	Doris E. Lamb Ledyard, CT
Twin Maple Farm Jewett City, CT	H.W. Morgan Farm Ledyard, CT
George E. Norman Jewett City, CT	Karl M. Wiemann, Jr. Ledyard, CT
John J. Osga Norwich, CT	Edith Holzschlag Lisbon, CT
Pol'nsky Bros. Jewett, CT	Ashlawn Farms Old Lyme, CT

STATE OF CONNECTICUT

DAIRY FARMS
(continued)

New London County (Cont.)

Tiffany Farms Old Lyme, CT	Wayne Walter Ashaway, RI
C. and/or M. Nelson Uncasville, CT	Wychwood Valley Farm Stonington, CT
L. and/or A.K. Wrobel Uncasville, CT	Yawbux Valley Farm North Stonington, CT
Valley View Farm Ashaway, RI	Felix Chmielecki Norwich, CT
James A. Bill & Son Ashaway, RI	Phillip Davis Norwich, CT
Ledge Farm North Stonington, CT	Kenneth E. Dubicki Norwich, CT
Everbreeze Farm North Stonington, CT	Joseph Lebejko Norwich, CT
Peabody Place Farm North Stonington, CT	D.T. Lillibridge Norwich, CT
Beriah Lewis Farm Westerly, RI	Delrayson Farm Norwich, CT
G. & C.W. Miner North Stonington, CT	Mountain Ash Farm Baltic, CT
Maple Dawn Farm North Stonington, CT	Wisneske Farm Norwich, CT
Cool Breeze Farm North Stonington, CT	Edward H. Marsh Old Lyme, CT
Charles P. er Ashaway, RI	Everett G. Burns Norwich, CT
Laurel - Dell Farm North Stonington, CT	Charlyn Farm Norwich, CT

STATE OF CONNECTICUT

DAIRY FARMS
(continued)

New London County (Cont.)

Charles D. Anderson & Son
Portland, CT

Sunnyside Farm
Voluntown, CT

Miss Amelia M. Palmer
North Stonington, CT

Douglas Hill Farm
Waterford, CT

INGESTION PATHWAY SAMPLING FORM

Sample No. _____
Sample Location _____
Date Collected _____ Time Collected _____
Date Delivered _____ Time Delivered _____
Collected by _____ Team Leader _____
Type* of Sample or Swipes (if applicable) _____
Sample Volume _____ Or Weight _____
Preservative ** Added (if applicable) _____
Analysis Requested: _____

Remarks: _____

* Milk, water (surface, potable, potable treated) fish, vegetation, soil, smears or swipes, etc.

** Water samples may contain preservatives.

Assigned Identification Number _____ /
Radiation Health Coordinator initials/Sequence No.)

INGESTION PATHWAY PROTECTIVE ACTIONS
NOTIFICATION FORM

1. Date _____ 3. Attachment No. _____ 5. ☐ Coordinator
2. Time _____ 4. _____ ☐ Communicator
6. Contact - Concern _____ 7. Phone No. _____
- Person _____
8. Food Type(s) _____ 9. ☐ Supplier ☐ Processor ☐ Other _____
10. Sector _____ 11. Miles _____
Instructions: 12. Contamination _____
13. Recommendation _____
14. Protective Actions _____

15. Name/Phone # of User _____
16. LILCO Liability _____
17. Call Back Phone No. _____
18. Other _____

19. Contact Comments _____

20. Name _____ 21. Message No. _____

ATTACHMENT 2

EPC _____
Approved: _____
Effective Date _____

OPIP 3.5.3
Page 1 of 26

OPIP 3.5.3 INGESTION PATHWAY ASSESSMENT AND DOSE PROJECTION

1.0 PURPOSE

This procedure provides guidance for the initiation and continuation of assessment and dose projections in the ingestion pathway following a radiological release. The guidance so derived is intended to assist the appropriate emergency response agency in making its decision; it is an adjunct to sound judgment during a radiological emergency.

2.0 RESPONSIBILITY

The Dose Assessment Staff, under the guidance of the Environmental Assessment Coordinator, is responsible for implementing this procedure.

3.0 PRECAUTIONS

- 3.1 Dose projection calculations in the Ingestion Pathway resulting from the implementation of this procedure are predictions which should be verified by actual field measurements.
- 3.2 Airborne dose projections are dependent on both weather conditions and source term. A change in parameters requires a review of the dose projection with the probability of a need for recomputation.

4.0 PREREQUISITES

- 4.1 The release of radioactive material into the atmosphere has occurred or is imminent.

5.0 ACTIONS

- 5.1 This subsection describes the response to a radioactive gaseous release from either an elevated or ground level release point. Each of these two releases shall be considered as acting independently of the other and two sets of offsite (Ingestion Pathway) dose projections shall be calculated. The dose calculations are based upon finite cloud analyses and the required information will be provided by SNPS on the Radiological Emergency Data Form, Attachment 1.

5.1.1 The Dose Assessment Staff will:

- a. Obtain their general information on the Radiological Emergency Data Form, Parts I, II, and III, from the Environmental Assessment Coordinator (EAC).
- b. Determine the Atmospheric Dispersion Factor, Xu/Q , using the gaussian puff gamma tables, Attachment 3, or the plume centerline concentration tables, Attachment 4.
- c. Determine the highest dose by using the TI-59 programs or nomograms for situations where time limits are constrained.
- d. Determine points of concern as follows:
 1. Initially, and arbitrarily, select points at distances of 1, 3 and 5 miles along the centerline of the plume pathway.
 2. Select additional points using judgment and considering such factors as distance from SNPS, population density, land use, and proximity to projected pathway.

5.1.2 Calculate the Ingestion Pathway Dose Projection as follows:

- a. Obtain Attachment 2, Offsite Dose Projection Worksheet.
- b. Record the information from the Radiological Emergency Data Form, Attachment 1, in the appropriate places in Attachment 2 (wind speed, release rate, duration of release, and if ground and/or elevated release).
- c. Determine the atmospheric dispersion factor for type of exposure (whole body gamma and/or thyroid) as follows:
 1. Select the gaussian puff gamma Xu/Q tables, Attachment 3, for the whole body exposure or plume centerline concentration Xu/Q tables, Attachment 4, for thyroid exposure.

2. From type of release (ground or elevated) and tabulated plume height (obtain plume height from EAC for each point of concern), choose the proper table for whole body and/or thyroid exposure.
 3. Find the proper X_u/Q value using the stability class from Radiological Emergency Data Form and distance to point of concern. Record the X_u/Q value in column B, Attachment 3.
- d. Calculate X/Q (Column D) using the equation:
- $$X/Q = [X_u/Q]/[u]$$
- in which
- X/Q = Non-Normalized Atmospheric Dispersion Factor (sec/m^3)
- X_u/Q = Atmospheric Dispersion Factor ($1/\text{m}^2$)
Normalized for Wind Speed
- u = Wind Speed (m/sec)
- e. Calculate the dose (Column I) by multiplying the Dose Rate (Column G) by the Release duration (Column H)
 - f. Combine the ground and elevated releases, if the two overlap, and enter this sum in Column J as the Projected Dose.

5.1.3 Utilize results of data for input to OPIP 3.6.6, Ingestion Pathway Protective Actions.

5.2 This subsection describes the method to calculate the projected dose for particulate release. Prior to beginning this calculation, the Supplementary Worksheet, Attachment 6, must be completed by the Dose Assessment Staff using information on Attachment 1.

5.2.1 The Dose Assessment Staff will:

- a. Obtain Attachment 5, Ground Deposition Calculation Worksheet for Particulate Radionuclide Releases.

- b. From Part III of Attachment 1, determine if the release is ground and/or elevated.
- c. Perform ground deposition calculations for each release if both types exist.
- d. Identify at IA., on the Worksheet, the release type by circling GROUND or ELEVATED.
- e. Obtain the following from page 2 of Attachment 6:
 - 1. The appropriate radionuclide release rates
 - 2. The estimated duration of particulate releases
- f. Determine the point(s) of concern for the particulate offsite dose projection from Attachment 2.
- g. Indicate on the Worksheet, at item ID., the point of concern (location and distance).
- h. Obtain the appropriate X/Q value (ground or elevated) from Column D on Attachment 2, for the point of concern, and enter it at item IE. on the Worksheet.
- i. Identify the above entry as being for a GROUND or an ELEVATED release.
- j. Calculate on the Worksheet the ground deposition using the following equation:

$$\text{Dep} = \frac{[X/Q] \times [F] \times [0.05] \times [Q] \times [T]}{[3600] \times [10^6]}$$

where:

Dep = ground deposition ($\mu\text{Ci}/\text{m}^2$)

X/Q = non-normalized atmospheric dispersion factor (sec/m^3)

Q = radionuclide release rate reported by SNPS (ci/sec)

- T = estimated release duration as reported by SNPS (hrs)
- F = fraction of isotope subject to deposition (unitless)
- 3600 = conversion (sec/hr)
- 10⁶ = conversion (uCi/Ci)
- 0.05 = assumed deposition velocity (m/sec)

5.2.2 Use the results of this calculation to determine the protective actions for deposition due to particulates in accordance with OPIP 3.6.6, Ingestion Pathway Protective Action Recommendations.

6.0 REFERENCES

- 6.1 Nuclear Regulatory Commission, "Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50, Appendix I," Regulatory Guide 1.109, March 1976.
- 6.2 U.S. Environmental Protection Agency (EPA), Manual of Protective Action Guides and Protective Actions for Nuclear Incidents, EPA-520/1-75-001, September, 1975.
- 6.3 Nuclear Regulatory Commission, "Methods for Estimating Atmospheric Transport and Dispersion of Gaseous Effluents in Routine Releases from Light-Water-Cooled Reactors." Regulatory Guide 1.111, March 1976.
- 6.4 Final Environmental Statement Concerning Proposed Rule Making Action: Numerical Guides for Design Objectives and Limiting Conditions for Operating to Meet the Criterion "As Low As Practicable" for Radioactive Material in Light-Water-Cooled Nuclear Power Reactor Effluents, Vol. 2 Analytical Models and Calculations, U.S. Atomic Energy Commission, July 1973.
- 6.5 OPIP 2.1.1 Organization Implementation
- 6.6 OPIP 3.6.6 Ingestion Pathway Protection Actions

7.0 ATTACHMENTS

1. Radiological Emergency Data Form
2. Offsite Dose Projection Work Sheet
3. Shoreham Station - Gaussian Puff
4. Shoreham Station - Plume Centerline Concentration
5. Ground Deposition Calculation Work Sheet for Particulate Radionuclide Releases
6. Follow-Up Information Form

RADIOLOGICAL EMERGENCY DATA FORM

PART I - GENERAL INFORMATION

1. Date and Time of Message
Transmittal:
Date _____ Time _____
(24-hour clock)
2. Facility providing information.
A Indian Point Unit No. 2
B Indian Point Unit No. 3
C Ginna Station
D Nine Mile Point Unit No. 1
E FitzPatrick Plant
F Shoreham Station
G Other _____
3. Reported by:
A Name _____
B Title _____
4. This ... A is ... an exercise.
B is NOT
5. Emergency Classification
A Unusual Event
B Alert
C Site Area Emergency
D General Emergency
6. This classification occurred at
Date _____ Time _____
(24-hour clock)
7. Brief Event Description/
Initiating Condition: _____

8. There has:
A NOT been a release of radioactivity.
B been a release of radioactivity to the ATMOSPHERE.
C been a release of radioactivity to a BODY OF WATER.
D been a GROUND SPILL release of radioactivity.
9. The release is:
A continuing
B terminated
C NOT applicable.
10. Protective Actions:
A There is NO need for Protective Actions outside the site boundary.
B Protective Actions are under consideration.
C Recommended Protective Actions:
Shelter within _____ miles/or _____ sectors/or ERPA's.
Evacuate within _____ miles/or _____ sectors/or _____ s.
11. Weather:
A Wind speed _____ miles per hour or _____ meters per second.
B Direction (from) _____ degrees.
C Stability class (A-G) _____
D General Weather Condition (if available) _____

Message received by _____

RADIOLOGICAL EMERGENCY DATA FORM
(continued)

PART II - RADIOLOGICAL ASSESSMENT DATA

12. Prognosis for Worsening or Termination of the Emergency: _____

13. Inplant Emergency Response Actions Underway: _____

14. Utility Offsite Emergency Response Action Underway: _____

15. Release Information

A. Atmospheric Release

	<u>Actual</u>	<u>Projected</u>
Date and Time Release Started	_____	_____
Duration of Release	_____ hrs	_____ hrs
Noble Gas Release Rate	_____ Ci/sec	_____ Ci/sec
Radioiodine Release Rate	_____ Ci/sec	_____ Ci/sec
Elevated or Ground Release	_____	_____

B. Waterborne Release

	<u>Actual</u>	<u>Projected</u>
Date and Time Release Started	_____	_____
Duration of Release	_____ hrs	_____ hrs
Volume of Release	_____ gal	_____ gal
Radioactivity Concentration (gross)	_____ uCi/ml	_____ uCi/ml
Total Radioactivity Released	_____ Ci	_____ Ci
Radionuclides in Release	_____ uCi/ml	_____ uCi/ml
	_____ uCi/ml	_____ uCi/ml
	_____ uCi/ml	_____ uCi/ml

Basis for release data, e.g., effluent monitors, grab sample, composite sample, and sample location: _____

RADIOLOGICAL EMERGENCY DATA FORM
 (continued)

PART II - RADIOLOGICAL ASSESSMENT DATA
 (continued)

16. Dose and Measurements and Projections

A. Site Boundary

	<u>Actual</u>	<u>Projected</u>
Whole Body Dose Rate	_____ mR	_____ mR/hr
Whole Body Commitment (1 hr. exposure)		
Thyroid Dose Commitment (Total Commitment)	_____ rem	_____ m/Rem
Thyroid Dose		_____ Rem

B. Projected Offsite

	<u>2 Miles</u>	<u>5 Miles</u>	<u>10 Miles</u>
Whole Body Dose Rate (mR/hr)	_____	_____	_____
Whole Body Dose (Rem)	_____	_____	_____
Thyroid Dose Commitment (1 hr. Exposure - mRem)	_____	_____	_____
Thyroid Dose (Total Commitment - Rem)	_____	_____	_____

17 Protective Action Recommendations and the basis for that recommendation: _____

RADIOLOGICAL EMERGENCY DATA FORM
(continued)

PART III - PLANT PARAMETERS

(to be developed)

Name : _____ Date : _____ Time : _____

OFFSITE DOSE PROJECTION WORKSHEET

A (BASEMAP) LOCATION & DISTANCE (MILES)	RELEASE HEIGHT	B Attach.* XW/Q (1/m ²)	C (STATION) WIND SPEED (m/sec)	D (B+C) X/Q (sec/m ²)	RELEASE TYPE	E (STATION) RELEASE RATE (Ci/sec)	F (GIVEN) CONVERSION FACTOR (m ² rem/Ci-hr)	G (DREF) DOSE RATE (rem/hr)	H (STATION) RELEASE DURATION (hr)	I (H x G) DOSE (rem)	ADD IF GROUND & ELEVATION RELEASES OVERLAP	J PROJECTED DOSE (rem)				
	GROUND				I		6.4×10^5			1		THYROID	(1 + 3)			
					NG		3.1×10^2			2						
	ELEVATION				I		6.4×10^5			3		WH. BODY	(2 + 4)			
					NG		3.1×10^2			4						
	GROUND				I		6.4×10^5			1		THYROID	(1 + 3)			
					NG		3.1×10^2			2						
	ELEVATION				I		6.4×10^5			3		WH. BODY	(2 + 4)			
					NG		3.1×10^2			4						
	GROUND				I		6.4×10^5			1		THYROID	(1 + 3)			
					NG		3.1×10^2			2						
	ELEVATION				I		6.4×10^5			3		WH. BODY	(2 + 4)			
					NG		3.1×10^2			4						

*Use Attachment 3 for whole body;
Use Attachment 4 for thyroid

SHOREHAM STATION - GAUSSIAN PUFF GAMMA (X=U/W) (1/7/82)

GROUND-LEVEL RELEASE - DIVIDE RESULTS BY ONE MILLION (10^{-6})

MILES	A	B	C	D	E	F	G
.10	39.818	60.088	77.110	113.774	144.884	203.687	302.182
.25	26.073	48.390	63.374	82.861	121.875	171.481	242.415
.50	5.648	18.542	33.169	57.965	73.815	110.505	155.705
.75	1.285	8.629	20.653	42.003	57.529	81.865	118.798
1.0	.974	4.483	14.175	32.469	46.510	65.868	97.599
1.5	.697	1.597	8.063	21.733	32.608	50.222	72.387
2.0	.539	.788	5.250	15.523	25.008	38.911	58.816
2.5	.445	.608	3.716	11.828	20.109	33.347	50.281
3.0	.384	.512	2.785	9.448	16.894	29.220	44.929
3.5	.339	.444	2.174	7.787	14.217	25.826	40.582
4.0	.304	.394	1.751	6.577	12.347	23.241	36.990
4.5	.276	.357	1.433	5.655	10.886	20.889	33.869
5.0	.253	.327	1.209	4.941	9.718	18.802	31.273
7.5	.174	.235	.630	3.005	6.301	13.346	23.058
10.0	.136	.184	.400	2.095	4.569	10.342	18.410
15.0	.101	.128	.217	1.188	2.854	7.032	13.192
20.0	.079	.102	.151	.793	2.084	5.264	10.399
25.0	.065	.084	.116	.591	1.644	4.206	8.827
30.0	.057	.073	.101	.489	1.358	3.520	7.409
35.0	.050	.064	.089	.365	1.168	3.022	6.503
40.0	.045	.058	.079	.326	1.018	2.643	5.803
45.0	.041	.052	.071	.283	.904	2.355	5.257
50.0	.038	.047	.064	.249	.810	2.118	4.803

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Attachment 3
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SHOREHAM STATION - GAUSSIAN PUFF GAMMA (X+U/B) (1/M2)

ELEVATED RELEASE (H = 35 M) - DIVIDE RESULTS BY ONE MILLION

MILES	A	B	C	D	E	F	G
.19	39.247	58.930	72.841	80.560	77.485	73.502	72.221
.25	25.940	46.090	61.984	78.208	80.137	75.124	72.785
.30	5.664	18.585	33.348	58.622	72.218	80.618	77.128
.75	1.280	8.851	20.805	43.178	58.753	75.802	80.544
1.0	.877	4.505	14.285	33.443	48.144	68.050	79.403
1.5	.699	1.601	8.119	22.309	33.933	53.806	71.608
2.0	.540	.789	5.280	15.910	25.994	43.099	63.938
2.5	.445	.609	3.734	12.098	20.079	36.032	57.228
3.0	.385	.512	2.797	9.639	17.331	31.518	51.451
3.5	.339	.445	2.182	7.931	14.744	27.932	46.651
4.0	.304	.395	1.757	6.688	12.788	23.018	42.635
4.5	.276	.357	1.443	5.743	11.254	22.482	39.179
5.0	.253	.327	1.212	5.014	10.032	20.422	36.256
7.5	.174	.235	.632	3.040	8.471	14.320	26.714
10.0	.136	.184	.400	2.085	4.678	11.060	21.300
15.0	.101	.130	.217	1.178	2.812	7.472	15.242
20.0	.079	.102	.151	.797	2.121	5.564	11.951
25.0	.065	.085	.116	.594	1.671	4.430	9.880
30.0	.057	.073	.101	.471	1.385	3.699	8.474
35.0	.050	.064	.089	.387	1.184	3.167	7.427
40.0	.045	.058	.078	.327	1.030	2.764	6.615
45.0	.041	.052	.071	.284	.916	2.458	5.981
50.0	.038	.047	.064	.250	.820	2.208	5.454

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Attachment 3
Page 2 of 5

SHOREHAM STATION - GAUSSIAN PUFF GAMMA (X*U/Q) (1/M2)

ELEVATED RELEASE (H = 70 M) - DIVIDE RESULTS BY ONE MILLION

MILES	A	B	C	D	E	F	G
.10	28.871	33.441	32.128	28.762	27.885	27.372	27.171
.25	21.688	31.315	33.466	30.080	28.482	27.582	27.265
.50	5.481	16.452	26.085	33.428	32.223	29.097	27.808
.75	1.282	8.211	18.126	30.384	33.434	31.300	28.744
1.0	.973	4.391	13.055	28.114	31.873	32.973	29.989
1.5	.697	1.589	7.732	19.209	26.371	32.964	32.354
2.0	.539	.787	5.121	14.374	21.718	30.356	33.385
2.5	.445	.607	3.657	11.223	16.181	27.419	33.347
3.0	.384	.512	2.755	9.090	15.498	25.068	32.599
3.5	.339	.444	2.158	7.563	13.431	22.950	31.476
4.0	.304	.395	1.741	6.429	11.807	21.074	30.192
4.5	.276	.357	1.434	5.554	10.500	19.332	28.842
5.0	.253	.327	1.206	4.871	9.436	17.845	27.526
7.5	.174	.235	.630	2.990	6.229	13.083	22.183
10.0	.136	.184	.400	2.063	4.554	10.332	18.487
15.0	.101	.130	.217	1.170	2.867	7.146	13.836
20.0	.079	.102	.151	.794	2.098	5.387	11.098
25.0	.065	.085	.116	.593	1.657	4.320	9.302
30.0	.057	.073	.101	.470	1.380	3.623	8.053
35.0	.050	.064	.089	.386	1.178	3.113	7.105
40.0	.045	.058	.079	.326	1.025	2.723	6.362
45.0	.041	.052	.071	.284	.912	2.426	5.775
50.0	.038	.047	.064	.250	.817	2.181	5.284

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Attachment 3
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SHOREHAM STATION - GAUSSIAN PUFF GAMMA (X+U/8) (1/M2)

ELEVATED RELEASE (H = 105 M) - DIVIDE RESULTS BY ONE MILLION

MILES	A	B	C	D	E	F	G
.19	17.621	15.998	14.109	12.907	12.818	12.432	12.337
.25	16.204	17.623	15.548	13.309	12.818	12.509	12.383
.50	5.177	13.430	17.600	18.043	14.180	13.008	12.601
.75	1.267	7.521	14.463	17.823	18.022	13.734	12.901
1.0	.984	4.198	11.250	17.811	17.430	14.691	13.280
1.5	.693	1.565	7.122	15.042	17.661	16.737	14.235
2.0	.537	.781	4.857	12.160	16.216	17.827	15.262
2.5	.443	.604	3.524	9.909	14.493	17.823	16.249
3.0	.383	.510	2.681	8.240	12.896	17.367	17.048
3.5	.338	.443	2.113	6.980	11.515	16.699	17.574
4.0	.303	.393	1.712	6.010	10.347	15.938	17.849
4.5	.276	.356	1.414	5.243	9.356	15.105	17.920
5.0	.253	.326	1.192	4.632	8.518	14.305	17.836
7.5	.174	.234	.627	2.902	3.836	11.271	16.406
10.0	.136	.184	.399	2.022	4.346	9.225	14.660
15.0	.101	.129	.216	1.157	2.785	8.626	11.795
20.0	.079	.102	.151	.789	2.056	5.054	9.814
25.0	.065	.085	.116	.590	1.631	4.132	8.411
30.0	.057	.073	.101	.468	1.362	3.492	7.390
35.0	.050	.064	.088	.395	1.165	3.017	6.591
40.0	.045	.058	.079	.326	1.016	2.650	5.951
45.0	.041	.052	.071	.283	.905	2.369	5.438
50.0	.038	.047	.064	.249	.812	2.135	5.003

SHOREHAM STATION - GAUSSIAN PUFF GAMMA (X*U/D) (1/702)

ELEVATED RELEASE (H = 140 M) - DIVIDE RESULTS BY ONE MILLION

MILES	A	B	C	D	E	F	G
.19	8.881	7.641	8.784	8.286	8.158	8.074	8.041
.25	10.931	8.996	7.408	6.460	6.247	6.109	6.057
.50	4.785	10.263	10.556	7.687	6.805	6.331	6.150
.75	1.245	6.662	10.612	9.371	7.655	6.634	6.283
1.0	.952	3.942	9.158	10.547	8.741	7.024	6.448
1.5	.886	1.530	6.357	10.770	10.499	8.109	6.835
2.0	.533	.773	4.512	9.651	10.931	9.381	7.274
2.5	.441	.600	3.345	8.341	10.621	10.273	7.786
3.0	.382	.506	2.578	7.195	10.007	10.714	8.358
3.5	.337	.440	2.050	6.247	9.307	10.908	8.925
4.0	.302	.392	1.671	5.475	8.619	10.917	9.442
4.5	.275	.355	1.387	4.840	7.978	10.784	9.890
5.0	.252	.325	1.173	4.320	7.395	10.562	10.247
7.5	.173	.234	.622	2.781	5.333	9.170	10.931
10.0	.136	.184	.397	1.964	4.072	7.888	10.670
15.0	.101	.128	.218	1.139	2.674	5.870	9.460
20.0	.079	.102	.151	.781	1.996	4.714	8.280
25.0	.065	.084	.116	.585	1.594	3.885	7.318
30.0	.057	.073	.101	.466	1.336	3.317	6.563
35.0	.050	.064	.089	.384	1.147	2.836	5.942
40.0	.045	.058	.079	.324	1.002	2.550	5.427
45.0	.041	.052	.071	.283	.894	2.289	5.003
50.0	.038	.047	.064	.248	.803	2.070	4.637

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SHOREHAM STATION - PLUME-CENTERLINE CONCENTRATION (X+U/8) (1/M2)

GROUND-LEVEL RELEASE - DIVIDE RESULTS BY ONE MILLION

MILES	A	B	C	D	E	F	G
.18	73.824	142.587	218.895	451.874	733.325	1528.773	3529.498
.25	40.552	93.898	155.855	307.503	517.204	1038.091	2177.300
.50	6.338	25.814	56.855	134.300	203.135	426.981	848.132
.75	2.669	10.212	28.689	80.639	137.640	244.169	499.947
1.0	2.009	4.932	18.422	55.140	94.347	165.540	336.834
1.5	1.488	2.004	9.447	31.746	55.471	106.474	195.837
2.0	1.147	1.561	5.844	20.616	38.311	74.644	137.574
2.5	.945	1.295	4.019	14.791	28.672	57.294	106.706
3.0	.816	1.089	2.859	11.342	22.585	47.484	89.414
3.5	.720	.944	2.283	9.080	18.490	40.239	76.541
4.0	.644	.838	1.825	7.503	15.572	34.709	66.653
4.5	.585	.758	1.495	6.342	13.398	30.134	58.595
5.0	.536	.693	1.258	5.469	11.722	26.607	52.261
7.5	.368	.497	.713	3.206	7.151	17.112	34.340
10.0	.288	.390	.524	2.184	5.020	12.609	25.580
15.0	.214	.274	.360	1.204	3.038	8.089	16.872
20.0	.166	.215	.281	.811	2.185	5.861	12.691
25.0	.138	.179	.245	.603	1.709	4.592	10.209
30.0	.120	.155	.213	.478	1.415	3.793	8.580
35.0	.106	.136	.188	.393	1.203	3.225	7.408
40.0	.096	.122	.168	.333	1.044	2.800	6.526
45.0	.087	.110	.149	.291	.927	2.462	5.853
50.0	.080	.100	.135	.258	.829	2.222	5.302

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SHOREHAM STATION - PLUME-CENTERLINE CONCENTRATION (X=U/R) (1/M2)

ELEVATED RELEASE (H = 35 M) - DIVIDE RESULTS BY ONE MILLION

MILES	A	B	C	D	E	F	G
.19	68.928	108.063	113.557	28.242	1.480	.000	.000
.25	39.738	81.890	103.985	58.158	12.023	.006	.000
.50	8.358	25.347	52.257	85.824	75.274	8.315	.021
.75	2.678	10.179	28.570	83.928	78.718	36.060	1.999
1.0	2.094	4.932	17.988	47.501	68.012	53.482	9.535
1.5	1.490	2.007	9.336	29.294	46.335	57.480	25.584
2.0	1.148	1.563	5.803	19.517	33.868	49.653	31.496
2.5	.945	1.296	4.000	14.198	26.067	42.113	34.222
3.0	.817	1.089	2.948	10.984	20.847	36.862	33.929
3.5	.720	.945	2.277	8.843	17.257	32.380	35.481
4.0	.644	.838	1.821	7.337	14.657	28.644	34.054
4.5	.585	.758	1.492	6.220	12.700	25.335	31.933
5.0	.538	.693	1.256	5.375	11.174	22.693	29.973
7.5	.388	.497	.713	3.169	6.917	15.173	23.013
10.0	.288	.380	.524	2.146	4.888	11.407	18.378
15.0	.214	.274	.380	1.187	2.976	7.488	12.814
20.0	.166	.215	.291	.808	2.149	5.455	10.097
25.0	.138	.179	.245	.601	1.695	4.338	8.305
30.0	.120	.155	.213	.476	1.397	3.601	7.063
35.0	.106	.136	.168	.392	1.183	3.073	6.159
40.0	.096	.122	.158	.332	1.033	2.878	5.470
45.0	.087	.110	.149	.291	.917	2.300	4.841
50.0	.080	.100	.135	.257	.821	2.137	4.503

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SHOREHAM STATION - PLUME-CENTERLINE CONCENTRATION ($X=U/B$) (1/M2)

ELEVATED RELEASE (H = 70 M) - DIVIDE RESULTS BY ONE MILLION

MILES	A	B	C	D	E	F	G
.19	36.107	17.438	3.011	.000	.000	0.000	0.000
.25	29.950	29.170	12.598	.048	.000	.000	0.000
.50	6.220	20.704	27.534	7.216	.625	.000	.000
.75	2.678	9.557	20.869	15.801	5.276	.017	.000
1.0	2.094	4.811	14.825	18.538	10.678	.306	.000
1.5	1.490	2.005	8.453	17.158	15.615	2.668	.009
2.0	1.148	1.563	5.464	13.491	15.683	5.811	.065
2.5	.945	1.296	3.838	10.754	14.247	7.869	.218
3.0	.817	1.089	2.859	8.824	12.511	8.982	.548
3.5	.720	.945	2.223	7.383	11.092	9.449	.957
4.0	.644	.838	1.787	6.292	9.929	9.519	1.366
4.5	.585	.758	1.470	5.442	8.993	9.286	1.679
5.0	.536	.693	1.240	4.774	8.187	8.979	1.956
7.5	.368	.497	.711	2.928	5.563	7.417	2.955
10.0	.288	.390	.524	2.025	4.105	6.240	3.237
15.0	.214	.274	.360	1.155	2.611	4.668	3.058
20.0	.166	.215	.291	.786	1.930	3.687	2.878
25.0	.138	.179	.245	.588	1.535	3.046	2.639
30.0	.120	.155	.213	.468	1.283	2.600	2.382
35.0	.106	.136	.188	.386	1.100	2.272	2.181
40.0	.096	.122	.168	.328	.961	2.021	2.019
45.0	.087	.110	.149	.288	.857	1.829	1.891
50.0	.080	.100	.135	.255	.770	1.668	1.778

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SHOREHAM STATION - PLUME-CENTERLINE CONCENTRATION (X=U/B) (1/M2)

ELEVATED RELEASE (H = 105 M) - DIVIDE RESULTS BY ONE MILLION

MILES	A	B	C	D	E	F	G
.19	12.281	.834	.007	.000	.000	0.000	0.000
.25	18.698	5.221	.340	.000	.000	0.000	0.000
.50	5.938	14.777	8.464	.118	.000	.000	0.000
.75	2.678	8.602	12.364	1.538	.057	.000	.000
1.0	2.094	4.617	10.730	3.864	.488	.000	.000
1.5	1.490	2.001	7.162	7.036	2.548	.016	.000
2.0	1.148	1.563	4.943	7.291	4.347	.163	.000
2.5	.945	1.296	3.583	6.768	5.205	.481	.000
3.0	.817	1.089	2.717	6.125	5.342	.854	.001
3.5	.720	.945	2.137	5.464	5.310	1.213	.002
4.0	.644	.839	1.731	4.871	5.188	1.518	.006
4.5	.585	.758	1.432	4.355	5.059	1.743	.012
5.0	.536	.693	1.215	3.919	4.876	1.915	.021
7.5	.368	.497	.707	2.566	3.869	2.250	.097
10.0	.288	.390	.523	1.837	3.070	2.283	.178
15.0	.214	.274	.360	1.087	2.100	2.124	.277
20.0	.166	.215	.291	.752	1.814	1.896	.353
25.0	.138	.179	.245	.567	1.313	1.690	.390
30.0	.120	.155	.213	.454	1.115	1.511	.389
35.0	.106	.136	.188	.377	.967	1.374	.387
40.0	.096	.122	.169	.321	.852	1.264	.383
45.0	.087	.110	.148	.282	.765	1.179	.381
50.0	.080	.100	.135	.251	.691	1.104	.378

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SHOREHAM STATION - PLUME-CENTERLINE CONCENTRATION (X_{4U/S}) (1/82)

ELEVATED RELEASE (H = 140 M) - DIVIDE RESULTS BY ONE MILLION

MILES	A	B	C	D	E	F	G
.19	2.719	.012	.000	.000	0.000	0.000	0.000
.25	8.688	.470	.002	.000	.000	0.000	0.000
.50	3.698	3.216	2.122	.000	.000	.000	0.000
.75	2.678	7.424	5.942	.059	.000	.000	0.000
1.0	2.094	4.358	6.824	.430	.006	.000	.000
1.5	1.490	1.995	5.679	2.020	.201	.000	.000
2.0	1.148	1.553	4.295	3.080	.721	.001	.000
2.5	.945	1.296	3.254	3.539	1.271	.010	.000
3.0	.817	1.089	2.530	3.674	1.623	.032	.000
3.5	.720	.945	2.021	3.586	1.893	.069	.000
4.0	.644	.838	1.656	3.404	2.091	.116	.000
4.5	.585	.758	1.382	3.188	2.261	.168	.000
5.0	.536	.693	1.181	2.972	2.360	.220	.000
7.5	.368	.497	.702	2.134	2.327	.424	.001
10.0	.288	.390	.522	1.604	2.043	.539	.003
15.0	.214	.274	.360	1.000	1.548	.705	.010
20.0	.166	.215	.291	.706	1.236	.747	.019
25.0	.138	.179	.245	.540	1.056	.741	.027
30.0	.120	.155	.213	.435	.915	.707	.031
35.0	.106	.136	.188	.363	.806	.679	.034
40.0	.096	.122	.168	.312	.720	.635	.037
45.0	.087	.110	.149	.275	.652	.638	.041
50.0	.080	.100	.135	.246	.594	.613	.043

GROUND DEPOSITION CALCULATION WORKSHEET FOR
PARTICULATE RADIONUCLIDE RELEASES

I Record the following:

A. Type of release is GROUND or ELEVATED (Circle one)

CALCULATE A SEPERATE WORKSHEET IF THERE ARE BOTH GROUND AND
ELEVATED PARTICULATE RELEASES.

B. Radionuclide releases (Q value):

I-131 or I-131 equivalent* _____ ci/sec
Cs - 137 _____ ci/sec
Sr - 89 _____ ci/sec
Sr - 90 _____ ci/sec

C. Estimated duration of release (T) _____ (hrs)

D. Indicate point of concern (location and distance) _____

E. X/Q from Column D of Attachment 2 _____ (sec/m³)

This X/Q value is for a GROUND or an ELEVATED release
(Circle one)

II Deposition = [F] x [X/Q] x [.05] x [Q] x [T] x 3600 x [10⁶]

Calculate Deposition:

Isotope	A** m-uCi Hr Ci	x	X/Q sec m ³	x	Q Ci sec	x	T (Hrs)	=	Deposition*** uCi m ²
I-131	9.0 x 10 ⁶	x	_____	x	_____	x	_____	=	_____
Cs-137	1.8 x 10 ⁸	x	_____	x	_____	x	_____	=	_____
Sr-89	1.8 x 10 ⁸	x	_____	x	_____	x	_____	=	_____
Sr-90	1.8 x 10 ⁸	x	_____	x	_____	x	_____	=	_____

* If only total Iodine is available from SNPS, use of this value
will result in an overly conservative estimate of Deposition of
I-131.

** The product of F, 0.05, 3600, and 10⁶ is evaluated and set
equal to A.

*** These values should be compared to the Protective Action Levels
in OPIP 3.6.6, Attachment 1, Derived Response Levels for
Preventive PAG.

SUPPLEMENTARY WORKSHEET

Date _____ Time _____
Time of Reactor Shutdown _____
Time of Release to Containment _____
Time of Release from Facility _____

AIRBORNE RELEASES: Actual _____ Potential _____
Estimated Direction _____
Estimated Time of Start of Release _____

Iodines: Specific Nuclides If Known

	Elevated Release Rate (Ci/sec)	Ground Release Rate (Ci/sec)
I-131	_____	_____
I-132	_____	_____
I-133	_____	_____
I-134	_____	_____
I-135	_____	_____

SUPPLEMENTARY WORKSHEET
 (continued)

Noble Gas Releases: Specific Nuclides If Known

	Elevated Release Rate (Ci/sec)	Ground Release Rate (Ci/sec)
Kr-85	_____	_____
Kr-85m	_____	_____
Kr-87	_____	_____
Kr-88	_____	_____
Xe-133	_____	_____
Xe-133m	_____	_____
Xe-135	_____	_____
Xe-135m	_____	_____

PARTICULATE RELEASES: Actual _____ Potential _____
 Estimated Direction _____
 Estimated Time of Start of Release _____

Particulates: Specific Nuclides If Known

	Elevated Release Rate (Ci/sec)	Ground Release Rate (Ci/sec)
I-131	_____	_____
Cs-137	_____	_____
Sr-89	_____	_____
Sr-90	_____	_____

SUPPLEMENTARY WORKSHEET
(continued)

EXPOSURE/DOSE RATE MEASUREMENTS AND ESTIMATES:

Indicate a MEASURED VALUE by a (*)

Description	Location		Whole Body Exposure Rate (Rem/hr)	Thyroid Dose Rate (Rem/hr)	Dose (Rem)		
	Sector & Zone	Distance			Whole Body	Adult Thyroid	Child Thyroid
Site							
Boundary							
		2 miles					
Plume							
Center		5 miles					
Line							
Peak							
		10 miles					
Others							

ATTACHMENT 3

State of New York

Dairy Farms

Putnam County

Henry Burdick & Son*
Bullet Hole Road
Patterson, NY 12563
914-878-6853

Albert Mendel & Son*
Rt. 22
Patterson, NY 12563
914-878-4751

Westchester County

Belle Bates
Brewster Road
N. Salem, NY 10560
no phone # listed

Hilltop Hanover Farm*
Hanover Hill Road
Yorktown, NY 10598
914-962-2665

Clayton B. Osborne, Jr.*
Granite Springs, NY 10527
914-248-5676

*Located outside 50-mile emergency planning zone.

Suffolk County

Sayre Baldwin
Hayground Station
Bridgehampton, NY 11932
516-537-9859

NYS Agricultural College -
Farmingdale
Farmingdale, NY 11735
516-420-2000

Peter Salm
N. Sea Road
Southampton, NY 11968
516-283-0302

Pius Schobel
111 Columbia Street
Huntington Station, NY 11746
516-427-2126

Thees Dairy
84 Chichester Ave.
Center Moriches, NY 11934
516-878-0755

Source: New York State Department of Agriculture and Markets,
Division of Dairy Industry Services.

ATTACHMENT 4

State of New York
Milk Dealers Operating Plants

Nassau County

Bernard & Alan Gouz
Dutch Broadway
Elmont, NY 11007
516-825-3377
Pasteurizing Plant

Hunt Wesson Foods, Inc.
Division of Frozen &
Refrigerated Foods
639 Merrick Road
Lynbrook, NY 11563
516-887-9191
Manufacturing Plant

Vesuvio Cheese, Inc.
7 Alexander Place
Glen Head, NY 11542
516-671-9696
Manufacturing Plant

Nassau Ice Cream Co. Inc.
1350 Northern Blvd.
Roslyn, NY 11576
516-621-7117
Manufacturing Plant

SUNY Agricultural &
Technical Institute
516-421-2000
Pasteurizing Plant

Source: Bulletin 424, List of Milk Plants and Dealers in New
York State, June 1983, Division of Dairy Industry
Services.

State of New York
Milk Dealers Operating Plants

Suffolk County

Dellwood Foods, Inc.
Copiague Plant
70 Saw Mill River Road
Yonkers, NY 10701
516-842-3204
Pasteurizing Plant

Oak Tree Farm Dairy Inc.
544 Elwood Road
E. Northport, NY 11731
516-368-8050
Pasteurizing Plant

Instantwhip - New York Inc.
Farmingdale Plant
32-26 62 St.
Woodside, NY 11377
516-278-1652
Manufacturing Plant

Suffolk Processing Co. Inc.
50 E. Hoffman Ave.
Lindenhurst, Ny 11757
516-226-1200
Pasteurizing Plant

Westchester County

Dellwood Foods Inc.
170 Saw Mill River Road
Yonkers, NY 10701
914-965-4200
Pasteurizing Plant

J.B. & Sons Ltd.
564 Mile Square Road
Yonkers, NY 10701
914-963-5192
Manufacturing Plant

Neilsen Ice Cream Co. Inc.
41 Pearl St.
Port Chester, NY 10573
914-937-4400
Manufacturing Plant

State of New York
Milk Dealers Operating Plants

Bronx County

Gold Medal Farms, Inc.
1157 E 156 St.
Bronx, NY 10459
212-542-1300
Pasteurizing Plant

Hermany Farms, Inc.
2338-42 Hermany Ave.
Bronx, NY 10473
212-769-0699
Pasteurizing Plant

Marbledale Processing Corp.
2880 Exterior St.
Bronx, NY 10463
212-769-0699
Pasteurizing Plant

Wakefield Processing Corp.
1591 E. 233 St.
Bronx, NY 10466
212-994-6655
Pasteurizing Plant

Kings County

Distefano & Taranto
148 Wilson Ave.
Brooklyn, NY 11237
212-443-0520
Manufacturing Plant

Infant Formula Laboratory
Service Inc.
Brooklyn, NY 11207
212-247-3110
Manufacturing Plant

Pecoraro Dairy Products Inc.
287 Leonard St.
Brooklyn, NY 11211
212-387-8601
Manufacturing Plant

Rehse's Ice Cream Co. Inc.
34 E. 29 St.
Brooklyn, NY 11226
212-482-3596
Manufacturing Plant

Sunnydale Farms Inc.
400 Stanley Ave.
Brooklyn, NY 11223
212-257-1100
Pasteurizing Plant

State of New York
Milk Dealers Operating Plants

Queens County

Dairylea Corp. Inc.
Woodside Metro Br.
One Blue Hill Plaza
Pearl River, NY 10965
212-899-9300
Pasteurizing Plant

Honeywell Farms Inc.
155-25 Styler Road
Jamaica, NY 11404
212-526-3442
Pasteurizing Plant

Rosario Leone
84-00 Cooper Ave.
Glendale, NY 11227
212-894-3356
Manufacturing Plant

Liberty Farms Inc.
103-45 98th St.
Ozone Park, NY 11417
212-843-7077
Pasteurizing Plant

Queensboro Farms Products Inc.
35-13 41 St.
Long Island City, NY 11101
212-786-8900
Pasteurizing Plant

Schwartz, Herbert, Sidney &
Rosenson, Hyman
80-22 Caldwell Ave.
Elmhurst, NY 11373
Pasteurizing Plant

Richmond County

Sedutto Ice Cream Corp.
2000 Richmond Terrace
Staten Island, NY 10302
Manufacturing Plant

State of New York

Ice Cream Plants

Nassau County

Parvelle Frozen Desserts, Inc.
Lynbrook, NY
516-887-1769

Heller Enterprises, Inc.
E. Rockaway, NY
516-593-3577

Creme Le Crop Ltd.
Merrick, NY
(no phone no. listed)

Nassau Ice Cream Co. Inc.
Roslyn, NY
516-621-7116

Hanan Products Co. Inc.
Hicksville, NY
516-938-1000

Hunt-Wesson Foods, Inc.
Lynbrook, NY
516-887-9191

Suffolk County

Herbert Kunitz
Riverhead, NY
516-727-3930

Teeple Luncheonette Corp.
Port Jefferson, NY
(no phone no. listed)

Peter & Anthony Meras
Riverhead, NY
516-727-3671

Frodo Enterprises Inc.
Smithtown, NY
(no phone no. listed)

Swensens Ice Cream Co. of
Long Island, Inc.
Melville, NY
516-692-4745

Bridgehampton Kitchen Inc.
Bridgehampton, NY
516-537-9885

James W. and Iaul W. Parash
Southampton, NY
516-283-9590

*Source: Bulletin 424, List of Milk Plants and Dealers in New York State, June 1983, Division of Dairy Services Industry.

State of New York

Ice Cream Plants

Queens County

Queensboro Farm Products Inc.
Long Island City, NY
121-786-8900

Mayflower Ice Cream Corp.
Long Island City, NY
212-784-7463

Queens Farm Dairy Inc.
Ozone Park, NY
212-843-7077

Hortsmann Mix & Cream Inc.
Long Island City, NY
212-932-4735

Noble Deserts, Inc.
Far Rockaway, NY
212-471-4113

Instantwhip - New York Inc.
Woodside, NY
212-278-1634

Chopsies Inc.
Far Rockaway, NY
212-471-7272

Kings County

Marchiony Ice Cream Corp.
Brooklyn, NY
212-624-5070

L. B. Gardens, Inc.
Brooklyn, NY
(no phone no. listed)

Bravo Soft Ice Cream Rental
Inc.
Brooklyn, NY
212-624-5297

Roma Italian Ices Co. Inc.
Brooklyn, NY
212-467-0125

Rehses Ice Cream Co. Inc.
Brooklyn, NY
212-462-3596

Ginos Italian Ices
Brooklyn, NY
212-854-4226

Gold Star Ice Cream Co.
Brooklyn, NY
212-756-1500

Savarese Italian Pastry Shoppe,
Inc.
Brooklyn, NY
212-438-7770

Metro Kosher Ices
Brooklyn, NY
212-388-1323

Angels Tropical Ices. Inc.
Brooklyn, NY
(no phone no. listed)

Primo Frozen Deserts
Brooklyn, NY
212-252-2312

State of New York

Ice Cream Plants

New York County

Bleecker Street Pastry Shop
Inc.
New York, NY
212-242-4959

Chinatown Ice Cream, Inc.
New York, NY
212-608-4170

Albert Zirino, Inc.
New York, NY
(no phone no. listed)

New York Fruit Ice Inc.
New York, NY
(no phone no. listed)

DPS Investors Inc.
New York, NY
(no phone no. listed)

Bronx

Coco Helado, Inc.
Bronx, NY
(no phone no. listed)

Staten Island

Olympic Ice Cream Co. Inc.
Richmond Hill, NY
212-849-6200

Westchester County

Dellwood Foods, Inc.
Yonkers, NY
914-965-4200

Neilsen Ice Cream Co. Inc.
Port Chester, NY
914-937-4400

ATTACHMENT 5

NEW YORK STATE
FARMSTAND INFORMATION*

NASSAU COUNTY

Rottkamp's Farm Stand
554 Hempstead Turnpike
Elmont, NY

Young's Farm
Hegeman's Lane
Old Brookville, NY
626-9638

Grossmann's Farms
488 Hempstead Avenue
Malverne, NY
599-0900

Van Sise Farms
8047 Jericho Turnpike
Woodbury, NY
921-3586

Sweet Pea Fruit Exchange Inc.
3370 Hillside Avenue
New Hyde Park, NY
742-7979

Meyers Farm
Woodbury Road
Woodbury, NY
364-1777

Parkers Farms
Newbridge Road
Bellmore, NY

Glen Head Farms
Elm Place and Glen Cove Ave.
Glen Head, NY
676-6686

Hermans Farm
1021 Jerusalem Avenue
Uniondale, NY
486-8469

Burleigh Horan
Cold Spring Road
Syosset, NY
921-5561

Filasky Farms
Route 25A, Northern Boulevard
Brookville, NY
626-0317

*Sources: Guide to Farm Fresh Food-Metro Region, New York State
Department of Agriculture and Markets, 1981.
Newsday, Thursday, July 29, 1982

NEW YORK STATE
FARMSTAND INFORMATION

SUFFOLK COUNTY

Mediavilla Fruit Farm
1501 E. Jericho Turnpike
Huntington, NY
427-2712

Sunny Pond Farm
478 Park Avenue
Huntington, NY

Silbersteins Farm Stand
Pulaski and Oakwood Roads
Huntington, NY
423-6141

Kaufold Farms
1748 Straight Path
Wheatley Heights, NY
643-1758

Schmitts Farm Stand
26 Pinelawn Road
Melville, NY
423-5693

Red Barn Farm
Bagatelle and Half Hollow Roads
(LIE, Exit 50)
Dix Hills, NY
549-1159

DeRosa's Farm Stand
800 Deer Park Avenue
Dix Hills, NY
667-3633

Vinnie's and Louie's Pick
Your Own Tomato Farm
561 Deer Park Avenue
(LIE, Exit 51S)
Dix Hills, NY
499-2573

Salad Barn
77 Pinelawn Road
Melville, NY
752-8007

Meglio Farm Stand
Ruland Road (West of Pinelawn Rd)
Melville, NY

Melville Farm
133 Pinelawn Road
Melville, NY

Meyers Farm
Old Country Road (East of Round
Swamp Road)
Melville, NY
692-7667

White Post Farms
250 Old Country Road
Melville, NY
427-3464

South Breeze Farm
260 Old Country Road
Melville, NY
423-5914

Redwood Farm Stand
Route 110
Farmingdale, NY
293-0441

Davis Farm Stand
624 Deer Park Avenue
Dix Hills, NY
667-7246

NEW YORK STATE
FARMSTAND INFORMATION

Ackerly's Farm Stand
Stoothoff Road
Northport, NY
499-2573

Johnson Farm Stand
123 Cedar Road
East Northport, NY
266-1822

David F. Wicks Florist
Farm Stand
445 N. Country Road
St. James, NY
584-5727

Davis Yankee Farm
Route 25 (Jericho Turnpike)
Coram, NY
732-1062

Circle M
Route 112
Medford, NY
732-9571

Lohmann's Farmstand
South Country Road
Brookhaven (east of Bellport), NY
286-2584

Ken Glover Farms
633 Horseblock Road
Brookhaven, NY
286-8721

Blue Point Farms
171 Montauk Highway
Blue Point, NY
363-2673

Davis Peach Farm
Route 25A,
East of Old Country Road 83
Mount Sinai, NY
473-9065

Agway Stand (Borella)
Route 25A
Mount Sinai, NY

Richter's Orchard
Pulaski Road
East Northport, NY
261-1980

Silverstein Farm Stand
319 Cuba Hill Road
East Northport, NY
368-6312

Yellow Top Farm Stand
Route 347
Smithtown, NY
265-1663

Brightwaters Farms
1624 Manatuck Boulevard
Bay Shore, NY

Donahue Farms
Main Road
Calverton, NY
727-0149

Spruce Acres Farm
Main Road
Calverton, NY
727-4554

Filasky's Farm
Smithtown Bypass (Route 347)
Nesconset, NY
265-1796

BB & GG Farm Stand
Route 25A
St. James, NY
862-9182

Borella's Farm
Old Town Road
East Setauket, NY
473-1796

NEW YORK STATE
FARMSTAND INFORMATION

Fox Hollow Farm Stand
South Avenue
Calverton, NY
727-1786

Sabat Farm
116 Sound Avenue
Baiting Hollow, NY
727-2426

Anderson Farm Stand
Route 58
Old Country Road
Riverhead, NY
727-1129

Reeve Farm
Sound Avenue
Riverhead, NY
727-1095

Youngs Orchard & Country
Gift Shop
Sound Ave. (east of Roanoke Ave.)
Riverhead, NY
727-5363

Sunburst Acres
96 Sound Avenue
Riverhead, NY
722-3572

Cider Mill
Main Road
Route 25
Laurel, NY
298-8969

Little Chief II Farm Stand
Route 25A (east of Village)
Aquebogue, NY
722-3077

Red Barn Farm Stand
Main Road
Aquebogue, NY
722-3676

Little Chief II Farm Stand
North of Route 25
Jamesport, NY
722-3979

Kalers Farm
Sunrise Highway
Bohemia, NY
589-1056

Condzella Farm
Route 25A
Wading River, NY
929-4697

Keibel Farms
530 Horseblock Road
Farmingville, NY
732-3344

May's Farm
Route 25A and Wading River Road
Wading River, NY
929-6654

Lewin Farms
Sound Avenue
Wading River, NY
929-4327

South Manor Farms
184A Wading River
Manorville, NY
878-1785

La Corte Farm Stand
Montauk Highway
Moriches, NY
878-1140

Moriches Farmer Market
Montauk Highway
Moriches, NY
878-9786

Olish Farm Stand
Eastport-Manorville Road
Eastport, NY
325-0539

NEW YORK STATE
FARMSTAND INFORMATION

McKays Farmstand
Main Road
Aquebogue, NY
722-4142

Paul Rogers Farm Stand,
Flowers by Ami
South Country Rd. & Montauk Hwy.
Speonk, NY
325-0651

Skelly's Farm Stand
Main Road
Aquebogue, NY
722-3796

Bills Pick-Your-Own
Route 25
Wading River, NY

William Polak Farms
Church Lane
Aquebogue, NY
722-3049

Benny Gatz
119½ Sound Avenue
Riverhead, NY
727-0425

Manor Hill Farm
Main Road
Mattituck, NY
298-8682

Farmer John Stand
Route 25 and County Road 58
Riverhead, NY
727-0425

Covey's Farm Stand
Main Road
Southold, NY
765-2628

Briermere Farms
79 Sound Avenue (north end of
Route 105)
Riverhead, NY
722-3931

Doug's Vegetable Patch
Montauk Highway, Route 27
Sagaponack, NY
537-3224

Louis Gatz
120 Sound Avenue
Riverhead, NY
722-3703

Carol Farm Stand
Route 114
Shelter Island, NY
749-2293

Cooper Farms
Breakwater Road
Mattituck, NY

Benny's Farm Stand
Mitchell Lane
Bridgehampton, NY
537-1335

Wickmans Fruit Farm
Route 25
Cutchogue, NY
734-6441

Harvest Time Farms
Main Road
Cutchogue, NY
734-6530

NEW YORK STATE
FARMSTAND INFORMATION

Farmer Mikes Farm Stand
Route 25A
Cutchogue, NY
734-6956

Thunderbird Farms
Main Road
Peconic, NY
734-5860

Wesnofske's Farm Stand
North Road
Peconic, NY
765-1617

Sep's Farm Stand
East Marion
Greenport, NY
477-1583

Latham's Farm Stand
Main Road, Route 25
Orient, NY
323-2593

Terry's Farm
Main Road
Orient, NY
323-3571

Krazewski Farms Stand
Edge of Woods Road
Water Mill, NY
726-4964

The Milk Pail
Moutauk Highway
Water Mill, NY
537-0175

North Sea Farms
Noyac Road
Southampton, NY
283-0735

Agway Stand (Borella)
Route 25A
Mount Sinai, NY

NEW YORK STATE
FARMSTAND INFORMATION

The Green Thumb
Montauk Highway
Water Mill, NY
726-4989

Hampton Farms
Montauk Highway
Route 27
Water Mill, NY
726-4877

Hillview Farm
Lumber Lane
Bridgehampton,
537-0226

Hank's Farm Stand
Corner Noyac & Stony Hills Rds.
Noyac, NY
726-4964

Sagg Swamp Farm
Montauk Highway
Route 27
Sagaponack, NY
537-7974

Round Swamp Farm
184 Three Mile Road
East Hampton, NY
324-4438

Amagansett Farmers Market
746 Main Street
Amagansett, NY
267-3894

NEW YORK STATE
FARMSTAND INFORMATION

QUEENS COUNTY

Klein's Farm Stand
194-15 73rd Avenue
Flushing, NY

NEW YORK STATE
FARMSTAND INFORMATION

WESTCHESTER COUNTY

Square Deal Farm
328 West Hartsdale Avenue
Hartsdale, NY
(914) 946-4673

Chubbys Farm Market *
Route 202
Peekskill, NY
(914) 737-7282

Westchester View Farm
701 Dobbs Ferry Road
Hartsdale, NY
(914) 592-4610

Wilkens Fruit Farm *
1313 White Hill Road
Yorktown, NY
(914) 245-5111

Haight Orchards
Hard Scrabble Road
Croton Falls, NY
(914) 277-3507

Outhouse Orchards
Hard Scrabble Road
Croton Falls, NY
277-3188

Westchester View Farm
701 Dobbs Ferry Road
Hartsdale, NY
(914) 592-4610

* located outside 50-mile emergency planning zone

NEW YORK STATE
FARMSTAND INFORMATION

PUTNAM COUNTY

Salinger Orchards
Guinea Road
Brewster, NY
914-277-3521

ATTACHMENT 6

SURFACE WATER SOURCES FOR COMMUNITY WATER SYSTEMS
IN THE NEW YORK STATE 50-MILE EMERGENCY PLANNING ZONE

<u>Reservoir</u>	<u>Community Water System</u>	<u>Telephone</u>	<u>Contact</u>
Rye Lake	Harrison Water District #1	(914) 949-3287	Supervisor
Byram Lake	Mt. Kisco Village	(914) 241-0500	Superintendent
Muscoot Reservoir	New York City - Aqueduct	(212) 971-6796	Director, NY City Bureau of Public Water Supply Protection
Titicus Reservoir	New York City - Aqueduct	(212) 971-6796	Director, NY City Bureau of Water Supply Protection
Cross River Reservoir	New York City - Aqueduct	(212) 971-6796	Director, NY City Bureau of Water Supply Protection
Kensico Reservoir	New York City - Aqueduct	(212) 971-6796	Director, NY City Bureau of Water Supply Protection
White Planes Reservoir	White Plains	(914) 682-4220	Superintendent
Middle Branch Reservoir	Brewster Heights	(914) 279-3760	Director, NY City Bureau of Water Supply Protection
	New York City - Aqueduct	(212) 971-6796	Director, NY City Bureau of Water Supply Protection
East Branch Reservoir	New York City - Aqueduct	(212) 971-6796	Director, NY City Bureau of Water Supply Protection
Bog Branch Reservoir	New York City - Aqueduct	(212) 971-6796	Director, NY City Bureau of Water Supply Protection
Croton Falls Reservoir	New York City - Aqueduct	(212) 971-6796	Director, NY City Bureau of Water Supply Protection

SURFACE WATER SOURCES FOR COMMUNITY WATER SYSTEMS
IN THE NEW YORK STATE 50-MILE EMERGENCY PLANNING ZONE

<u>Reservoir</u>	<u>Community Water System</u>	<u>Telephone</u>	<u>Contact</u>
East Branch of the Croton River (Diverting Reservoir)	Brewster Village	(914) 279-3760	Superintendent
New Croton Reservoir	New York City - Aqueduct	(212) 971-6796	Director, NY City Bureau of Water Supply Protection

Source: New York State Atlas of Community Water Sytem Sources 1982
New York State Dept. of Health, Division of Environmental Protection
Bureau of Public Water Supply Protection

GROUNDWATER SOURCES FOR COMMUNITY WATER SYSTEMS

IN NEW YORK STATE

NASSAU COUNTY

Municipal Community

<u>ID. NO.*</u>	<u>Community</u>	<u>Telephone Number</u>	<u>Contact</u>
1	Albertson Water District	(516) 621-3610	Chrm. Bd. of Commissioners
2	Bayville Village	(516) 628-1439	Mayor
3	Bethpage Water District	(516) 931-0093	Chrm. Bd. of Commissioners
4	Bowling Green Water District	(516) 794-8300	Commissioner
5	Carle Place Water District	(516) 333-0540	Chrm. Bd. of Commissioners
6	Citizens Water Supply Company	(516) 482-0210	District Manager
7	Deforest Drive Association	(516) 367-9557	President
8	East Meadow Water District	(516) 794-8300	Commissioner
9	Farmingdale Village	(516) 249-0093	Mayor
10	Franklin Square Water District	(516) 354-0780	Chrm. Bd. of Commissioners
11	Freeport Village	(516) 378-4000	Mayor
12	Garden City Park Water District	(516) 746-3194	Chrm. Bd. of Commissioners
13	Garden City Village	(516) 742-5800	Mayor
14	Glen Cove City	(516) 676-2610	Mayor
15	Hempstead Village	(516) 489-3403	Mayor
16	Hicksville Water District	(516) 931-0184	Chrm. Bd. of Commissioners
17	Jamaica Water Supply Company	(516) 739-6400	President
18	Jericho Water District	(516) 921-8280	Chrm. Bd. of Commissioners
19	Levittown Water District	(516) 794-8300	Commissioner
20	Lido-Point Lookout Water District	(516) 794-8300	Commissioner
21	Locust Valley Water District	(516) 671-1783	Chrm. Bd. of Commissioners
22	Long Beach City	(516) 431-5288	Manager
23	Long Island Water Corporation	(516) 593-1000	President
24	Manhasset-Lakeville Water District	(516) 466-4416	Chrm. Bd. of Commissioners
25	Massapequa Water District	(516) 798-5266	Superintendent
26	Mill Neck Estates Water Supply	(516) 628-1439	Commissioner
27	Mineola Village	(516) 746-0750	Mayor
28	New York Water Service	(516) 378-3922	Manager
29	Old Westbury Village	(516) 626-0800	Mayor
30	Oyster Bay Water District	(516) 922-4848	Chrm. of Bd. Commissioners
31	Planview Water District	(516) 931-6469	Chrm. of Bd. Commissioners
32	Plandome Village	(516) 627-1748	Mayor
33	Port Washington Water District	(516) 767-0171	Chrm. of Bd. Commissioners
34	Rockville Centre Village	(516) 766-0300	Mayor
35	Roosevelt Field Water District	(516) 489-5000	Commissioner
36	Roslyn Water District	(516) 621-7770	Chrm. of Bd. Commissioners
37	Sands Point Village	(516) 883-3044	Mayor
38	Sea Cliff Water Company	(516) 676-1166	President
39	Sel-Bra Acres Water Supply	(516) 922-6180	President
40	South Farmingdale Water District	(516) 249-3330	Chrm. of Bd. Commissioners
41	Split Rock Water Supply	(516) 883-8000	Fred Vonbargen

* Refer to the New York State Atlas of Community Water System Sources - 1982, page 77, for a map showing the well locations.

GROUNDWATER SOURCES FOR COMMUNITY WATER SYSTEMS
IN NEW YORK STATE

NASSAU COUNTY

Municipal Community (Cont'd.)

<u>ID. NO.*</u>	<u>Community</u>	<u>Telephone Number</u>	<u>Contact</u>
42	Uniondale Water District	(516) 538-8300	Commissioner
43	West Hempstead-Hempstead Garden Water District	(516) 483-1180	Chrm. Bd. of Commissioners
44	Westbury Water District	(516) 333-0427	Chrm. Bd. of Commissioners
45	Williston Park Village	(516) 742-8533	Mayor

Non-Municipal Community

46	Community Hospital at Glen Cove	(516) 676-5000	Exec. Vice President
47	Planting Fields Arboretum	(516) 922-9206	General Superintendent

* Refer to the New York State Atlas of Community Water System Sources - 1982, page 77, for a map showing the well locations.

GROUNDWATER SOURCES FOR COMMUNITY WATER SYSTEMS

IN NEW YORK STATE

SUFFOLK COUNTY

Municipal Community

<u>ID. NO.*</u>	<u>Community</u>	<u>Telephone Number</u>	<u>Contact</u>
1	Bevon Water Corporation		
2	Brentwood Water District	(516) 273-4565	Supervisor
3	Bridgehampton Water Company	(516) 537-0724	Richard Sanford
4	Captain Kidd Water Company	(516) 298-4533	Vice President
5	Crab Meadow Beach	(516) 737-4275	-
6	Culross Corporation (Culross Beach)	(516) 744-3854	President
7	Dering Harbor Village	(516) 749-0195	Mayor
8	Dix Hills Water District	(516) 421-1812	Supervisor
9	East Farmingdale Water District	(516) 249-4211	Supervisor
10	Fishers Island Water Works Corporation	(516) 788-7422	President
11	Greenlawn Water District	(516) 261-0874	Bd. of Water Commissioners
12	Greenport Village	(516) 477-0248	Mayor
13	Hampton Bays Water District	(516) 728-0179	Supervisor
14	Hawthorne - Maple Civic Association	(516) 744-6575	Secretary-Treasurer
15	Herod Point Association		Manager
16	North Shores Water Company	(516) 744-3910	President
17	Ocean Beach Village	(516) 583-5940	Mayor
18	Reeves Beach Water Company	(516) 298-4278	President
19	Riverhead Water District	(516) 727-3205	Supervisor
20	Roanoke Water Corporation	(516) 298-4278	President
21	Saltaire Village	(516) 583-5465	Mayor
22	Scott's Beach Water Company	(516) 744-3437	Lester Homan
23	Shelter Island Heights Association	(516) 749-0195	Huson Sherman
24	Shirley Water Works	(516) 475-8541	John Prudenti
25	Shorewood Water Corporation	(516) 928-3555	President
26	Soundview Association	(516) 751-8236	Director
27	South Huntington Water District	(516) 427-8192	Bd. of Water Commissioners
28	Suffolk County Water Authority	(516) 589-5200	Chairman
29	Sunhill Water Corporation	(516) 271-8277	Vice President
30	Swan Lake Water Corporation	(516) 732-1718	Vice President
31	Terrace-on-the-Sound	(516) 744-2705	President
32	Woodbury Triangle Corporation	(516) 694-3040	-

* Refer to the New York State Atlas of Community Water Systems Sources - 1982, page 79, for a map showing the well locations.

GROUNDWATER SOURCES FOR COMMUNITY WATER SYSTEMS

IN NEW YORK STATE

SUFFOLK COUNTY

Non-Municipal Community

<u>ID. NO.*</u>	<u>Community</u>	<u>Telephone Number</u>	<u>Contact</u>
33	Aquebogue Mobile Home Court	(516) 722-3655	John Wittmeier
34	Brookhaven National Labs	(516) 282-2123	
35	Calverton Hills Owners Association	(516) 698-5816	Robert Winicel
36	Cedar Lodge Nursing Home	(516) 878-4400	-
37	Central Islip Psychiatric Center	(516) 234-6262	Robert Pelicastro
38	Crest Hall Health Related Facility	(516) 924-8820	Dwight Worthy
39	East Quogue Mobile Estates	(516) 653-5528	Annette Neuhaus
40	Good Samaritan Hospital	(516) 321-2000	
41	Greis Mobile Park	(516) 588-5599	Fred Greis
42	Hampton Gateway Apartments	(516) 981-9600	John Folks
43	Kings Park Psychiatric Center	(516) 269-6600	Northrop
44	Knox School	(516) 584-5500	Administrator
45	Lake Hurst Lodge Adult Home	(516) 588-5543	
46	Leier's Mobile Park	(516) 325-1308	Margaret Leir
47	Little Flower Children's Services	(516) 929-6200	Director
48	Montauk Air Force Station		
49	Napeague Trailer Park	(516) 267-3787	President
50	Northport VA Hospital	(516) 663-2000	
51	Oak Park Trailer Park	(516) 929-4620	Joseph Sullivan
52	Oakland Ridge Mobile Park	(516) 727-2950	Thurm
53	Park Lake Rest Home	(516) 588-5290	Turner
54	Peacock Alley	(516) 757-0414	Gil Pavone
55	Peconic River Trailer Park	(516) 727-0897	Anthony Abruzzo
56	Peconic View Adult Mobile Home Park	(516) 472-4861	Hulahan
57	Pinecrest Garden Apartments	(516) 727-1610	Joseph Fuchs
58	Ramblewood Mobile Home	(516) 929-4647	Charles Lavin
59	Ridge Rest Home	(516) 744-9781	Virgie Tinsley
60	Rocky Point Family Housing		
61	Rollin Mobile Homes	(516) 727-3697	Rollin Hargis
62	St. Joseph Convent - Long Island University	(516) 273-4531	Ursula
63	Sam A. Lewison Start Center	(516) 667-1188	Director
64	South Bay Adult Home	(516) 878-0758	Janet Brizzi
65	Southampton College		
66	Speonk Mobile Home Park	(516) 325-1155	Diana Stanley
67	Suffolk Developmental Center	(516) 271-3900	-
68	Three Mile Harbor Trailer Park	(516) 379-4596	Harold Streibel
69	Thurm's Mobile Estates	(516) 727-2950	Thurm's
70	USCG Station - Moriches	(212) 264-4962	
71	Wes Dubicki Apartments	-	Wes Dubicki

* Refer to the New York State Atlas of Community Water System Sources - 1982, page 79, for a map showing the well locations.

GROUNDWATER SOURCES FOR COMMUNITY WATER SYSTEMS

IN NEW YORK STATE

WESTCHESTER COUNTY PORTION OF THE 50-MILE EMERGENCY PLANNING ZONE

Non-Municipal Community

<u>ID. NO.*</u>	<u>Community</u>	<u>Telephone Number</u>	<u>Contact</u>
2	Bedford Consolidated Water District	(914) 666-3931	Supervisor
3	Bedford Farms Water Company	(914) 762-6878	President
4	Bloomerside Water Supply	(914) 669-5062	President
6	Candlewood Park	(914) 232-5802	Helen Wishnetsky
7	Cedar Downs Water District	(914) 666-3911	Supervisor
8	Croton Falls Water District	(914) 669-5577	Supervisor
10	Forest Park Water Company #3	(914) 628-9627	Lee Archer
11	Goldensbridge Community Association	(914) 232-8634	President
13	Harrison Water District #1	(914) 949-3287	Supervisor
15	Indian Hill Subdivision	(914) 232-3421	President
18	Lake Katonah Club Inc.	(914) 232-5532	Chairman
19	Mount Kisco Village	(914) 666-6210	Village Manager
21	North Castle Water District #1	(914) 949-8288	Supervisor
22	North Castle Water District #2	(914) 273-8914	Supervisor
24	Pabst Water Company	(914) 669-5395	Treasurer
25	Pamela Lane Water Supply	(914)	
27	Pietschs Garden	(914) 669-5775	President
28	Pleasantville Village	(914) 769-0045	Supervisor
30	Roosevelt Drive Water Users	(914) 937-1100	Chairman
31	Salem Acres Association	(914) 335-5659	President
32	Sunset Ridge Water District	(914) 277-3006	Supervisor
34	Thornwood Water District	(914) 769-1330	Chairman
35	Truesdale Lake Prop. Owners Assoc.	(914) 248-8878	Commissioner
36	Twin Lakes Water Works Corp.	(914) 248-8878	Commissioner
38	Westchester Joint Water Works	(914) 698-3500	Chairman
40	White Plains City	(914) 682-4220	Commissioner
41	Wild Oaks Water Company	(914) 232-8111	President

Non-Municipal Community

46	Bedford Court Apartments	(914) 241-2235	Maint. Coordinator
47	Bedford Hills Correctional Facility	(914) 241-3100	Commissioner
51	Jennie Clarkson Home	(914) 949-0665	Director
54	Marceca Building	(914) 277-3761	Robert Marceca
55	Miriam Osborn Memorial Home	(914) 967-4100	Executive Director
56	Oakridge Condominium	(914) 533-6296	President
59	The Farm P.O Wild Oaks Park Inc.	(914) 232-8111	President

* Refer to the New York State Atlas of Community Water System Sources - 1982, page 75, for a map showing the well locations.

GROUNDWATER SOURCES FOR COMMUNITY WATER SYSTEMS
IN NEW YORK STATE

PUTNAM COUNTY PORTION OF THE 50-MILE EMERGENCY PLANNING ZONE

Municipal Community

<u>ID. NO.*</u>	<u>Community</u>	<u>Telephone Number</u>	<u>Contact</u>
4	Blueberry Hill	(914) 279-4324	Supervisor
20	First Brewster Corporation	(203) 435-9907	President
23	Fox Hill Estates	(914) 279-4324	Supervisor
25	George Walsh	(914) 279-4390	George Wald
44	Spring Knoll Estates	(914) 628-9627	President
45	State Ridge Manor	(914) 279-4324	Supervisor
48	Vails Grove	(914) 669-5100	President
50	Wildwood Homes		

Non-Municipal Community

53	Brewster Woods Condominium	(914) 277-3752	Board of Managers
68	Meadow Motor & Mobile Home Court		

* Refer to the New York State Atlas of Community Water System Sources - 1982, page 67, for a map showing the well locations.

ATTACHMENT 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

Federal Radiological Emergency Response Plan (FRERP); Publication for Public Review, Comment, and as the Basis for a Large-Scale Field Exercise

AGENCY: Federal Emergency Management Agency.

ACTION: Notice.

SUMMARY: The current plan for a significant Federal response to an accident at a commercial nuclear power plant is the National Radiological Emergency Preparedness/Response Plan for Commercial Nuclear Power Plant Accidents (Master Plan). The Master Plan was published December 23, 1980, in response to the Three Mile Island emergency. The Master Plan does not address other types of radiological emergencies.

In order to consolidate the Federal response to a wide range of potential radiological emergencies, the Federal Emergency Management Agency has coordinated a Federal interagency effort to develop the Federal Radiological Emergency Response Plan (FRERP), which is an expansion of the Master Plan, broadening its scope to include all types of civil radiological emergencies that might require a significant Federal response in support of State and local governments.

The draft FRERP is hereby published for public review and comment and to serve as the basis for a large-scale field exercise to be held in March 1984, to test the operational concepts of the draft FRERP. The test of the draft FRERP will evaluate the effectiveness in coordinating the Federal agencies' responses to this simulated emergency. Lessons learned from the exercise, together with comments submitted during the comment period, will be considered in producing the final FRERP. This Plan will then be published in the Federal Register and will supersede the Master Plan.

When published in its final form, the FRERP will become the single Federal plan for coordinating the Federal response to any civil radiological emergency requiring a significant Federal response. The FRERP is intended to facilitate and clarify the Federal role and mechanisms for providing support to State and local governments in a major radiological emergency, if Federal support is required.

The FRERP has been developed as a cooperative effort of the 12 Federal agencies represented on the

Subcommittee on Federal Response of the Federal Radiological Preparedness Coordinating Committee (FRPCC). This Subcommittee has responsibility for coordinating Federal interagency emergency planning activities for any type of civil radiological emergency.

The FRERP outlines in detail the individual authorities and responsibilities of each of the 12 Federal agencies that have authorities and/or resources appropriate to a Federal response to a radiological emergency. Each of these agencies is now preparing, or has prepared, response plans to carry out their roles under the FRERP. As stated, Part I of the FRERP is hereby published for public review, comment, and as the basis for a large-scale field exercise of the Plan. Part II, the individual agency plans, will not be included in this printing. However, a summary of the basic provisions of each of those plans is included in Part I.

DATES: Comments on this draft Plan should reach FEMA by March 30, 1984, and will be considered in the publication of the FRERP later in 1984.

ADDRESS: Send comments to Docket Clerk, Federal Emergency Management Agency, 500 C Street, SW., Washington, D.C. 20472.

FOR FURTHER INFORMATION CONTACT: Mr. Vernon Adler, Chief, Federal Response Planning and Exercise Branch, Disaster Assistance Programs, State and Local Programs and Support Directorate, Federal Emergency Management Agency, 500 C Street, SW., Washington, D.C. 20472, telephone 202-287-0508.

SUPPLEMENTARY INFORMATION: Under the provisions of Executive Order 12148 (July 20, 1979), the Director, FEMA, is responsible for establishing Federal policies for, and coordinating, all civil emergency planning, management, mitigation, and assistance functions of executive agencies. Under this mandate, FEMA has assumed the responsibility for coordinating the development of the Federal Radiological Emergency Response Plan.

Pub. L. 96-295, Section 304 (June 30, 1980) requires that the President prepare and publish a National Contingency Plan which provides for an expeditious, efficient, and coordinated Federal response to an accident at a commercial nuclear power plant. Executive Order 12241 (September 29, 1980) delegated this responsibility to the Director, FEMA. This publication of the draft FRERP is a necessary step in the FRERP completion process. When the Plan is completed and approved for publication, such publication will fulfill the requirements of Pub. L. 96-295 and E.O. 12241.

While the Federal Radiological Emergency Response Plan is the result of an intensive interagency effort involving each agency with responsibilities under the Plan, this cooperative effort does not constitute approval by the agencies involved. FEMA is initiating this approval process with the publication of this Notice and will be pursuing this process through the Subcommittee on Federal Response in order that the Plan may be published as a final document during 1984.

Dated: January 27, 1984.

Samuel W. Speck,

Associate Director, State and Local Programs and Support Directorate.

The Federal Radiological Emergency Response Plan

Part I (Pre-Exercise Publication)

January 1984.

(Prepared by the Federal Emergency Management Agency and the other Agencies on the Subcommittee on Federal Response of the Federal Radiological Preparedness Coordinating Committee)

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I. Introduction and Background

A. Purpose

The Federal Radiological Emergency Response Plan (FRERP) is to be used by Federal agencies in peacetime radiological emergencies. It primarily concerns the offsite Federal response in support of State and local governments. The FRERP: (1) Provides the Federal government's concept of operations for responding to radiological emergencies; (2) outlines Federal policies and assumptions that underlie this concept of operations and on which Federal agency response plans were developed (in addition to their agency-specific policies); and (3) specifies authorities and responsibilities of each Federal agency likely to have a significant role in such emergencies. The FRERP includes the Federal Radiological Monitoring and Assessment Plan (FRMAP) for use by Federal agencies with radiological monitoring and assessment capabilities.

Part I of the FRERP also includes executive summaries of Federal agency response plans. Part II, to be maintained by FEMA, provides complete Federal agency response plans. The FRERP will evolve continuously as Federal agencies gain experience from conducting exercises or responding to actual radiological emergencies.

B. Scope

The FRERP covers any radiological emergency that could require a significant response by several Federal agencies. Specifically, emergencies occurring at fixed nuclear facilities or during the transportation of radioactive materials (including nuclear weapons) may fall within the scope of the plan regardless of whether the facility or transportation carrier is publicly or privately owned, Federally regulated, or regulated by an Agreement State.¹ Emergencies occurring at unregulated facilities and carriers may also fall within the scope of this plan if they involve real or potential radiological consequences off site. The time period during which the FRERP is in effect encompasses the Federal response from initial notification of the Federal agencies through the development of a plan of action, when necessary, for helping the State and local governments

to recover from the emergency and deactivation of Federal response.

This plan applies to emergencies resulting from the following types of incidents:

- Fixed Nuclear Facility Incidents;
- Transportation Incidents; and
- Other Incidents, e.g., nuclear-powered satellite re-entry.

Sabotage and terrorism are not treated as separate categories of incidents; rather, they are considered a complicating dimension of the incident types listed above. The Atomic Energy Act directs the Federal Bureau of Investigation to investigate all alleged or suspected criminal violations of the Act. The Attorney General, operating through the FBI and other appropriate personnel in the Department of Justice or in other Executive Departments, has the authority to investigate any alleged or suspected weapon, device, or material and for restoring nuclear facilities to their rightful custodians, just as they are responsible for locating and neutralizing conventional weapons such as handguns, rifles, high explosives, etc., involved in Federal criminal offenses.

In view of the FBI's unique responsibilities under The Atomic Energy Act, as affected by The Energy Reorganization Act, it is realistic to expect the Cognizant Federal Agency (CFA)²—DOE, NCR or DOD—to assist the FBI in locating and subsequently neutralizing any nuclear weapon or device of unauthorized origin. The FBI will direct all law enforcement aspects related to acts of sabotage and terrorism, with assistance as required from State and local law enforcement agencies. The FBI also will interface with the CFA as needed in responding to such acts. When it is not obvious which Federal agency is the CFA, FEMA will act as the CFA while consulting with other Federal agencies with the appropriate technical expertise to assume the CFA role.

Another aspect of the scope of the FRERP concerns the location of response to the emergency. The FRERP is concerned primarily with Federal support to State and local governments of the site of the emergency, i.e., "off site." For emergencies occurring at fixed nuclear facilities, "off site" generally refers to the area beyond the facility boundary. For other types of emergencies, e.g., transportation, "off site" is defined at the time of the emergency. Offsite support refers to

Federal assistance in mitigating the hazards beyond the immediate area associated with the emergency, and in determining and implementing measures to protect the public.

The Federal government can also provide assistance on the site of the emergency, i.e., "on site." The "onsite" Federal support is the primary responsibility of the CFA, which can support State and local efforts by helping the owner or operator of the affected facility or carrier to bring the emergency under control, thereby minimizing offsite consequences.

The plan is designed to accommodate both present, and future, fixed and mobile facilities involving nuclear materials. However, the Federal response to different types of radiological emergencies under the FRERP may differ somewhat because of the type or amount of radioactive material that may be released, the size of the affected area, or the time available to determine and implement public protective actions.

C. Authorities

The following list includes the authorities for the response of most Federal agencies participating in this plan:

- *The Atomic Energy Act of 1954, as amended, Pub. L. 83-703.* This Act declares that the use of nuclear materials must be regulated in the national interest in order to provide for the common defense and security, and to protect the health and safety of the public.
- *Executive Order 11490, October 28, 1969, as amended.* This Executive Order assigns emergency national planning and preparedness functions to several departments and agencies of the Federal government that complement the military readiness planning responsibilities of DOD. The order consolidates assignments of emergency preparedness functions previously contained in 21 Executive Orders and two defense mobilization orders, and assigns them to various departments and agencies.
- *Executive Order 12148, July 20, 1979.* This Executive Order assigns the Director, FEMA, the responsibility for establishing Federal policies for, and coordinating, all civil defense and civil emergency planning, management, mitigation, and assistance functions of executive agencies.
- *Nuclear Regulatory Commission Appropriation Authorization, Pub. L. 96-295, June 30, 1980, Sec. 304.* This authorization requires the President to

¹ The terms "Federal agency" and "Federal department" are used interchangeably throughout this document.

² Under the Atomic Energy Act of 1954 (section 274 b.), the NRC has relinquished to certain States its regulatory authority for licensing the use of source, byproduct, and small quantities of special nuclear material.

³ A Cognizant Federal Agency is the Federal agency that owns, authorizes, or regulates the facility, carrier or cargo (including nuclear weapons), containing the radioactive materials causing the emergency.

prepare and publish a National Contingency Plan to provide for expeditious, efficient, and coordinated action by appropriate Federal agencies to protect the public health and safety in case of accidents at commercial nuclear power plants.

- *Executive Order 12241, September 29, 1980.* This Executive Order delegates to the Director, FEMA, the responsibility for publishing the National Contingency Plan for accidents at nuclear power facilities and requires that it be published from time to time in the Federal Register.
- *44 CFR Part 351, March 11, 1982.* This regulation establishes the Federal Radiological Preparedness Coordinating Committee, the parent of the Subcommittee on Federal Response that has developed this plan. It also assigns responsibility to the Department of Energy for the development of the Federal Radiological Monitoring and Assessment Plan.

D. Planning Assumptions and Federal Policies

The following broad assumptions and policies have been used to prepare Part I of this plan and to develop the individual agency response plans and procedures contained in Part II.

1. Public and Private Sector Response Roles

The owner or operator of the affected facility or the carrier of the radioactive material has primary responsibility on site for minimizing the radiological hazards to the public. State and local governments have the primary responsibility off site for implementing measures to protect life, property, and the environment. During an emergency, appropriate Federal resources may be used to support State and local governments' response measure, if requested. Federal agency response plans recognize the primacy of the response roles of owners or operators and State and local agencies.

If the owner or operator of a nuclear activity is licensed or regulated by the State and local government in an "Agreement State," the State or local government would provide onsite monitoring, evaluation, and advice. However, the Federal government will provide any appropriate support requested by the State or local government.

The offsite Federal response role is to respond to requests for assistance from State or local governments or otherwise respond to fulfill statutory responsibilities of the Federal government.

The Federal government has an onsite response role when there exists a Cognizant Federal agency, i.e., when a Federal agency owns, authorizes, or regulates a radiological activity. That agency is primarily responsible for monitoring the owner or operator's activities and for providing needed assistance. For example, in the case of an emergency at a licensed commercial nuclear power plant, the Nuclear Regulatory Commission monitors the situation, evaluates licensee actions, and advises the licensee, as appropriate, on the licensee's efforts to bring the reactor into a stable condition and minimize the offsite radiological consequences.

Volunteer and private relief organizations, such as the American Red Cross and the Salvation Army, may assist State, local, and Federal governments in carrying out some of their responsibilities.

2. Federal Agency Authorities

Notwithstanding the primacy of the State for protecting public health and safety off site, many Federal agencies have statutory or other authorities for responding directly to certain situations affecting public health and safety. This plan cites those relevant existing legislative and executive authorities and provides a framework for coordinating Federal actions within those authorities. No new authorities are provided by this plan.

3. Basis for a Federal Response

The Federal government will respond when: (1) A State or other governmental or regulated entity requests Federal support, or (2) Federal agencies must respond to meet their statutory responsibilities, e.g., when an emergency significantly affects Federal functions, property, or resources. Any Federal response will be closely coordinated with the State and local governments concerned.

4. Federal Agency Resource Commitments

Agencies committing resources under this plan do so with the understanding that a short-term or long-term commitment of those resources may be required, depending on the nature and extent of the emergency.

5. Protocol for Federal Assistance Requests by Owners or Operators

The owner or operator of an activity, either private or authorized or regulated by the Federal government, can ask for assistance directly from the appropriate Federal agency. Such requests may be for radiological monitoring, specialized

assistance, or both. The affected State and local governments will be informed when such assistance is requested.

6. Coordination of State and Local Assistance Requests

FEMA will designate and deploy a Senior FEMA Official (SFO) to provide a single point of contact, as required, for State and local assistance requests. However, State and local government requests for assistance can be made directly to individual Federal agencies. Where State and local authorities are unable to obtain the required assistance, they should direct requests for offsite Federal assistance to the SFO, or, in the absence of such a designated official, to the appropriate FEMA regional office.

The Governor of the affected State will be advised of the designation of the SFO and will be asked to designate a State Coordinating Officer (SCO) as the principal point of State contact. The SFO will promote effective operating relationships among Federal, State, local, volunteer, and private agencies.

7. Federal and State Communications

Detecting problems and coordinating their solutions require a continuous flow of information among Federal and State agencies throughout an emergency. This plan makes no attempt to restrict this flow. However, for the SFO to coordinate response actions and maintain the most current information, Federal agencies need to keep the SFO informed of their major response efforts, and activities that might impinge on the actions of other agencies.

8. Federal Referrals of State and Local Assistance Requests

State and local authorities will be encouraged to operate through their SCO. Nevertheless, some State and local authorities may contact Federal agencies directly. Accordingly, to facilitate such contact, Federal agency response plans and procedures have:

a. Described the individual agencies' responsibilities in support of the State. This will help States to determine the most appropriate Federal agency to contact for the required assistance. Particular emphasis has been given to describing responsibilities that are closely related to those of other agencies.

b. Provided for referral of inquiries falling within another agency's area of responsibility to the appropriate agency as promptly as possible. Whenever a question exists as to the appropriate agency for referral, agencies should direct the referral to the SFO.

9. Coordination Among Federal Agencies

The SFO promotes coordination among Federal agencies to minimize duplication of Federal efforts, avoid inconsistent and incomplete actions, and provide for maximum use of available Federal resources. In addition, Federal agencies are encouraged to communicate freely and interact directly with other Federal agencies. The exchange and use of liaison representatives among agencies can facilitate this interaction and communication.

10. Public Information Coordination

Public information on the consequences of an emergency must be accurate, timely, and easily understood. Public information must be closely coordinated with State and local officials and disseminated to the public from official government sources. State officials are responsible for keeping their populace adequately informed. Since the Federal government's role is to help the State, the public information offices of the responding Federal agencies will, if requested, help State information offices prepare news releases and hold press conferences about the health and safety of the public.

When a multi-agency Federal response to an emergency occurs, all Federal public information releases will be coordinated through interagency public information organizations as described in Section II. However, when the Federal response is limited and there is no requirement for an interagency public information organization, public information will be handled solely by the CFA, State, and local officials.

Close working relationships among the public information offices of Federal agencies, their State and local counterparts, and the owner or operator are essential. The Federal government will coordinate with, and obtain concurrence as necessary from, the appropriate State and local officials on any statements to the public that bear on the responsibility of the State.

II. Concept of Operations

A. Response Overview and Summary

The Federal response to a request for radiological assistance can be divided into six major components that may involve as many as three lead Federal agencies at any one time. These components are summarized in Table II-1. As one of the agencies, FEMA is responsible for promoting coordination among the lead Federal agencies in support of State and local government

efforts.

TABLE II-1: RESPONSE OVERVIEW

Response component	Lead Federal agency
(1) Conduct onsite actions to support the owner or operator: Monitor, evaluate, advise, assist, if needed.	CFA
(2) Coordinate offsite radiological monitoring and assessment.	DOE EPA
(3) Develop or evaluate recommendations for public protective action measures on site.	CFA
(4) Present recommendations for public protective action measures off site.	CFA, in coordination with its FEMA counterparts.
(5) Promote coordination of Federal assistance to State and local governments, including implementation of public protective action measures off site, if required.	FEMA
(6) Coordinate release of information to the public and to Congress.	CFA, in coordination with FEMA.

The CFA, FEMA, and DOE or EPA each has a specific coordination function in relation to the State and the owner or operator of the radiological activity. Other Federal officials may arrive on the scene prior to the arrival of the CFA, FEMA, and DOE/EPA and may act under their own authorities to fulfill their responsibilities. During that brief period, those agencies will coordinate their activities among themselves and with the CFA, FEMA, and DOE as soon as they arrive about the status of ongoing response efforts. The CFA, FEMA, and DOE/EPA personnel on the scene will then provide their counterparts at their regional or headquarters offices all relevant information available from the scene.

The Department of Energy, during the initial phases of the emergency, and the EPA thereafter, will work with State and local radiological health agencies to help coordinate radiological offsite monitoring and assessment activities. DOE or EPA will make assessments of monitoring data and present them to the CFA and appropriate State and Federal agencies. The CFA will use this information, together with its assessment of the current condition and prognosis of the emergency on site, to develop or evaluate public protective action recommendations.

Federal departments and agencies that have day-to-day contacts with State counterparts will continue to use these contacts during an emergency. THE SFO will be informed of the contacts that may impinge on the actions of other Federal agencies. The Department of Health and Human Services (HHS), EPA, DOE, and the U.S. Department of Agriculture (USDA), in coordination

with the appropriate State agencies, will provide advice to the CFA, if requested, concerning possible public health impacts and associated protective measures for mitigating them. The CFA will use this advice, as required, to develop a coordinated Federal position on recommendations for public protective action, when requested to do so.

The SFO is responsible for promoting the coordination of the actions of the Federal departments and agencies. The SFO will help to facilitate effective communications among the Federal respondents. The SFO will also coordinate between Federal agencies and the SCO. Finally, through the CFA, the SFO will remain informed of onsite conditions that could have an offsite impact. The SFO's overall coordination function is not intended to replace or supplant existing liaison and communication between Federal departments and agencies and their State counterparts. Rather, the SFO's coordination role is to maintain an overview of Federal actions to help Federal agencies avoid unnecessary duplication or omission of important actions. If Federal agencies need assistance in exchanging information, or in acquiring or releasing public information, the SFO and his staff will help the agencies accomplish these tasks.

The CFA, in conjunction with the SFO whenever possible, will present any Federal recommendations to the State or other appropriate offsite authority responsible for implementing protective actions. In the case of a fixed nuclear facility licensed by the NRC, the licensee is responsible for developing appropriate protective action recommendations and providing those recommendations to State and local authorities. NRC, in the role of CFA, will evaluate the licensee's protective action recommendations and either concur in them or suggest modifications, as appropriate. The SFO is then responsible for promoting coordination among Federal agencies providing assistance to the State in implementing those recommendations if such assistance is requested by the State.

B. General Scheme for Notification, Activation, Recovery Assistance, and Deactivation

FEMA and each CFA will follow a pre-established system for notifying all appropriate Federal agencies.

1. Notification

The owner or operator of the affected facility, carrier, or cargo, (including

nuclear weapons), as the first to become aware of a radiological emergency, is responsible for notifying the appropriate State and Federal authorities.

Some owners or operators use an emergency classification scheme to denote the severity of an incident. These schemes are used by the CFAs to initiate intra-agency notifications and responses. The specific classification scheme to be used with the owner or operator varies with the CFA. For example, in the case of an incident at a commercial nuclear power plant, when the utility notifies the NRC (as CFA), the utility will categorize the incident as: (1) a Notification of an Unusual Event; (2) Alert; (3) Site Area Emergency; or (4) General Emergency. If the CFA uses the owner or operator's classification scheme in its notification to other Federal agencies, the CFA is responsible for explaining the general and incident-specific meanings of those classifications.

Subsequent to its receipt of a notification of an incident, the CFA will notify FEMA headquarters in Washington, D.C. by contacting the FEMA Emergency Information and Coordination Center (EICC) at (202) 634-7800. CFAs maintain similar emergency operation centers at their headquarters, regional, or field offices.

A notification to FEMA should include a description of the emergency situation that is sufficient for FEMA to carry out its further notification and response duties. The CFA will provide FEMA with a general assessment of the emergency including location and nature of the accident, sufficient details to describe the severity of the problem (if known), a description of the CFA's response, and any follow-on actions anticipated by the CFA.

FEMA and CFA will then notify other appropriate Federal agencies of the emergency in accordance with their notification procedures, pre-established interagency agreements, or interagency operational response procedures. For example, in those cases where Federal lands could be affected, procedures will provide for notifying the Federal agency with jurisdiction. The notifications will incorporate relevant information exchanged between the CFA and FEMA. Individual agencies will then determine their initial response actions, if any, and determine their specific requirements for subsequent information, when those requirements have not been predefined with the CFA or FEMA.

DOE will notify Federal agencies with FRMAP responsibilities in accordance with agree-upon procedures. Federal agencies that can provide radiological assistance may respond

upon receiving a direct request for assistance from the State or owner or operator. Federal agencies so contacted will inform the DOE of the arrival of their response team at the scene.

2. Activation

Upon receipt of notification, each agency will assess the need to initiate its response. The response decision will be based on the situation reported and may consist of several steps:

- Activation of appropriate Federal agency response components;
- Activation of agency emergency response teams and their deployment to the scene; and
- Establishment of bases of operation at the scene of the emergency from which to carry out a coordinated Federal response.

A full-scale Federal response begins with the execution of the notification scheme and includes all the above three steps. Since many emergencies will not require a full-scale response, however, the Federal response might reach only the first or second step. When the second or third step is reached an SFO deploys and establishes an offsite base of operation for coordinating the Federal response, i.e., a Federal Response Center (FRC).

As soon as a FEMA Emergency Support Team is activated at headquarters, FEMA assumes responsibility for coordinating the Federal response.

Each Federal agency will decide whether and to what degree to activate its response according to its internal agency procedures and consistent with its responsibilities and role in the overall Federal response. For example, agency responses under FRMAP can be activated without requiring responses by other agencies participating in the FRERP. Once a decision has been made to activate, a Federal agency is encouraged to communicate and interact directly with its counterparts in other Federal and State agencies, recognizing that State agencies will respond first and must be free to communicate with State officials.

If an agency decides to initiate its response, that decision will be communicated to FEMA and will include: (1) The name and location of the lead agency official if one is designated; (2) the telephone number at which he/she can be contacted at headquarters or at the scene; (3) if appropriate, the primary official to deploy to the scene and his/her estimated time of arrival at the emergency site; and (4) intended location at the scene. Similarly, FEMA

will provide each Federal agency with the same information when FEMA designates its SFO.

Because of its singular responsibility for Federal support on site, the CFA will determine and implement an efficient means for coordinating Federal support on site with Federal response activities off site. In particular, CFA coordination procedures will be implemented, these procedures concern the coordination of the CFA's activities with those Federal agencies with which it has an interface responsibility off site.

a. Deployment of Emergency Response Teams

Agency plans and procedures describe response team deployment and establishment of bases of operations at the scene. Ideally, the SFO and staff, other Federal agency response teams, and State agency representatives would be co-located at the scene, but many State plans do not reflect this concept. Accordingly, FEMA and CFA site-specific emergency plans and procedures should be flexible enough to accommodate State operations. Some Federal agencies may immediately deploy their teams to the scene of the emergency to fulfill statutory authorities and responsibilities. This plan is not intended to restrict such activities; however, when the SFO arrives at the scene, the agencies that have already responded will inform the SFO of the offsite actions they have taken.

b. SFO Designation and Deployment

Upon activation, FEMA may deploy an Emergency Response Team (ERT) headed by an SFO and composed of one staff component from the appropriate FEMA region and another staff component from FEMA headquarters. The SFO, once at the scene, will be supported by an Emergency Support Team at FEMA headquarters as well as by the ERT staff accompanying him/her. Prior to this deployment, the FEMA region will inform the State of the planned FEMA response. FEMA will also advise the CFA of these actions.

Upon arrival at the scene, the SFO, or the Deputy SFO (DSFO) if the SFO so authorizes, will establish an offsite base of operations, i.e., the Federal Response Center, for promoting coordination of the Federal response. The Deputy SFO, who leads the regional component, is likely to arrive at the scene prior to the arrival of the headquarters component and may have initial responsibility for establishing and operating the FRC until the SFO arrives. The SFO will inform other Federal agencies at the emergency scene of the establishment of the FRC.

and request that they provide representation to it. The SFO will establish communications with the CFA to determine the status of onsite Federal response efforts. Other Federal agencies that have responded will inform the SFO and the CFA of their response efforts as soon as communications have been established.

Once the FRC has been established at the scene, the SFO assumes responsibility from FEMA headquarters for promoting the coordination of the Federal response at the scene. The SFO and the Cognizant Federal Agency Officer (CFAO) at the scene will work together closely to ensure that each has an accurate understanding of the situation throughout the emergency.

3. Recovery Assistance and Response Deactivation

Prior to the deactivation of the Federal response, the Federal government will assist the State, as requested, in developing an offsite recovery and restoration plan. The CFAO, in coordination with the SFO and other Federal agencies, as appropriate, will recommend in the plan those recovery actions to be taken once the immediate public health and safety and property protecting actions have been accomplished. More specifically, the plan may include actions necessary for decontamination and clean-up, offsite restoration, population re-entry, provision of hardship assistance, and any other long-term recovery actions. In short, the plan describes all actions necessary to restore the affected area to its pre-emergency condition, wherever practical. The offsite recovery and restoration plan will also identify the roles, if any, of the CFA, FEMA, and other Federal agencies in helping the State and owner or operator to implement the plan.

Each agency will discontinue response operations upon request by the State or when its statutory responsibilities have been fulfilled. Agency response deactivation will be carried out in coordination with the CFA and FEMA.

C. General Response Roles of Principal Agencies and Officials

General responses roles are those that independent of the cause, type, or location of the radiological emergency.

1. Role of the Cognizant Federal Agency

The CFA is the Federal agency that owns, authorizes, or regulates the facility, carrier or cargo (including nuclear weapons), containing the radioactive materials causing the emergency. When it is necessary for the

CFA to deploy to the site, the CFA's role is to manage all Federal actions onsite, develop or evaluate protective action and re-entry recommendations, and help to implement those actions if requested by State and if the CFA's resources permit.

Consistent with this role, the CFA has four general responsibilities:

- Receive notification of the emergency, initiate the CFA response, and notify appropriate Federal, State, and local agencies;
- Manage Federal response actions on site and coordinate these actions, as necessary, with the SFO and monitoring activities off site;
- Assess owner or operator, State, or locally recommended protective action measures and/or develop Federal recommendations for protective action and re-entry; help State and local authorities as resources permit; and
- Serve as the primary Federal source for information of a technical nature regarding the onsite emergency conditions and the potential or real offsite radiological effects.

Each of these responsibilities is outlined in more detail below:

a. Receive Notification of the Emergency, Initiate the CFA Response, and Notify Appropriate Federal Agencies

(1) Receive notification of the emergency from the owner or operator of the affected facility, carrier, or cargo and determine the emergency classification of significance of the emergency and the appropriate CFA response to it.

(2) Notify FEMA and DOE of the emergency; include in the notification the CFA's activation mode and actions, a general assessment of the emergency, and any necessary background information.

(3) Deploy a CFA team to the site, when appropriate.

b. Manage Federal Response Actions On Site

(1) Designate a lead CFAO at the site of the emergency who will coordinate with the SFO, as necessary, any onsite Federal actions that may have significant impacts off site.

(2) Establish appropriate bases of operation to oversee the onsite response, monitor owner or operator activities, provide technical support to the owner or operator if requested, and serve as the principal source of information about onsite conditions for the Federal government.

(3) Manage the onsite Federal response to the emergency, including an assessment of the conditions on site and the means for mitigating their consequences off site.

(4) Keep other agencies informed of conditions and Federal actions on site.

c. Protective Action and Re-entry Recommendations

One of the primary areas where the Federal government can assist State and local governments is in assessing protective action and re-entry recommendations (PARs) developed by the owner or operator, State, and local authorities. In some cases the CFA may develop Federal PARs independently. For example, when the owner or operator is organizationally a part of or is authorized by the CFA, the CFA may develop PARs independently. In providing an assessment or developing a Federal recommendation, the CFA will use, to the extent practicable, appropriate advice and input from other Federal agencies with technical expertise on those matters. FEMA, upon request, will assist the CFA as required in its evaluation or development of protective action and re-entry recommendations. Agencies with potential input to the evaluation or development of PARs will use the operational procedures they have developed with CFAs to provide such input.

Similarly, whenever possible, the CFA will coordinate its presentation of comments on PARs with FEMA either prior to, or at the time of, their presentation to the State or other offsite authorities. When imminent peril threatens the public health and safety, the CFA will present comments on PARs directly to the State or other offsite authorities without having to coordinate with any other Federal agency. More specifically, the CFA's responsibilities related to PAR development, and presentation are:

(1) Serve, as required, as a point of contact for State and local government technical impact information and other technical assistance requests.

(2) Provide staff liaison representatives to State authorities and the SFO, if requested, to help interpret the technical aspects of the emergency on site and its potential or real offsite radiological consequences.

(3) Work with DOE in its efforts to provide offsite monitoring data and assessments to appropriate State and Federal agencies.

(4) Prepare a coordinated Federal position on protective action and re-entry recommendations whenever

possible. Consult with HHS, DOE, EPA, USDA, and other Federal agencies as required.

(5) When appropriate, present the Federal assessment or recommendations, in conjunction with the SFO, to the State or other offsite authorities.

(6) Help State and local government agencies implement protective actions, as required, when the CFA has available resources to help provide the needed assistance.

d. Serve as the Primary Source for Technical Information Regarding the Emergency Conditions On Site and the Potential or Real Offsite Radiological Effects

(1) Make an initial report to the White House Situation Room covering, if possible, the condition of the affected facility, carrier, or cargo and the actual or potential offsite radiological impact. In coordination with FEMA, keep the White House informed of onsite conditions and actual or potential offsite radiological impacts.

(2) Review and concur in the release of all Federally generated information related to the onsite conditions and remain informed of all information related to offsite radiological effects. Where possible, the CFA should review Federally provided offsite radiological data before release.

(3) Assist the State Public Information Officer in developing coordinated public information releases.

(4) Protect national security by classifying sensitive technical information in a nuclear weapon accident or weapon-significant incident.

2. Role of the Federal Emergency Management Agency

FEMA's primary responsibilities in the Federal response are to notify participating Federal agencies of the emergency and to serve as a focal point for coordinating Federal response activities at the national level. The Director of FEMA will designate and deploy the SFO for coordinating Federal response activities at the scene of the emergency.

a. Emergency Support Team Role

Through its Emergency Support Team at headquarters, FEMA will:

(1) Notify participating agencies of the emergency situation and supply information they need to take appropriate actions.

(2) Coordinate Federal response activities at the national level.

* Except the CFA (which is notified directly by the owner or operator) and DOE (which is notified by the CFA or the owner or operator or the State).

(3) Receive information at the Emergency Information and Coordination Center (EICC) from the CFA and other public and private organizations about the impact of the emergency and the organizations' response.

(4) Prepare periodic reports on the Federal response for the White House.

(5) Provide staff support and other resources to the SFO as required.

b. Emergency Response Team Role

At the scene of the emergency, the FEMA response is carried out through its Emergency Response Team, headed by the SFO. The SFO coordinates Federal activities with State offsite activities and promotes the coordination of Federal actions, information, and recommendations. Free interaction among Federal, State, and local agencies is encouraged. The SFO can facilitate information flow among all response elements and help to direct Federal resources to the appropriate State and local government agencies. The SFO will not intervene in the relationships and communications channels that already exist between Federal and State agencies; rather, the SFO provides an additional means for facilitating Federal-State interactions.

The SFO has three major responsibilities:

- Promote coordination among Federal agencies and their interactions with the State, including, in conjunction with the CFA, the provision of Federally developed or evaluated protective action recommendations to the State or other appropriate offsite authorities responsible for implementing public protective actions.
- Coordinate offsite activities with onsite response activities of the Federal agencies; and
- Serve as an information source on the status of the overall Federal response effort. (The public information function is described in Section D.)

Each of these responsibilities is outlined below:

(a) Promote Coordination among Federal Agencies and Their Interactions with the State:

(1) Promote coordination of the provision of offsite assistance to State and local government agencies by the Federal agencies, including medical care, food, potable water, shelter, clothing, transportation, security, and any other assistance needed to protect the public health and safety. This coordination function is to be performed in addition to, and does not supplant, the specific coordination functions

assigned to other Federal agencies as part of their normal responsibility to provide these specialized forms of assistance.

(2) Establish the Federal Response Center as a base of operations near State operations at the scene of the emergency that can serve as a focal point for Federal response team interactions with the State.

(3) Provide the principal point of contact for State and local government requests for Federal assistance.

(4) Refer all State and local requests to the most appropriate Federal agency.

(5) Refer all Federal agencies to appropriate points of contact in State and local government.

(6) Provide information to the State and local government concerning the status of their assistance requests.

(7) Maintain contact with DOE or EPA to ensure that the offsite Federal radiological monitoring and assessment effort is coordinated with other offsite Federal assistance to the State.

(8) Facilitate the exchange of all other information among Federal agencies.

(9) Make requests through FEMA headquarters for additional Federal resources that cannot be acquired by Federal agencies at the scene.

(10) Refer all interagency policy issues and interagency operational problems that cannot be resolved at the scene to FEMA headquarters for resolution with Federal agencies at the national level.

(11) Promote the provision of information from Federal agencies to the State regarding actions taken or anticipated by them.

(12) Promote the coordination of all formal recommendations and guidance from Federal agencies before they are presented to the State.

(b) Coordinate the Federal Offsite Response with the Federal Onsite Response:

(1) Promote the coordination of the Federal offsite response with the Federal onsite response so that any Federal actions off site are taken with full knowledge of current or anticipated Federal actions on site.

(2) Assist and support the CFA, as required, with obtaining needed logistical support through other Federal agencies.

(3) Assist the CFA, as required, in its development or evaluation of protective action recommendations including the provision of needed information to or from other Federal agencies having the required expertise.

(4) Ensure that the CFA is informed of the capabilities and resources of offsite Federal agencies for assisting with the implementation of Federally

recommended public protective actions by the State or other offsite authorities.

(5) Assist the CFA and DOE or EPA, as FRMAP coordinator, in disseminating information to, and obtaining information from, other Federal agencies. Facilitate the exchange of all other information among Federal agencies.

(6) Participate in the presentation of a Federally coordinated assessment of the set of protective action recommendations to the State or other responsible offsite authorities in conjunction with the CFAO. When the public health and safety are in imminent peril, the CFAO will present recommendations without consultation with the SFO or other Federal agencies.

(c) *Serve as an Information Source for the Total Federal Response:*

(1) Provide periodic reports on the Federal response to the White House Situation Room as requested, but at least daily. The SFO, in coordination with the CFAO, will maintain an executive level summary of the total Federal response and will provide all subsequent reports to the White House. The SFO's summary will ensure that the White House receives a comprehensive and complete report on the Federal response. This SFO activity does not preclude the White House from contacting any agency for information, nor does it restrict an agency from responding to White House requests. The CFA will remain the source for technical information on the emergency, i.e., the onsite conditions and the potential or real offsite radiological impacts.

(2) Provide information in coordination with the CFA on the status of the Federal response to members of Congress and their staffs both in Washington and in the field when requested.

3. Role of DOE and EPA

The Department of Energy^{*} and the Environmental Protection Agency have a major role in the Federal response by coordinating Federal radiological monitoring and assessment activities. There are three responsibilities involved, which initially fall to DOE. They are:

- Coordinate the offsite radiological monitoring, assessment, evaluation, and reporting of all Federal agencies during the initial phases of the emergency, including notification of

^{*} DOE would also serve as the CFA if the emergency involved DOE owned or authorized nuclear facilities, carriers, or cargo (including weapons in DOE custody).

Federal agencies in accordance with the provisions of the FRMAP;

- Maintain liaison and a common set of offsite radiological monitoring data with the facility owner or operator and State and local agencies with similar responsibilities; and
- Provide these data and any interpretations to the CFA and appropriate Federal, State, and local agencies, and assist the CFA in its development or evaluation of recommendations for public protective actions and re-entry recommendations, as required.

After the initial phases of the emergency, DOE will transfer these coordination responsibilities to EPA at a mutually agreeable time. EPA will assume the lead agency responsibility for coordinating the intermediate and long-term offsite radiation monitoring activities only after receiving adequate assurance from the Department of Energy and other Federal agencies that they will commit the required resources, personnel, and funds for the duration of the Federal response effort. After this transfer occurs, EPA will coordinate Federal radiological monitoring and assessment activities.

D. Public Information and Congressional Relations

This section describes the responsibilities for Federal agency public information and Congressional relations that will be implemented under this plan.

1. General Public Information Responsibilities

The major roles and responsibilities for public information release during a radiological emergency are as follows.

- The facility operators* are responsible for information on facility status and conditions.
- The State* is responsible for releasing information relating to the impact of the emergency on the health and safety of its citizens and its emergency response operations.
- The CFA*, through the CFAO's Public Information Officer (PIO), and in conjunction with the owner or operator, is responsible for information related to: (a) The onsite conditions of the affected facility, carrier, or cargo and (b) the offsite radiological effects. The CFA is responsible for the security classification of all onsite information in accidents or significant incidents involving nuclear weapons.
- Each Federal agency* is responsible for the preparation of public information releases related to its own response activities. Prior to release, information will be coordinated through the public

information organizations described in the remainder of section D.

e. *FEMA*, through the SFO's PIO, will work with the CFAO's PIO to promote coordination among all Federal agencies regarding public information generated by them and to promote the coordination of press releases with the State. Coordination does not mean that the language of all releases must be approved by the SFO and CFAO PIOs, but rather that the information content is to be reviewed by them prior to release to ensure its consistency with the total information available. In cases when the public health and safety are in imminent peril, the CFAO's PIO may review and release public information independently.

2. Coordinated Release of Public Information at the Scene of the Emergency

Upon arrival at the emergency scene, the CFAO's PIO will establish Federal public information operations at the Joint Information Center (JIC) in cooperation with the owner or operator's pre-established information center, or separately if necessary. The JIC at the scene of the emergency will provide the public and the media with adequate, accurate, and timely public information regarding a radiological emergency. All Federal PIOs will collocate, and efforts will be made to collocate the Federal PIOs with State, local, and owner or operator public information officials in this center as well. Most nuclear power reactor owner or operators have designated JIC locations and have made arrangements to establish and operate these centers in an emergency. Federal PIOs should work within these centers, if possible.

When it is not feasible to establish a single public information center, more than one information center may be used. In such cases, special efforts will be necessary to maintain close coordination between the various press centers and the State's public information center.

The establishment of Federal operations at the JIC will be undertaken in coordination with FEMA, other appropriate Federal agencies, and State and local authorities, when practicable. If FEMA's PIO or any other participating agency's PIO arrives at the scene of the emergency before the CFAO, the FEMA PIO or another agency's PIO may establish and manage Federal operations at the JIC until the CFAO arrives. Upon arrival, the CFAO will assume primary Federal government responsibility for Federal operations at the JIC. The CFAO's PIO will work with

FEMA's PIO to promote the coordination of Federal public information releases. The responsibility for Federal activities at the JIC may be transferred to FEMA, if agreed to by the CFAO's PIO at the scene and FEMA's PIO, at a mutually acceptable time.

3. Coordinated Release of Public Information at the Headquarters Level

For some emergency situations it may be necessary to release public information prior to the establishment of Federal operations at the JIC. When this is the case, Federal agencies must coordinate the release of public information through their headquarters with the CFA headquarters PIO. The CFA headquarters PIO who serves as the single point of contact at the national headquarters level for all Federal agency PIOs as well as for the media. The CFA headquarters PIO, in conjunction with FEMA, will establish procedures for the coordinated release of Federal public information to the media.

Prior to the establishment of Federal operations at the JIC, Federal agencies will coordinate releases of public information both at the regional level and near the site of the emergency through their Washington, D.C. headquarters offices.

The agency headquarters points of contact for public information will continue to operate, but once the JIC is established, all Washington-based information must be coordinated through the JIC prior to release. The Washington centers may, however, handle overflow news media inquiries and serve as a platform for carefully selected, Washington-based specialists to supply background information, as required.

4. Coordinated Release of Information to Congress

Responses to Congressional requests for information will be coordinated among the Federal agencies whenever possible. The CFA Congressional Liaison Officer (CLO) at the headquarters Congressional Affairs Office will provide a single point of contact for all Federal agency CLOs and Congressional staffs seeking site-specific emergency information. As time and circumstances allow, all agency CLOs will either channel Congressional requests to this single point of contact, or coordinate their intended responses with it. If required, a Congressional relations operation at the headquarters level may be established.

Once the SFO is deployed to the scene, (s)he will arrange for his/her CLO to meet at appropriate intervals

with area Congressional field staffs. In conjunction with the CFAO's CLO, the SFO's CLO will brief them on the situation.

This formal procedure does not preclude communication and information exchange between Congressional representatives and Federal agencies. However, Federal responses will be coordinated among Federal agencies in the manner described.

III. Federal Radiological Monitoring and Assessment Plan (FRMAP)

A. Foreword

To coordinate offsite radiological assistance under the FRERP, the U.S. Department of Energy (DOE) developed the Federal Radiological Monitoring and Assessment Plan (FRMAP). The FRMAP, required under a Federal Emergency Management Agency regulation issued on March 11, 1982, is a revised and updated version of the planning and response concepts of the Interagency Radiological Assistance Plan (IRAP). The IRAP was originally published in 1961 to provide Federal technical assistance and response to radiological emergencies. FRMAP and IRAP are very similar in concept, with the most notable changes occurring in the designation of participating Federal agencies and, in some cases, their expanded or revised responsibilities, e.g., FEMA. The FRMAP deals with the initiation and coordination of Federal radiological monitoring and assessment assistance, not each Federal agency's individual response.

The FRMAP establishes: (a) A means of requesting and providing Federal radiological assistance from existing Federal resources and (b) an operational framework for coordinating the radiological monitoring and assessment activities of Federal agencies during radiological emergencies occurring within the United States and its territories. The operational guidelines presented here apply to all radiological emergencies in which Federal assistance is requested.

At one end of the range of radiological emergencies, the FRMAP may be implemented without the FRERP. At the other end of the range, the radiological assistance provided through FRMAP may be only a small portion of the total Federal response to a major emergency. FRMAP applies primarily to offsite Federal radiological monitoring and assessment assistance and the technical support for these activities.

B. Purpose

The purposes of the FRMAP are as follows:

- To make needed radiological monitoring and assessment assistance available to the general public, State and local governments, and Federal agencies;
- To provide a framework through which Federal agencies will coordinate their emergency radiological monitoring and assessment activities in support of Federal, State, and local governments radiological monitoring and assessment activities; and
- To assist State and local governments in preparing for radiological emergencies by describing Federal assistance responsibilities and capabilities.

C. Authority and Jurisdiction

DOE is assigned the responsibility for developing the FRMAP under authority of 44 CFR Part 351. The FRMAP is included in the FRERP to provide a single, comprehensive document that describes all Federal offsite assistance responsibilities. The agencies participating in the FRMAP, including agencies that joined FRMAP subsequent to 44 CFR Part 351, are: FEMA, the Nuclear Regulatory Commission (NRC), the Environmental Protection Agency (EPA), the Department of Health and Human Services (HHS); the Department of Energy (DOE); the Department of Agriculture (USDA); the Department of Defense (DOD); the Department of Commerce (DOC); and the Department of the Interior (DOI).

The FRMAP recognizes that the above agencies may have other radiological planning and emergency responsibilities as part of their statutory authority, as well as established working relationships with State counterpart agencies. The provisions of the FRMAP do not limit those responsibilities, but complement them by providing for a coordinated Federal response when emergency radiological assistance is requested. All FRMAP activities will support the monitoring and assessment programs of the State and those of the owner or operator of the radiological activity.

D. Policy

1. Federal agency plans and procedures for implementing the FRMAP will be consistent with any radiological emergency planning requirements for State and local governments and specific facilities.

2. The participating Federal agencies will maintain facilities, equipment, and personnel to carry out their statutory responsibilities. Existing radiological monitoring and assessment capabilities developed to carry out those responsibilities will be made available to State and local authorities, other Federal agencies, and to the general public in an emergency if other resources are not available.

3. The Federal agencies will make their resources available on request. An agency may decline to provide resources only if doing so would prevent that agency from carrying out its essential missions and emergency functions.

4. During the emergency phase of the Federal response, the DOE will coordinate all Federal radiological monitoring and assessment operations and integrate the data derived from those activities. EPA will assume the lead agency responsibility for coordinating the intermediate and long-term offsite radiation monitoring activities only after receiving adequate assurance from the Department of Energy and other Federal agencies that they will commit the required resources, personnel, and funds for the duration of the Federal response effort. The full FRMAP response will be terminated when the EPA Administrator determines, after consultation with the CFA and State and local officials, that there is no longer a threat to the public health and safety to the environment, or that State and local resources are adequate for the situation, or, when the Federal agencies are carrying out only non-emergency statutory responsibilities.

5. An agency that makes its resources available, although under the general direction of DOE (or later, EPA), does not place itself under the authority of the coordinating agency.

6. The DOE (or later, EPA), will maintain a common and consistent set of all offsite radiological monitoring data and provide it, with interpretation, to the Cognizant Federal Agency, to the State, to Federal agencies having appropriate statutory authorities, and to other groups as required.

7. The Federal radiological monitoring and assessment response will be in support of, and coordinated with, that of the State and local governments. The resources of DOE and the participating agencies will be used only when State and local resources are not adequate. All offsite activities will be coordinated with those of the State.

8. Federal assistance will be initiated when the Federal Radiological Emergency Response Plan is activated, or through a request from a State or

local government, another Federal agency or private entity, or (in rare cases) when DOE, after notification of an incident, but in the absence of an activation by the FRERP or State request, believes there is a possibility of a hazard.

9. Federal agencies, to the extent possible, will assist other Federal agencies and State and local governments with planning and training activities designed to improve local response capabilities, and will cooperate in drills, tests, and exercises.

10. Appropriate independent emergency actions may be taken by the participating Federal agencies on their own authority to save lives, minimize immediate hazards, and to gather information about the emergency that might be lost by delay. Such action will not preempt later implementation of the FRMAP.

11. Funding for each agency's participation in support of the FRMAP is the responsibility of that agency unless provided for by other agreements.

E. Maintenance and Revision

The Interagency Committee on Radiological Assistance (ICRA), consisting of representatives from each of the participating agencies, will serve as the continuing coordinating body for the FRMAP. This committee will interpret, maintain, and update the FRMAP. Changes to the plan will be made through ICRA and must have the approval of DOE and any other participating agencies affected by the change. ICRA will also provide a means for coordinating response capabilities, training activities, exercises, and research and development pertinent to the FRMAP. The DOE representative will serve as ICRA chairman. An ICRA meeting will be held at least once each year, with supplemental meetings as needed.

Each agency will report periodically to the ICRA on its radiological response capabilities, training programs, and any research and development activities designed to improve its response.

F. Organization

1. General Principles

The FRMAP addresses the coordination of the participating agencies' support of offsite monitoring and assessment efforts. The organization of the FRMAP emergency response and the roles of some agencies under FRMAP will depend on the specific emergency, but will follow the principles outlined in the Federal Radiological Emergency Response Plan. Information generated from the FRMAP

response is provided to the CFA and to the appropriate State authorities.

2. Involvement of Non-Participating Agencies

In some cases, other Federal agencies may become involved with FRMAP activities. The State Department would be involved if the emergency affected areas outside United States territory and monitoring efforts needed to be coordinated across an international border. The Federal Bureau of Investigation (FBI) would have the principal role in the investigation of all emergencies where terrorism or deliberate release of radioactive materials is suspected or in cases of threats against nuclear facilities or materials. The major FBI interfaces, however, are expected to be with the CFA and FEMA. Even when the FBI is involved, DOE/EPA will coordinate monitoring functions with their State counterparts.

3. Coordination of a Limited Response

The FRMAP recognizes that the appropriate response to a request for Federal radiological assistance may take many forms, ranging from advice given by telephone to a large Federal monitoring and assessment operation at the scene of a serious emergency. Most of the following guidelines for participating agencies are designed for the latter situation, but the FRMAP is also applicable to lesser incidents where a limited response, possibly by DOE alone, is sufficient.

G. Responsibilities of Participating Agencies

1. Responsibilities During Emergencies

Cognizant Federal Agency: The CFA's primary emergency response responsibilities are stated in the previous chapter at C.1. The CFA will also contribute to the FRMAP as follows:

- Ensure that DOE, State, and local officials are notified quickly of a radiological emergency;
- Provide pertinent onsite technical and radiological data to the DOE Off Site Technical Director (OSTD) and State and local officials;
- Utilize FRMAP data, as appropriate, to develop technical recommendations on protective measures if the facility operator's recommendations are considered inappropriate or insufficient.

Department of Energy: DOE's offsite responsibilities are:

- Coordinate the offsite radiological monitoring, assessment, evaluation,

and reporting activities of all Federal agencies during the initial phases of an emergency while maintaining technical liaison with State and local agencies with similar responsibilities.

- Provide the personnel and equipment required to coordinate and, in cooperation with other Federal components, to perform the offsite radiological monitoring and evaluation activities.
- Request supplemental radiological monitoring assistance from other Federal agencies when needed, when requested to do so by the State, or if considered necessary to maintain the credibility of the offsite assessment.
- Request meteorological, hydrological, geographical, etc., data needed for monitoring and assessment efforts.
- With other appropriate agencies help the CFA to assess the accident potential and to develop technical recommendations on protective action.
- Maintain a common set of all offsite radiological monitoring data and provide these data and interpretation to the CFA and other appropriate Federal, State, and local agencies requiring direct knowledge of radiological conditions.
- Provide consultation and support services to all other entities (e.g., private contractors) with radiological monitoring functions and capabilities.
- Help HHS and other Federal, State, and local agencies by providing technical and medical advice about the treatment of radiological contamination.
- Assist the other Federal, State, and local agencies in early planning for decontamination and recovery of the offsite area and make recommendations to avoid the spread of contamination by improper emergency operations.
- Provide telecommunications support to Federal agencies assisting in offsite radiological monitoring, if necessary.
- Ensure the orderly transfer of responsibility for coordinating the intermediate and long-term radiological monitoring function to EPA at a mutually agreeable time after the initial phases of the emergency if the need for Federal radiological assistance continues.

The DOE Emergency Action and Coordination Team (EACT) at DOE headquarters authorizes the appropriate DOE response for the FRMAP.

Environmental Protection Agency: EPA will assume the lead agency responsibility for coordinating the intermediate and long-term offsite radiation monitoring activities only after

receiving adequate assurance from the Department of Energy and other Federal agencies that they will commit the requested resources, personnel, and funds for the duration of the Federal response effort. Once the transfer of coordination responsibilities are transferred from DOE to EPA, EPA will assume the DOE role described above except for providing technical and medical advice about treatment of radiological contamination. Prior to assuming coordination responsibility, EPA will function as one of the other participating agencies.

Federal Emergency Management Agency: FEMA has a major role in all situations involving a multi-agency response. In addition to coordinating the offsite (non-technical) response under the FRERP, FEMA may contribute to FRMAP in these ways:

- Obtain telecommunications and logistical support for agencies participating in monitoring and assessment; and
- Provide monitoring assistance to DOE or EPA if requested.

Other Participating Agencies: Each participating agency will carry out its statutory responsibilities and any other responsibilities under the FRERP, if the FRERP is implemented, during the course of the radiological emergency. All radiological monitoring and assessment activities conducted as part of the statutory responsibilities will be coordinated with the other participating agencies through DOE and later, EPA. Each agency will make its radiological resources and capabilities available to the Federal assistance operations to the maximum extent possible.

2. Responsibilities for Training and Exercises

To improve the response capability of the participating agencies and the State and local personnel with whom they interact, the FRMAP encourages the development of training materials and presentation of training sessions by all agencies and at all levels. Radiological emergency response training should be oriented toward ensuring proper emergency actions at the scene of a radiological emergency, informing the public, and effecting a prompt return to normalcy. In addition to agency personnel, personnel who may be trained, include those likely to be at the scene of the accident, such as personnel of a fixed nuclear facility, personnel providing emergency services, those experts responding to calls for radiological assistance, and local authorities who need to work with State and Federal emergency radiological

assistance personnel. Federal assistance in training State and local government personnel is available through FEMA (under 44 CFR Part 351), using the technical expertise and resources of other FRMAP agencies.

Exercises of the FRMAP aspect of the FRERP are encouraged among Federal, State, and local agencies. Exercises may occur independently or in conjunction with other exercises, such as State/facility emergency plan exercises or exercises of the FRERP. Each agency should coordinate its training programs and exercises through the Federal Radiological Preparedness Coordinating Committee (FRPCC) and ICRA to avoid duplication and to make its training available to other agencies. Each agency is encouraged to furnish training materials and training assistance, if feasible, when requested by other agencies.

H. Categories of Emergencies

Three categories or types of emergencies have been previously described in the FRERP. Each type of emergency may present different types of response problems.

Fixed nuclear facilities, including nuclear power reactors, have the advantages of known locations and existing site-specific emergency plans. Classifications of incident severity have been developed for many of these facilities, and the level of FRMAP response may be guided by these classifications. The NRC has adopted four categories for incidents at commercial nuclear power plants: Notification of Unusual Event; Alert; Site Area Emergency; and General Emergency. DOD and DOE have chosen the same four categories for their nuclear facilities, although the type of possible incident would depend on the type of facility. In general, for facilities using these categories, offsite monitoring and assessment activities would be expected only during a Site Area Emergency or a General Emergency. Substantial offsite radiological problems would be expected only during or following a General Emergency condition. Mobilization and activation could occur under an Alert if degradation of the level of safety at the facility or other conditions (public concern, unfavorable weather, lack of resources) warrant such action.

Response to transportation accidents is more difficult to plan, as such accidents may occur anywhere, may involve a variety of radioactive materials, and may present no hazard or serious threat. In most cases, State

resources or a limited Federal response will suffice.

A nuclear weapon accident or weapon-significant incident overlaps the above two categories in response characteristics. Weapons incidents are most likely to occur at DOD fixed facilities or as the result of a transportation accident.

The category of "other incidents" contains events that do not fit the other two categories. For many of these events, a limited response by DOE alone or with the assistance of another agency will be sufficient. The CFA will be designated in accordance with the FRERP guidelines.

I. Operating Procedures

1. Notification and Activation

Notification of DOE and other participating agencies may occur through an alert to a possible problem or a request for radiological assistance. DOE will maintain national and regional coordinating offices as points of access to Federal radiological emergency assistance and response. Requests for Federal radiological assistance will generally be directed to the appropriate DOE Radiological Assistance Regional Coordinating Office. An exception to this is a request from the DOD, which will be made through the DOD-DOE Joint Nuclear Accident Coordinating Center (JNACC) at Kirtland AFB in Albuquerque, New Mexico. Requests might also go directly to DOE's Emergency Operating Center (EOC) in Germantown, Maryland.

Requests for radiological assistance may come from other Federal agencies, State or local governments, licensees for radioactive materials, or the general public. Appropriate requests may also be referred by DOE by the National Response Center, which is operated by the U.S. Coast Guard primarily to receive reports of accidental discharges of petroleum products, and the Chemical Transportation Emergency Center (CHEMTREC), an emergency assistance center sponsored by the Chemical Manufacturers Association.

Although activation of a response under the FRMAP can occur at the request of other agencies, authorities, and coordinating centers, a State request for assistance should be obtained before major offsite operations begin.

The DOE regional office may respond by dispatching a Radiological Assistance Program (RAP) team, by requesting assistance from a regional office of another participating agency, or by referring the request to an appropriate State agency that can

provide prompt assistance. In addition, the DOE regional office will notify the Director of DOE's Emergency Action and Coordination Team (EACT) through the Emergency Operating Center (EOC) when the DOE regional office needs assistance or has responded to a request for assistance. EACT may choose to alert or activate major DOE response resources. If the initial request comes directly to the EOC, its staff will alert or dispatch a RAP team from the appropriate regional office.

The DOE EOC will notify other appropriate agencies participating in the FRMAP if significant Federal involvement may be required or to request their assistance. DOE, in its role as coordinator, may choose to contact or may be contacted by any of the participating agencies, but the FRMAP is not intended to provide the primary source of general information about an incident.

Notification of FRMAP agencies may be delayed or omitted if necessary to avoid interfering with investigations of threats against nuclear facilities or materials. In some cases, notification may be made, but information not critical to the monitoring and assessment activities can be restricted by an ongoing criminal investigation. Restrictions on classified information may also prevent total disclosure to other participating agencies.

2. Coordination at the Emergency Scene

The DOE's Emergency Action and Coordination Team (EACT) at headquarters will designate an initial Off Site Technical Director (OSTD) for any emergency requiring more than a limited Federal response. The OSTD ensures that the DOE responsibility for coordinating offsite monitoring and assessment is met. Upon arrival at the scene of the emergency, the OSTD will contact the State or local agency responsible for radiological monitoring and the senior officials of the CFA, FEMA, and EPA present at the emergency scene.

The person designated as OSTD may vary as the nature and degree of response change. For example, the OSTD will generally be the RAP team captain during the early response. As additional resources or additional RAP teams arrive, EACT may designate a higher-level official from a regional office or an official from DOE headquarters as OSTD. DOE will notify the appropriate participating agencies when these designations are made. In emergencies where DOE is also the CFA or has onsite responsibilities by agreement, the OSTD will coordinate the FRMAP activities, reporting to the

CFAO through the designated DOE Team Leader.

The OSTD is responsible for establishing a Federal Radiological Monitoring and Assessment Center (FRMAC) to be used as a coordination center for Federal monitoring efforts. This center need not be located near the emergency site or the FEMA-State operations centers as long as its actions can be coordinated with those centers. In some instances, the FRMAC location may have already been chosen and included as part of the State or local emergency plan. The location of the FRMAC will be reported to the CFA, FEMA, and State officials at the scene, and DOE headquarters will inform the headquarters of appropriate participating agencies.

The DOE OSTD will work closely with the EPA radiological response coordinator to facilitate a smooth transition of the coordination responsibility to EPA at a mutually agreeable time. It is difficult to specify in advance when this transfer could occur, but it would generally be expected to take place after the immediate emergency situation is stabilized, offsite releases of radioactive material have ceased, and the offsite radiological conditions have been documented and their consequences have been assessed. In the case of an accident at a nuclear power plant, for instance, the transfer of responsibility might be set at a mutually agreeable time after the NRC has determined the plant to be in stable condition.

After this transfer, a person designated by EPA's Office of Radiation Programs will serve as the OSTD and will assume the responsibilities of the DOE OSTD. Other participating agencies will be responsible for coordinating their monitoring activities through the EPA OSTD as long as the FRMAP response continues.

3. Public Information

Public information activities relative to FRMAP operations will be coordinated in accordance with the FRERP. Each participating agency is responsible for preparation of press releases about its own response activities in support of FRMAP. However, information for the public about the results of the Federal radiological monitoring should be coordinated through the CFA and FEMA. The participating agencies may supply public information personnel or technical experts to assist the CFA, FEMA, or State in their public information efforts.

Security considerations may restrict information available when classified clear material or facilities are involved. Information may also be temporarily withheld from the public in emergencies involving terrorism or sabotage to avoid interfering with an ongoing criminal investigation.

When the Federal response is limited, public information may be handled locally by appropriate Federal or local officials.

4. Congressional Information

Responses to Congressional requests for information will be coordinated among the Federal agencies as provided for in the FRERP. In particular, questions about the emergency, its expected consequences, or the results of the FRMAP activities should be referred to the CFA or answered only after consultation with the CFA. Congressional Liaison Officers and representatives of participating agencies may also participate in coordinated briefings.

5. Reimbursement

As stated in Section D, funding for each agency's participation in support of FRMAP is the responsibility of that agency, unless other agreements are in effect. This will be the case regardless of whether the activities were initiated by statutory responsibilities or by the request of another agency.

J. Supporting Agreements

Several interagency agreements have been signed that pertain to the offsite monitoring and assessment activities covered by FRMAP. Additional agreements may be concluded with the approval of the signatory agencies if ICRA determines that they are applicable to FRMAP. Authority for each agency's role during a radiological emergency is contained within the authorities cited in each agency's response plan summary in the following chapter.

IV. Federal Agency Interfaces and Response Plan Summaries

To facilitate the coordination of Federal agency response actions, this section lists and defines Federal agency interfaces, those activities for which two or more agencies have related responsibilities. The efficiency and effectiveness of the Federal response is enhanced when agencies act in accordance with these mutual interfaces. This section also contains summaries of the response plans of the participating Federal agencies, which provide agency mission statements, contact points for notification, Federal

interfaces, plan references, and sources of authority.

A. Federal Agency Interfaces

Federal agency interfaces are necessary for a coordinated Federal response. These interfaces, describing how various Federal agencies will work together, are the planning elements that promote coordination in the Federal response. Some of these interfaces were described explicitly in the preceding sections; others are implicit in the individual agency response plan summaries that follow in Section B. The interfaces are catalogued alphabetically in this section to provide a comprehensive reference list for participating agencies and other offsite authorities. This catalogue also serves as a glossary, since only the titles of these interfaces are used in the agency response plan summaries that follow.

Congressional Information: As time and circumstances allow, agency Congressional Liaison Officers (CLOs) will either channel Congressional requests to the CFA Congressional Liaison Officer at the CFA headquarters, or coordinate their intended response with him/her. The Senior FEMA Official's CLO, in conjunction with the CFAO's CLO, will brief Congressional field staffs, as appropriate, at the scene of the emergency.

Coordination (Liaison): Agencies will provide or exchange liaison representatives, as required, to assist in the implementation of shared responsibilities.

Coordination (Offsite): Federal agencies will coordinate their provision of offsite assistance to State and local government agencies with the SFO whenever Federal agencies share the implementation of certain responsibilities or when their activities may impinge on the actions of other agencies.

Coordination (Onsite/Offsite): The SFO and the CFAO will work together to coordinate the response efforts of the Federal agencies offsite with the response efforts of the CFA and owner or operator onsite.

Designation of Lead Agency Official: Each agency will provide FEMA with the following information about its designated lead official: (1) Name and location; (2) telephone number at agency headquarters and/or at the scene; (3) if appropriate, the primary official deploying to the scene and his/her estimated time of arrival on scene; and (4) the primary official's intended location at the scene. Similarly, FEMA will provide each Federal agency with the same information when FEMA designates its SFO.

Emergency Shelter Availability: HUD and HHS will coordinate their assistance to State and local government officials in providing emergency shelter for relocated persons.

FRMAP (Coordination with FRERP): The SFO and DOE or EPA will coordinate FRMAP monitoring and assessment activities and results with other Federal offsite assistance being provided to the State.

FRMAP (Liaison): Upon arrival at the scene, the DOE OSTD will establish Liaison with State and local officials, the CFA, FEMA, and EPA.

FRMAP (Monitoring Results): DOE will coordinate Federal monitoring activities in support of the State during the initial stages of the emergency. The CFA will work with DOE to develop a comprehensive assessment of the radiological impacts of the emergency using both onsite and offsite monitoring data. The results of the assessment will be provided to the State and CFA (and other Federal agencies that require those results) for the State's and CFA's use in evaluating or confirming recommendations for protective actions.

FRMAP (Notification): DOE will notify Federal agencies that have FRMAP responsibilities in accordance with agreed upon notification procedures.

FRMAP (Resources): In making their resources available to support the FRMAP, all participating Federal agencies will coordinate their activities with DOE. When EPA has assumed the coordination responsibilities from DOE, participating Federal agencies will coordinate their activities with EPA.

FRMAP (Transition): After the emergency phase of the response, DOE will transfer FRMAP coordination responsibilities to EPA at a mutually agreeable time.

Federal Response Center: Upon notification by FEMA of the location and establishment of the Federal Response Center, each Federal agency with representatives at the scene of the emergency will provide representation to the Center as required.

Marine Fishery Product Safety: The Department of Commerce will provide a representative to HHS to coordinate on matters of fishery product safety (marine areas only).

Food/Feed Availability: USDA and HHS will coordinate their assistance to State and local government officials to insure the availability of food and feed during emergencies.

Food/Feed Safety Resources: HHS will provide resources, in coordination with USDA, to insure that food and animal feeds are safe for consumption.

Impact Assessment (Agriculture): USDA will coordinate with HHS and EPA to assist State and local officials, as requested, in the disposition of livestock and poultry contaminated or otherwise affected by radiation.

Impact Assessment (Health): HHS will assist the CFA, if requested, in assessing the impact of the radiological emergency on the health of persons in the affected area.

Information Exchange: A mechanism will be established to enable FEMA to facilitate the timely exchange of information among responding Federal agencies.

Information Requirements: CFA and FEMA will satisfy the information requirements specified by each Federal agency during the planning process as mutually agreed.

International Cooperation (CFA): The CFA, in consultation with FEMA and the Department of State, will cooperate with government counterparts in Canada and Mexico as agreed to in site-specific and incident-specific plans to respond to radiological emergencies that may occur near U.S. borders.

International Cooperation (FEMA): FEMA will work with the Department of State and other Federal agencies to implement the Federal response within the agreed-upon framework of international cooperation established during the planning process for radiological emergencies occurring near the borders of Canada and Mexico.

Logistical Support for Other Federal Agencies: The SFO, through FEMA headquarters, will make requests at the national level to obtain resource assistance needed by Federal agencies at the emergency scene.

Logistical Support for the CFA: The SFO will assist and support the CFA in obtaining logistical support or other resources from other Federal agencies when needed.

Monitoring Resources (EPA): EPA will provide resources to assist DOE in monitoring radioactivity levels in the environment during the emergency phase of the incident and, during the intermediate and long-term phase, will coordinate Federal radiological monitoring and the evaluation of actual environmental impact.

Notification (CFA): The CFA, after receiving notification of the emergency, will notify FEMA and DOE of the incident. This notification will include a description of the CFA's response status and current activities, a general assessment of the incident, and any information that FEMA and DOE may need to notify other Federal agencies.

Notification (FEMA): FEMA will notify Federal agencies of the

emergency situation and supply them with all relevant information as agreed in the planning process.

Notification (Procedures): FEMA will execute operational response procedures as agreed to with each potential CFA, to ensure that notification of Federal agencies and consequent activation of the Federal response take place in a timely, efficient, and mutually agreeable manner.

PAR (Development): Unless the public health and safety are in imminent peril, the CFA will consult with FEMA, HHS, EPA, USDOA, DOE, and other Federal agencies, as necessary, in preparing a coordinated Federal position on Protective Action and Re-entry Recommendations (PARs), when required.

PAR (Presentation): Unless the public health and safety are in imminent peril, the CFAO, in conjunction with the SFO, will prepare and present an evaluation of PARs to the State or other appropriate offsite authority.

Protective Action Measures (Food): USDA, in coordination with HHS, will assist State and local officials in the implementation of protective measures to minimize contamination through food ingestion.

Public Information Releases from Headquarters: Federal agencies' headquarters PIOs will either channel media information requests to the CFA's PIO at the CFA headquarters or coordinate their intended public information releases through him/her prior to release.

Public Information Releases from the JIC: Federal agencies' PIOs will work together to promote the coordinated release of public information through the JIC. The CFA will assume primary responsibility for the Federal government operation at the JIC. Federal operations management at the JIC may be transferred to FEMA at a mutually acceptable time; agencies will then coordinate their releases through the SFO's PIO.

Radiation Victim Care Advice: DOE will provide HHS and other Federal, State, and local agencies with advice on the handling and care of radiation accident victims if requested.

Recovery Plan: Prior to the deactivation of the Federal response, the CFAO, in conjunction with the SFO and other Federal agencies, will assist the State, as requested, in developing an offsite recovery and restoration plan.

Status Reports: Agencies at the scene of the emergency prior to the arrival of the CFA, FEMA, and DOE will provide a status report on their activities when each of these agencies arrives at the

scene of the emergency. Subsequent agency status reports will be provided on a recurring basis, as required, by the CFA, FEMA, and DOE.

Transportation to Emergency Housing Advice: HUD may consult with DOT for advice on the best means for transporting persons to emergency housing.

Water: DOI will coordinate its operation of Federal water resource projects with EPA and USDA to ensure protection of municipal (EPA) and agricultural (USDA) water supplies during radiological emergencies.

Weather Support: For radiological emergencies involving civilian facilities, the weather support capabilities of other agencies, such as DOD, will back up DOC when necessary. Conversely, DOC will provide backup support, when required, to DOD for DOD-related radiological emergencies.

White House Information: The CFA will notify the White House of the incident. Subsequently, the CFA will coordinate with the SFO when informing the White House of onsite conditions and actual or potential offsite radiological impacts. The SFO, in coordination with the CFAO, will maintain an executive level summary of the total Federal response and provide all subsequent executive summaries to the White House.

B. Summaries of Federal Agency Response Plans

This section provides summaries of the response plans prepared by participating Federal agencies:

Department of Commerce (DOC)
Department of Defense (DOD)
Department of Energy (DOE), CFA and FRMAP
Department of Health and Human Services (HHS)
Department of Housing and Urban Development (HUD)
Department of the Interior (DOI)
Department of Transportation (DOT)
Environmental Protection Agency (EPA)
Federal Emergency Management Agency (FEMA)
National Communications System (NCS)
Nuclear Regulatory Commission (NRC)
U.S. Department of Agriculture (USDA)

Each summary provides a mission statement, the agency contact point for notification, Federal agency interfaces, assistance responsibilities to State and local governments, agency response plan and procedure references, and sources of agency authority.

Department of Commerce Response Plan Summary

1. Summary of Response Mission

The National Oceanic and Atmospheric Administration (NOAA) is the primary agent within the Department of Commerce responsible for providing radiological emergency assistance to responding Federal, State, and local organizations. NOAA's responsibilities include: acquiring weather data and providing weather forecasts in connection with the emergency; disseminating weather and emergency information; and ensuring the safety of marine fishery products from radioactive contamination.

2. Point of Notification at DoC Headquarters

Contact Person's Title: Chief, Applied Services Branch
Contact Person's Office: National Weather Service Headquarters
Emergency Phone Number: (301) 427-7856 or (301) 427-7839
Alternate Emergency Point of Contact: NOAA/NWS Communications Branch
Alternate's Phone Number: (301) 581-1818; FTS 783-8189

3. Federal Department or Agency Interfaces

Listed below are DoC's interfaces with other Federal departments and agencies in responding to a radiological emergency.

Interface description	Agencies	Responsible DOC organization
Status reports, information requirements, and public information releases from Joint Information Center (JIC); Federal Response Center	DOE (CFA), DOE (CFA), NRC (CFA), FEMA	NOAA
Recovery plan	DOE (CFA), DOE (CFA), NRC (CFA), FEMA	NOAA, NOAA/National Marine Fisheries Service (NMFS)
Public information from headquarters, and congressional information	DOE (CFA), DOE (CFA), NRC (CFA), FEMA, NRC	NOAA
Notification	DOE (CFA), DOE (CFA), NRC (CFA), FEMA, NRC	NOAA/National Weather Service (NWS)
Fishery product safety	HHS/FDA	NMFS
Information exchange, logistical support for other Federal agencies, coordination (offsite), and designation of lead agency official	FEMA	NOAA
Weather support	DOE	NWS
MAP (notification)	DOE, EPA	NWS
MAP (resources)		

4. Responsibilities for Assistance to State and Local Governments

- Prepare and disseminate forecasts and warnings for severe weather such as hurricanes, tornadoes, severe thunderstorms, floods, extreme winter weather, and tsunamis to local officials and the general public.
- Broadcast watches and warnings of natural disasters prepared by NOAA, and radiological emergency warnings approved by the States, over NOAA Weather Radio and other NOAA dissemination systems.
- Provide current and forecast meteorological information about wind speed and direction, low level stability, precipitation, and other meteorological and hydrological factors affecting the transport or dispersion of radioactive materials (gaseous, liquid, particulate).
- Provide information on the marine fisheries resources in any impacted area, through the National Marine Fisheries Service (NMFS), in order to avoid human consumption of contaminated fish. (Marine areas only.)
- Through the Federal Coordinator for Meteorological Services and

Supporting Research, and consistent with provisions of the Office of Management and Budget Circular A-62, serve as the coordinating agent for any multi-agency meteorological aspects of planning the Federal radiological emergency response, including requests for assistance from State and local governments.

5. DOC Response Plan and Procedure References Agency Response Plan

1. National Plan for Radiological Emergencies at Commercial Nuclear Power Plants: Federal Coordinator for Meteorological Services and Supporting Research, National Oceanic and Atmospheric Administration November 1982

6. DOC Specific Authorities

- Department of Commerce Organization Order 25-53, as amended August 18, 1980

Department of Defense Response Plan Summary

1. Summary of Response Mission

a. The Department of Defense is charged with the safe handling, storage, maintenance, assembly, and transportation of nuclear weapons,

nuclear weapon components, and other radioactive material in DOD custody, and with the safe operation of DOD nuclear facilities. Inherent in this responsibility is the requirement to protect life and property from any health or safety hazards that could ensue from an accident or significant incident associated with these materials or activities. To fulfill these responsibilities, the DOD has issued plans and policy guidance requiring the development of a well-trained and equipped nuclear accident response organization. It should be noted that in order to protect national security information, policy guidance prohibits public release of information that identifies storage locations of nuclear materials, schedules of transportation of nuclear materials, or the schedules of nuclear-powered vessels. When DOD is not the CFA for a radiological emergency it will support the CFA and FEMA, as required, through the Directorate of Military Operations Support (DOMS).

b. The responsibility for onsite Command and Control at the scene of a nuclear accident or significant incident is assigned to:

(1) The Service or Agency in charge of a DOD installation, DOE facility, naval ship, or geographic area where the accident or incident occurs.

(2) The Service or Agency having custody of the material at the time of the accident or significant incident if the accident occurs beyond the boundaries of a DOD installation, DOE facility, naval ship, or geographic area.

c. The National Military Command Center (NMCC) is responsible for initial national-level command and control and response of DOD resources and personnel until conditions have stabilized. Command and Control will be transferred to the responsible Service Operations Center, as Directed by the Secretary of Defense, or his authorized representative. The NMCC will continue to provide information and support as required.

2. Point of Notification at DOD

Contact Person's Title: Deputy Director of Operations (DDO)

Contact Person's Organization: National Military Command Center, Organization of the Joint Chiefs of Staff

Emergency Phone Number: (202) 697-6340 (24 hours a day), Autovon: 227-6340, FTS: 997-6340.

3. Federal Department or Agency Interfaces

Listed below are DOD's interfaces

with other Federal departments and agencies in responding to a radiological emergency.

Interface description	Agencies	Responsible DOD organization
Status Reports	White House Situation Room, EPA, FEMA, USGA, HHS, DOE (CFA), NRC, DOD	NSMCC
FRMAP (Notification) (DEPA, HHS, USGA, DOD, DOE)	NSMCC	
FRMAP (Coordination with FRERP)	DOE	NSMCC
FRMAP (Lesson)	FEMA, DOE	NSMCC
Recovery Plan	DOE (CFA), FEMA, NRC	Dept. of Army
Information Exchange		
Public information releases from the JC	FEMA, DOE (CFA), NRC, White House Situation Room, DOE (CFA), NRC	NSMCC, OSD or Service Public Affairs
Public information releases from headquarters	DOE (CFA), NRC, White House Situation Room	OSD or Service Public Affairs
Congressional information	FEMA, DOE (CFA), NRC	OSD or Service Public Affairs, Congressional Liaison Offices
Logistical support for the CFA	FEMA	NSMCC or Dept. of Army
Logistical support for other Federal agencies	FEMA	NSMCC or Dept. of Army
Coordination (on-site/off-site)	FEMA	NSMCC
Designation of lead agency officials	FEMA	NSMCC
Federal Response Center	FEMA	NSMCC

4. Responsibilities for Assistance to State and Local Governments

a. Offsite authority and responsibilities at a nuclear accident rests with State and local officials. It is important to recognize that for nuclear weapons or weapon component accidents, land may be temporarily placed under effective Federal control by the establishment of a National Defense Area (NDA) or National Security Area (NSA) to protect U.S. government classified materials. These lands will revert back to State control upon disestablishment of the NDA or NSA.

b. The State Governor is responsible for the health, safety, and welfare of individuals within the territorial limits of the State during periods of emergency or crisis and he may be expected to direct measures that must be taken to satisfy that responsibility. The On-scene Commander will assist the State, when possible, in coordination with FEMA, to ensure the public is protected.

c. Within the constraints of national security, provide military assistance in the form of manpower and logistic support, including airlift services, as requested by FEMA.

d. Provide telecommunications support not available from other Federal agencies when requested by FEMA.

5. DOD Response Plan and Procedures References

Agency Response Plan

1. Nuclear Weapon Accident Response Procedures (NARP) Manual—11 March 1983

2. DOD Directive 5100.52 Radiological Assistance in the Event of Accident Involving Radiological Materials—10 March 1983

3. DOD Directive 5230.16 Nuclear Accident and Incident Public Affairs Guidance—7 February 1983

4. DOD SPECIFIC Authorities

- The Atomic Energy Act of 1954, as amended
- Pub. L. 97-351 "Convention on the Physical Protection of Nuclear Material Implementation Act of 1982"

Department of Energy Response Plan Summary (CFA)

1. Summary of Response Mission

The Department of Energy owns and operates a variety of fixed nuclear facilities and activities throughout the United States. Most of these facilities are located on large, government-owned reservations, and are operated by

extensive technical staffs under the direction of DOE. Subject to review and concurrence by DOE headquarters, DOE officials at these field facilities are responsible for the preparation of emergency plans and procedures for all nuclear activities under their jurisdiction. DOE field officials have the authority to initiate immediate emergency response procedures, direct emergency shut down operations, or place in safe condition, the nuclear facilities and activities under their cognizance. DOE is a Cognizant Federal Agency for nuclear activities under its jurisdiction. All field emergency activities are coordinated with appropriate headquarters officials, including the Director, Emergency Action and Coordination Team (EACT). DOE field officials are also required to assist State and local authorities, within the constraints of national security and in coordination with FEMA, in the preparation of those portions of their radiological emergency plans related to DOE nuclear facilities.

As part of its preparedness activities, DOE maintains extensive, field-based radiological emergency response resources for deployment under the FRMAP.

2. Point of Notification at DOE Headquarters

Contact Person's Title: Emergency Coordinator
Contact Person's Office: DOE Emergency Operations Center (EOC)
Contact Person's Emergency Location: DOE EOC
Emergency and Office Phone Number: (301) 353-5555; FTS 233-5555

3. Federal Department or Agency Interfaces

Listed below are the DOE's interfaces with other Federal departments or agencies in responding to a radiological emergency at a DOE facility:

Interface description	Agencies	Responsible DOE organization
Status Reports	DOC, DOD, NRC, EPA, FEMA, HHS, HUD, DCL, NCS, DOT, USGA	Emergency action and coordination team (EACT), field
Information Exchange	DOC, DOD, NRC, EPA, FEMA, HHS, HUD, DCL, NCS, DOT, USGA	EACT, field
Public information releases from headquarters, public information releases from JC	DOC, DOD, NRC, EPA, FEMA, HHS, HUD, DCL, NCS, DOT, USGA	EACT, Assistant Secretary for Congressional, Intergovernmental and Public Affairs (ASCP) or field
Congressional information	DOC, DOD, NRC, EPA, FEMA, HHS, HUD, DCL, NCS, DOT, USGA	ASCP
Notification (CFA)	FEMA, NRC, EPA, HHS	EACT, field
PAR (Development)	FEMA, NRC, EPA, HHS, USGA	EACT, field
FRMAP (Resources)	NRC, EPA	EACT, field
Impact assessment (Health)	HHS, EPA	Field, EACT

Interface description	Agencies	Responsible DOE organization
PAR (presentation) Notification (procedures), logistical support for other Federal agencies, coordination (on-site/off-site), information exchange, White House information, designation of agency's lead official, international cooperation (CFA) Federal Response Center.	FEMA	FEMA, EACT.
Recovery Plan	DOE (CFA), NRC	As designated.

4. Responsibilities for Assistance to State and Local Governments

- Assess the nature and extent of the radiological emergency and its potential offsite effects on public health and safety. Advise the State and local agencies based on this assessment.
- Develop Federal recommendations on protective actions for State and local governments that consider, as appropriate, all substantive views of other Federal agencies. Whenever possible, coordinate presentation of protective action recommendations with FEMA prior to or during their presentation to appropriate State and local officials (the State Governor or his designated representative), except in situations of imminent peril to the public health and safety where the DOE may be required to make independent contact with State and local officials.
- Provide for the release of public information concerning the radiological emergency, except for the release of information classified for national security purposes. Coordinate such releases to the extent possible with the Senior FEMA Official, other Federal agencies, and the State to provide consistent and accurate information to the public by the most expeditious means.

5. DOE Response Plan and Procedure References

- Emergency Planning, Preparedness, and Response for Operations*, Order DOE 5500.2, August 1981.
- Reactor and Nonreactor Facility Emergency Planning, Preparedness and Response Program for Department of Energy Operations*, Order DOE 5500.3, August 1981.
- Public Affairs Policy and Planning Requirements for Emergencies*, Order DOE 5500.4, August 1981.
- Response to Accidents and Significant Incidents Involving Nuclear Weapons*, Order DOE 5530.1, January 1983.
- DOE Specific Authorities**
 - Atomic Energy Act of 1954* as amended
 - Energy Reorganization Act of 1974*
 - Department of Energy Organization Act of 1977*

Department of Energy Response Plan Summary (FRMAP)

1. Summary of Response Mission

Independent of its responsibilities as a CFA, the Department of Energy (DOE) maintains and implements, during the initial phase of a radiological emergency, the Federal Radiological Monitoring and Assessment Plan (FRMAP). Under FRMAP DOE provides and coordinates offsite radiological monitoring and assessment support to State and local governments. DOE's support is augmented by several other Federal agencies including FEMA, NRC, EPA, HHS, USDA, DOC, DOD, and DOI. The FRMAP establishes the framework for coordinating the monitoring and

assessment activities of the Federal agencies. DOE is responsible for maintaining the FRMAP and for ensuring its implementation during the emergency phase of a radiological incident.

2. Point of Notification at DOE Headquarters

Contact Person's Title: Duty Office

Contact Person's Organization:

Emergency Action and Coordination Team

Contact Person's Emergency location:

Emergency Operations Center

Emergency Phone Number: (301) 353-1555; FTS 233-555 (24 hours a day)

3. Federal Department or Agency Interfaces

Listed below are the DOE's interfaces with other Federal agencies and departments in responding to a radiological emergency. DOE's Radiological Control Division is largely responsible for coordinating DOE's response effort within DOE and among the Federal agencies.

Interface description	Agencies	Responsible DOE organization
Status reports	NRC (CFA), EPA, FEMA, DOC, USOA, HHS, DOI, DOD (CFA), DOE (CFA)	Radiological assistance program team (RAP)
FRMAP (notification)	EPA, HHS, USDA, DOC, DOT, DOI, DOD (CFA), NRC (CFA), DOE (CFA)	Emergency action and coordination team (EACT)
FRMAP (coordination with FRERP)	EPA, HHS, USDA, DOC, DOI, DOD, NRC, DOE	RAP team
FRMAP (assess)	EPA, FEMA, NRC, DOD, DOE, (CFA)	RAP team
FRMAP (monitoring results)	NRC (CFA), DOD (CFA), DOE (CFA)	RAP team
FRMAP (transition)	EPA	EACT, RAP team
FRMAP (coordination with FRERP)	FEMA	RAP team
Recovery plan	DOD (CFA), NRC (CFA), DOE (CFA), FEMA	As designated
Information exchange, public information releases from the JIC	FEMA, NRC (CFA), DOD (CFA), DOE (CFA)	RAP team
Public information releases from headquarters	NRC (CFA), DOD (CFA), DOE (CFA)	EACT
Congressional information	FEMA, NRC (CFA), DOD (CFA), DOE (CFA)	ASOP
PAR (development)	NRC (CFA), DOD (CFA), DOE (CFA)	RAP team
Radiation victim care advice	HHS	Radiological Emergency Assistance Center/ training site (REAC/TS)
Logistical support for other Federal agencies	FEMA	RAP team
Coordination (offsite)	FEMA	
Designation of lead agency official	FEMA	EACT
Federal Response Center	FEMA	RAP team

4. Responsibilities for Assistance to State and Local Governments

- Coordinate the offsite radiological monitoring, assessment, evaluation, and reporting of all Federal agencies during the initial phases of an incident, and maintain liaison with State and local agencies with similar responsibilities.
- Maintain a common set of offsite radiological monitoring data, and provide it with interpretation to the CFA and to appropriate State and local

agencies requiring direct knowledge of radiological conditions.

- Provide HHS and other Federal, State, and local agencies with technical and medical advice concerning treatment of radiological contamination, if requested.

5. DOE Response Plan and Procedure References

Agency Response Plan: 1. The Federal Radiological Monitoring and

Assessment Plan Chapter III of the FRERP.**Interagency Procedures:**

1. **Joint DOD, DOE, and FEMA Agreement for Response to Nuclear Weapons Accidents and Nuclear Weapons Significant Incidents**, January 1981.

2. **Agreement between ERDA and NRC for Planning, Preparedness, and Response to Emergencies**, March 8, 1977.

3. **Operational Response Procedures (ORPs) Developed Between HHS, DOE, EPA, and the NRC**, 1983.

4. **DOE-EPA Letter of Agreement on Notification of Incidents at DOE Facilities**, January 18, 1978.

5. **National Plan for Radiological Emergencies at Commercial Nuclear Power Plants**, DOE-NOAA, November 1982.

6. DOE Specific Authorities

- **The Energy Reorganization Act of 1974** (Pub. L. 93-438).
- **The Department of Energy Organization Act of 1977** (Pub. L. 95-91).

Department of Health and Human Services Response Plan Summary**1. Summary of Response Mission**

In a radiological emergency, the Department of Health and Human Services (HHS) assists with the assessment, preservation, and protection of human health and helps ensure the availability of essential human services. HHS provides technical and nontechnical assistance in the form of advice, guidance, and resources to Federal, State, and local governments.

2. Point of Notification at HHS Headquarters

Contact Person's Title: Emergency Coordinator

Contact Person's Division: Division of Emergency Coordination *

Contact Person's Emergency Location: Emergency Operating Center, Room 3B-10, Hubert H. Humphrey Building, Washington, D.C. 20201
Emergency and Office Phone Number: (202) 245-0645

3. Federal Department or Agency Interfaces

Listed below are HHS's interfaces with other Federal departments and agencies in responding to a radiological emergency.

* The Emergency and Epidemiological Operations Branch (EOB) and the Office of Health Physics (OHP), Food and Drug Administration (FDA), Public Health Service, have made special arrangements with the Cognizant Federal Agencies (CFAs) for direct notification in a radiological emergency.

Interface description	Agencies	Responsible HHS organization
Notification (FEMA)	FEMA	Emergency coordinator, regional emergency coordinator
Status reports	FEMA, DOD (CFA), DOE (CFA), DOD (CFA), DOE (CFA), NRC	Emergency coordinator, regional emergency coordinator
Information exchange, logistical support for other Federal agencies	FEMA	Emergency coordinator, regional emergency coordinator, operating division(s)
Coordination (offsite)	FEMA	Regional emergency coordinator, Social Security Administration (SSA), Office of Program Coordination and Review (OPCR)
Coordination (on-site)	USDA	Public Health Service
Information requirements	DOD (CFA), DOE (CFA), NRC, FEMA	Public Health Service, Office of the Secretary, Office of the Secretary (OS)
Designation of lead agency official	FEMA	Office of Public Affairs/OS
Public information releases from headquarters, public information releases from the JIC	DOD (CFA), DOE (CFA), NRC, FEMA	Office of Legislative Liaison/OS
Congressional information	DOD (CFA), DOE (CFA), NRC, FEMA	Public Health Service (HHS/FDA/HRSA), SSA
Recovery plan	DOD (CFA), DOE (CFA), NRC, FEMA	Public Health Service (HHS/FDA/HRSA), SSA
Federal Response Center	FEMA	Regional emergency coordinator
PAR (Development)	DOD (CFA), DOE (CFA), NRC, FEMA, USDA	Public Health Service (HHS/FDA/HRSA)
Impact Assessment (Hazard)	DOD (CFA), DOE (CFA), NRC, FEMA	Public Health Service (HHS/FDA/HRSA)
Impact Assessment (Agriculture)	USDA	Public Health Service (HHS/FDA/HRSA)
PRMAP (Resources)	DOE, EPA	Public Health Service (HHS/FDA/HRSA)
Radiation Victim Care Advice	DOE	Public Health Service (HHS/FDA/HRSA)
Fishery Product Safety	DOC	Public Health Service (HHS/FDA/HRSA)
Food Availability Food/Feed Safety Resources Protective Action Measures (Food)	USDA	Public Health Service (HHS/FDA/HRSA)
Emergency Shelter Availability	HHS	HHS/OPCR

4. Responsibilities for Assistance to State and Local Governments

- Assist State and local government officials in evacuating and relocating persons from the affected area as requested. Ensure the availability of health and medical care, food, emergency shelter, clothing, and other human services, especially for the aged, the poor, the infirm, the blind, and others most in need;

- Provide grants for crisis counseling to victims in affected geographic areas;

- Provide guidance to State and local officials on the use of radio-protective substances (e.g., thyroid blocking agents), including dosage and also projected radiation doses that warrant the use of such drugs;

- Based on information from DOE/Oak Ridge REACS personnel, advise medical care personnel regarding proper medical treatment of people exposed to or contaminated by radioactive materials;

- Provide advice and guidance to State and local officials and the CFA, if requested, in assessing the impact of the effects of radiological incidents on the health of persons in the affected area;

- Provide resources, in coordination with the U.S. Department of Agriculture, to ensure that food and animal feeds are safe for consumption;

- Assist, in coordination with the U.S. Department of Agriculture, in developing technical recommendations for State and local officials regarding protective measures related to food and animal feed;

- Provide guidance to State and local governments on protective action guides for food and animal feeds; and

- Conduct epidemiological surveys and implement communicable disease control measures.

5. HHS response Plan and Procedure References

Agency Response Plan: 1. The Department of Health and Human Services Response Plan for Radiological Emergencies (Draft). Division of Emergency Coordination, March 14, 1983.

Interagency Procedures:

1. **Delegation of Authority—Emergency Preparedness Functions**, Division of Emergency Coordination, December 21, 1981.

2. *Emergency Planning and Operations Manual*, Division of Emergency Coordination, July 1, 1983.

3. *Disaster Response Guides*, Operating Divisions, Various Dates.

6. HHS Specific Authorities

- *Older Americans Act*.
- *Public Health Service Act*.
- *Food, Drug, and Cosmetic Act of 1938*.
- *Snyder Act*, 25 U.S.C. 13 (1921).
- *Transfer Act*, Pub. L. 83-568.
- *Indian Health Care and Improvement Act*, (Pub. L. 14-437).
- *Federal Civil Defense Act of 1950*.
- *Disaster Relief Act of 1974* (Pub. L.

93-288). Section 413, Crisis Counseling, Administration, Training.

Department of Housing and Urban Development Response Plan Summary

1. Summary of Response Mission

The Department of Housing and Urban Development (HUD) provides information on available housing for disaster victims or displaced persons. HUD assists in planning for and placing homeless victims by providing emergency housing and technical and support staff within available resources.

2. Point of Notification at HUD Headquarters

Contact Person's Title: Emergency Coordinator

Contact Person's Office: Emergency Preparedness Staff (EPS)

Contact Person's Emergency Location: Emergency Preparedness Staff

Emergency Phone Number: (202) 755-6417 (after hours)

Office Phone Number: (202) 755-8020

3. Federal Department or Agency Interfaces

Listed below are HUD's interfaces with other Federal departments or agencies in responding to a radiological emergency.

Interface description	Agencies	Responsible HUD organization
Notification, coordination (offsite), logistical support to other Federal agencies, information exchange, Federal Response Center	FEMA	Emergency preparedness staff.
Information requirements	FEMA, NRC (CFA), DOD (CFA), DOE (CFA), OOD (CFA), DOE (CFA), NRC (CFA), FEMA, DOD (CFA), DOE (CFA), NRC (CFA), FEMA.	Emergency preparedness staff. Office of Public Affairs.
Public information releases from headquarters, public information releases from the JIC, Congressional information		Office of Legislation and Congressional Relations.
Emergency shelter availability	HHS	Emergency preparedness staff.
Transportation to emergency housing advice	DOT	Emergency preparedness staff.
Recovery plan	DOD (CFA), DOE (CFA), NRC (CFA), FEMA.	Emergency preparedness staff.

4. Responsibilities for Assistance to State and Local Governments

- Review and report on available housing for disaster victims and displaced persons.
- Assist in planning for and placing homeless victims in available housing.
- Provide emergency housing support staff within available resources.
- Provide technical housing assistance and advisory personnel to State and local authorities.

5. HUD Response Plan and Procedure References

Agency Response Plan: 1. HUD FRERP, Office of Emergency Preparedness, September 30, 1983.

6. HUD Specific Authorities

None.

Department of The Interior Response Plan Summary

1. Summary of Response Mission

The Department of the Interior manages over 500 million acres of Federal lands and thousands of Federal natural resources facilities, and is responsible for these lands and facilities when they are threatened by a radiological emergency. In addition, the Department coordinates emergency response plans for Interior-managed park and recreation areas with State and local authorities, and operates Interior water resources projects to protect municipal and agricultural water supplies in cases of radiological emergencies. The Department provides advice and assistance concerning hydrologic and natural resources, including fish and wildlife, to Federal,

State and local governments upon request. It also has certain responsibilities for the island territories of the United States.

2. Headquarters Point of Notification

Contact Person's Title: Director, Office of Environmental Project Review (OEPR)

Contact Person's Office: Office of the Secretary, Department of the Interior, Room 4256, Interior Building, Washington, DC 20240
Emergency Phone Number: FTS 343-3891; COMM 202-343-3891 (Office), COMM 202-248-8259 (Residence), COMM 202-533-0488 (Alternate Residence), FTS 426-6600; COMM 202-426-6600 (U.S. Park Police 24-hour emergency number)

3. Federal Department or Agency Interfaces

Description	FRERP Agency	Responsible DOI organization
Notification, coordination (offsite), information exchange, logistical support to other Federal agencies.	FEMA	OEPR.
Designation of lead agency official, status reports, and information requirements.	DOD (CFA), DOE (CFA), NRC	CEPR.
Public information releases from headquarters, public information releases from JIC.	DOD (CFA), DOE (CFA), NRC	Office of Public Affairs.

Designation	PRERP Agency	Responsible DOI organization
Congressional information	DOD (CFA), DOE (CFA), NRC	Office of Congressional Liaison
PRERP (resources)	DOE, EPA	U.S. Geological Survey

4. State and Local Government Assistance

- Provide hydrologic advice and assistance, including monitoring personnel, equipment, and laboratory support.
- Provide advice and assistance in assessing and minimizing offsite consequences on natural resources, including fish and wildlife.
- Provide economic, social, and political advice and assistance to the territories of Guam, American Samoa, the Virgin Islands and the Trust Territory of the Pacific Islands (interim).

5. DOI Response Plan and Procedure References

Agency Response Plan:

1. 910 DM 5 (Draft)—Interior Emergency Operations, Federal Radiological Emergency Response Plan.
2. 296 DM 3 (Draft)—Interior Emergency Delegations, Radiological Emergencies.

6. DOI Specific Authorities

- Act of 1894 providing for gauging streams and determining the water supplies of the U.S. (28 Stat. 398).
- The Reclamation Act of 1902, as amended (43 U.S.C. 391), and project authorization acts.
- National Park Service Act of 1919 (16 U.S.C. 1), and park enabling acts.
- The Snyder Act of 1921, as amended (25 U.S.C. 13), including assistance to Indian tribes.
- National Wildlife Refuge System Administration Act of 1966, as amended (16 U.S.C. 666), and refuge enabling acts.
- Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701).

Department of Transportation Response Plan Summary

1. Summary of Response Mission

The Department of Transportation Radiological Emergency Response Plan (the plan) provides for assistance to State and local governments when a non-defense radiological emergency occurs that has adversely affected any one or more of the several transportation modes. The assistance will be in response to a request from a state and local jurisdiction when a determination has been made that their civil transportation technical or logistical resources are insufficient to

adequately handle the requirements created by a radiological emergency.

2. Point of Notification at DOT Headquarters

Contact Person's Title: Director of Transportation

Contact Person's Office: Office of Emergency Transportation

Interface description	Agencies	Responsible DOT organization
Status reports	DOE (CFA), DOE (CFA), NRC, FEMA	Crisis coordinator
Notification, information exchange, logistical support for other Federal agencies, coordination of lead agency effort	FEMA, DOD (CFA), DOE (CFA), NRC	Office of Emergency Transportation
Information requirements	FEMA, DOD (CFA), DOE (CFA), NRC	Office of Emergency Transportation
Public information release from the JC, public information release from headquarters	DOD (CFA), DOE (CFA), NRC, FEMA	Office of Public Affairs
Congressional information	DOD (CFA), DOE (CFA), NRC (CFA), FEMA	Office of Congressional Affairs
Federal Response Center	FEMA	Crisis coordinator, regional emergency transportation coordination (RETCCO)
Transportation to emergency housing advice	HUD	Office of Emergency Transportation (RETCCO)

4. Responsibilities for Assistance to State and Local Governments

- Maintain capability and resources to respond to a request for assistance in a non-defense radiological emergency.
- Provide civil transportation technical and/or logistical resources.
- Coordinate the Federal transportation response in support of emergency transportation plans and actions of State and local authorities.
- Provide, through Regional Emergency Transportation Coordinators (RETCCOs), representation to State and local transportation authorities.

5. DOT Response Plan and Procedure References

Agency Response Plan: 1. Department of transportation (DOT) Radiological Emergency Response Plan for Non-Defense Emergencies, November 1983.

Intra-Agency Procedures:

1. DOT Order 1900.7C, DOT Crisis Action Plan.
2. DOT Order 1950.1A, Reports on Non-Defense Transportation Emergencies.

6. DOT Specific Authorities

- Pub. L. 89-670, 1966, the Department of Transportation Act.
- Code of Federal Regulations (44 CFR Part 351), Radiological Planning

Contact Person's Emergency Location: Headquarters, U.S. Department of Transportation, Washington, D.C. 20560

Emergency Phone Number: (202) 426-1830, DOT (USCG) Duty Officer

Office Phone Number: (202) 426-4262

3. Federal Department or Agency Involvement

Listed below are DOT's interfaces with other Federal agencies and departments in responding to a non-defense radiological emergency.

and Preparedness—Final Regulations, § 351.25—the Department of Transportation.

Environmental Protection Agency Response Plan Summary

1. Summary of Response Mission

The Environmental Protection Agency (EPA) assists State and local governments during radiological emergencies in environmental and water supply monitoring, consequence assessment, and protective action decisions. These services may be provided at the request of the Federal or State government, or EPA may respond unilaterally to an emergency in order to fulfill its statutory responsibilities.

2. Point of Notification at EPA Headquarters

Contact Person's Title: Radiological Response Coordinator

Contact Person's Office: Office of Radiation Programs (ORP)

Contact Person's Emergency Location: Emergency Operations Center

	FTS	Commercial
Emergency phone numbers	517-7300 FAX 235-8027	(703) 557-7380 (DEX-4100)

3. Federal Department or Agency Interfaces

Listed below are EPA's interfaces with other Federal departments or

agencies in responding to a radiological emergency.

Interface description	Agencies	Responsible EPA organization
Status reports	DOO (CFA), DOE (CFA), NRC (CFA), FEMA, HHS, DDC, DOD, DOE, DOI, DOT, NRC, USDA	Office of Radiation Programs (ORP), ORP
FRMAP (notification), FRMAP (resources), FRMAP (monitoring needs), FRMAP (coordination with FRERP), FRMAP (evolution), FRMAP (lessons)	DOO, DOD, USDA	ORP, ORP, ORP
Water	DOO (CFA), DOE (CFA), NRC (CFA), FEMA	ORP
Impact assessment (significance)	DOO, DOE, NRC, FEMA	Office of Press Services
PAR (development)	FEMA	ORP
Information requirements	DOO (CFA), DOE (CFA), NRC (CFA), FEMA	ORP
Public information releases from headquarters, public information releases from JIC, congressional information, information exchange, logistical support for other Federal agencies, coordination (offsite), designation of lead agency official, Federal Response Center	DOO (CFA), DOE (CFA), NRC (CFA), FEMA	ORP
Recovery plan	DOO (CFA), DOE (CFA), NRC (CFA), FEMA	ORP

4. Responsibilities For Assistance to State and Local Governments

- Provide resources including personnel, equipment, and laboratory support to assist DOE in monitoring radioactivity levels in the environment during the emergency phase of the incident.
- Assume responsibility from DOE for coordinating intermediate and long-term radiological monitoring after the initial phase of the emergency after receiving adequate assurance from the Department of Energy and other Federal agencies that they will commit the required resources, personnel, and funds for the duration of the Federal response effort.
- Assess the nature and extent of the environmental radiation hazard.
- Provide guidance to Federal agencies and State and local governments on acceptable emergency levels of radioactivity and radiation in the environment.
- Assist the Cognizant Federal Agency (CFA), as requested, in developing recommendations measures to protect the public health and safety.

5. EPA Response Plan and Procedure References

Agency Response Plan: 1. U.S. Environmental Protection Agency Radiological Emergency Response Plan, Office of Radiation Programs, January 30, 1981.

Interagency Procedures:

1. Manual of Protective Action Guides and Protective Actions for Nuclear Incident, Office of Radiation Programs, September 1975.

2. Standard Operating Procedures for Radiological Emergency Response, appendix 2 to the EPA Radiological

Emergency Response Plan, Office of Air, Noise, and Radiation, June 1982.

3. Memorandum of Understanding Between the Federal Emergency Management Agency and the Environmental Protection Agency Concerning the Use of High Frequency Radio for Radiological Emergency Response, under development, Office of Radiation Programs, Environmental Protection Agency.

6. EPA Specific Authorities

- President's Reorganization Plan No. 3, December 2, 1970.
- Public Health Service Act, as amended, 42 U.S.C. 241, Section 301, and 42 U.S.C. 243, Section 311.

Interface description	Agencies	Responsible FEMA organization(s)
Notification (procedures)	DOO (CFA), DOE (CFA), NRC (CFA), EPA, HHS, HUD, NCS, NRC, USDA	EICC
Notification	DOO, DOI, DOT, DOD (CFA), DOE (CFA), EPA, HHS, HUD, NCS, NRC, USDA	EICC
Status reports	DOO, DOI, DOT, EPA, HHS, HUD, NCS, USDA	Emergency response team (ERT), emergency support team (EST)
Federal Response Center	DOO, DOI, DOT, DOD (CFA), DOE (CFA), NRC, EPA, HHS, HUD, NCS, USDA	ERT
Information exchange	DOO, DOI, DOT, DOD (CFA), DOE (CFA), EPA, HHS, HUD, NCS, NRC, USDA	ERT, EST
Logistical support for CFA and for other Federal agencies	DOO, DOI, DOT, DOD (CFA), DOE (CFA), EPA, HHS, HUD, NCS, NRC, USDA	ERT, EST
PAR (development), PAR (presentation)	DOO (CFA), DOE (CFA), NRC (CFA), EPA	ERT
FRMAP (coordination with FRERP)	DOO, EPA	ERT
FRMAP (liaison)	DOO (CFA), DOE (CFA), NRC (CFA), EPA, HHS, HUD, NCS, NRC, USDA	ERT, EST
Coordination (on-site/off-site)	DOO, DOI, DOT, EPA, HHS, HUD, NCS, USDA	ERT, EST
Coordination (off-site)	DOO, DOI, DOT, DOD (CFA), DOE (CFA), EPA, HHS, HUD, NCS, NRC, USDA	EICC and EST
Information requirements	DOO, DOI, DOT, DOD (CFA), DOE (CFA), EPA, HHS, HUD, NCS, NRC, USDA	Emergency operations
Designation of lead agency official	DOO, DOI, DOT, DOD (CFA), DOE (CFA), EPA, HHS, HUD, NCS, NRC, USDA	EST, ERT (respectively)
Public information releases from headquarters, public information releases from JIC	DOO, DOI, DOT, DOD (CFA), DOE (CFA), EPA, HHS, HUD, NCS, NRC, USDA	

• Clean Water Act, as amended in 1977, Section 504 (b)(1).

Federal Emergency Management Agency Response Plan Summary

1. Summary of Response Mission

FEMA is responsible for coordinating the Federal response to all radiological emergencies that require a significant, multi-agency Federal presence. FEMA's coordination role promotes an effective and efficient response by Federal agencies at both the national level and at the scene of the emergency. Coordination is achieved at the national level by FEMA through use of FEMA's Emergency Support Team (EST) and at the scene of the emergency between Federal, State, and local agencies by FEMA's Emergency Response Team (ERT).

2. Point of Notification at FEMA Headquarters

Contract Person's Title: Emergency Action Officer
 Contact Person's Office: Office of Emergency Operations
 Contact Person's Emergency Location: Emergency Information and Coordination Center (EICC)
 Emergency and Office Phone Number: (202) 634-7800

3. Federal Department or Agency Interfaces

List below are FEMA's interfaces with other Federal departments or agencies in responding to a radiological emergency.

Interface description	Agencies	Responsible FEMA organization(s)
Congressional information	DOC, DOR, DOT, DOD (CFA), DOE (CFA), EPA, HHS, HUD, NCR, NRC, USDA	EST, ERT.
White House information	DOO (CFA), DOE (CFA), NRC (CFA)	EST.
Recovery plan	DOO (CFA), DOE (CFA), NRC, DOC, DOE (non-CFA), DOR, DOT, EPA, HHS, HUD, USDA	ERT.
International cooperation	DOS, DOO (CFA), DOE (CFA), NRC	EST, ERT.

4. Responsibilities for Assistance to State and Local Governments

- Coordinate assistance to State and local governments among the Federal agencies.

- Coordinate among the Federal agencies all offsite response activities, except those pertaining to the FRMAP, and coordinate these with the onsite activities of the Cognizant Federal Agency.

- Work with the CFA to coordinate the dissemination of public information concerning Federal emergency response activities. Promote the coordination of public information releases with State and local governments, appropriate Federal agencies, and appropriate private sector authorities.

5. FEMA Response Plan and Procedure References

Response Plan:

1. *Headquarters Plan for FEMA Emergency Support Team*, Draft, April 1983.

2. *Guidance for Emergency Response Team Plans*, August 17, 1982.

3. *Emergency Response Team Plans for FEMA Regions I, II, III, IV, V, VI, VII, VIII, IX, and X*. Various dates.

Interagency Procedures:

1. *Operational Response Procedures developed between the Nuclear Regulatory Commission and the Federal Emergency Management Agency (NUREG-0981; FEMA-51)*. November 1983.

2. *Memorandum of Understanding for Incident Response between the Federal Emergency Management Agency and the Nuclear Regulatory Commission*, October 22, 1980.

3. *Joint Department of Defense, Department of Energy, and Federal Emergency Management Agency Memorandum of Agreement for Response to Nuclear Weapon Accidents and Nuclear Weapon Significant Incidents Occurring within the United States, its Territories and Possessions*. Undated draft.

6. FEMA Specific Authorities

- Executive Order 11490, June 15 1976, as amended.

- Executive Order 12148, July 20, 1979.
- Executive Order 12241, September 29, 1980.

National Communications System Response Plan Summary

1. Summary of Response Mission

The National Communications System (NCS) coordinates and manages telecommunications support for FEMA during radiological emergencies. The General Services Administration (GSA), as appropriate, assigns a Federal Emergency Communications Coordinator (FECC) to the FEMA Regional Director or Senior FEMA Official (SFO) for telecommunications matters. The FECC provides technical staff support to the FEMA Regional Director and the GSA Regional Emergency Communications Coordinator during the pre-emergency or extraordinary situation planning phase. The FECC assesses the

availability of communications and takes necessary actions to satisfy essential communications requirements in the emergency area. The FECC accomplishes these tasks in conjunction with Federal, State, local, and commercial communications representatives.

2. Point of Notification at NCS Headquarters

Contact Person's Title: Operations Officer

Contact Person's Office: Office of Emergency Preparedness (Operations)

Contact Person's Emergency Location: NCS/DCA Operations Center, 8th St. and South Court House Rd., Arlington, VA 22204

Emergency Phone Numbers:

Commercial or FTS: (202) 692-2718, (202) 692-2539

AUTOVON: 231-1787, 851-1790, 851-3740

Office Phone Numbers: 692-2816 (FTS) 222-2816 (AUTOVON)

Commercial or FTS (FAX): (202) 692-2714

3. Federal Department or Agency Interfaces

Listed below are NCS's interfaces with other Federal departments or agencies in responding to a radiological emergency.

Interface description	Agencies	Responsible NCS organization
Notification	FEMA	Emergency preparedness.
Logistical support for other Federal agencies	FEMA	Emergency preparedness.
Information exchange	FEMA	Emergency preparedness.
Designation of lead agency official	FEMA	Emergency preparedness.
Federal Response Center	FEMA	Federal Emergency Communications Coordinator (FECC) and staff.
Information requirements	DOO (CFA), DOE (CFA), NRC	Emergency preparedness.
Congressional information	DOO (CFA), DOE (CFA), NRC, FEMA	Emergency preparedness.
Public information releases from headquarters	DOO (CFA), DOE (CFA), NRC	Emergency preparedness.
Public information releases from the JIC	DOO (CFA), DOE (CFA), NRC, (CFA), FEMA	Emergency preparedness.
Recovery plan	DOO (CFA), DOE (CFA), NRC, FEMA	FECC and staff.

4. Responsibilities for Assistance to State and Local Governments

- Provide and coordinate, in response to a Senior FEMA Official (SFO) or FCO request, the necessary communications for the Federal government response in accordance with the *National Plan for Communications Support in Emergencies and Major Disasters*, July 1983. Be prepared to provide this support prior to a formal declaration of an emergency or major disaster.

- Provide representation to appropriate State agencies to assist in

meeting their communications requirements.

5. NCS Response Plan and Procedure References

Agency Response Plan: 1. *National plan for Communications Support for Emergencies and Major Disasters*, Office of Emergency Preparedness (Operations), July 1983

Interagency Procedures:

1. *Memorandum of Understanding*, GSA and FEMA, January 29, 1980.

2. *Executive Order 12046* (Relates to the transfer of to economic sanctions functions). The White House, March 27, 1978.

6. NCS Specific Authorities

• *Establishment of the NCS*, Presidential Memorandum, August 21, 1963.

• *Executive Order 11490*, October 30, 1969.

• *Executive Order 12046*, March 27, 1978.

• *White House Memorandum, National Security and Emergency Preparedness; Telecommunications and Management and Coordination Responsibilities*, July 5, 1976.

U.S. Nuclear Regulatory Commission Response Plan Summary

1. Summary of Response Mission

The U.S. Nuclear Regulatory Commission (NRC) regulates the use of by product, source, and special nuclear material, including activities at commercial and research nuclear facilities. If an incident involving NRC-regulated activities poses a significant threat to the public health or safety or environmental quality, the NRC would be the Cognizant Federal Agency (CFA). In such an incident, the NRC is responsible for monitoring the licensee to ensure that appropriate protective action recommendations are being made to offsite authorities in a timely manner. In addition, the NRC will support its licensees and offsite authorities, including confirming the licensee's recommendations to offsite authorities, and will keep the media informed of the NRC's knowledge of the status of the incident. The NRC is also responsible for the development, coordination, and presentation (in conjunction with FEMA) of Federal protective action recommendations and for keeping other Federal agencies and entities informed of the status of the incident.

Consistent with NRC's agreement to participate in FRMAP, the NRC may also be called upon to assist in Federal radiological monitoring and assessment activities during incidents for which it is not the CFA.

2. Point of Notification at NRC Headquarters

Contact Person's Title: Duty Officer
Contact Person's Office: Inspection and Enforcement (IAE)

Contact Person's Emergency Location: NRC Operations Center, Bethesda, Maryland

Emergency and Office Phone Number: (202) 951-0550

3. Federal Department or Agency Interfaces

Listed below are the NRC's interfaces with other Federal departments or

agencies in responding to a radiological emergency.

Interface description	Agencies ¹	Responsible NRC organization
Status report	DOC, DOD, DOE, EPA, FEMA, HHS, HUD, DOI, NCB, DOT, USDA	For all interfaces listed
Information requirements	DOC, DOD, DOE, EPA, FEMA, HHS, HUD, DOI, NCB, DOT, USDA	a. Director of executive team (during initial activation)
Public information releases from Headquarters, public information assistance from NRC	DOC, DOD, DOE, EPA, FEMA, HHS, HUD, DOI, NCB, DOT, USDA	b. Director of site operations (during expanded activation)
Congressional information	DOC, DOD, DOE, EPA, FEMA, HHS, HUD, DOI, NCB, DOT, USDA	
Notification (CFA)	FEMA, D, E, EPA, HHS	
PAR (development)	FEMA, DOE, EPA, HHS, USDA	
FRMAP (development)	DOE, EPA	
Impact assessment (health)	HHS, EPA	
RAI presentation, notification (procedures), logistical support for other Federal agencies, coordination (on-site/off-site), information exchange, White House information, designation of agency's lead official, interagency cooperation (CFA), Federal Response Center	FEMA	
Recovery Plan	DOE, EPA, HHS, USDA	

¹ Periodic consultations will be conducted with those agencies with which NRC has formal agreements, i.e., FEMA, DOE, EPA, HHS. Interfaces with other agencies will occur as required.

4. Responsibilities for Assistance to State and Local Governments

- Assess the nature and extent of the radiological emergency and its potential offsite effects on public health and safety. Advise the State and local agencies based on this assessment.
- Assess the facility operator's recommendations and, if needed, develop Federal recommendations on protective actions for State and local governments that consider, as required, all substantive views of other Federal agencies. Whenever possible, coordinate presentation of protective action recommendations with FEMA prior to or during their presentation to appropriate State and local officials (the State Governor or his designated representative), except in situations of imminent peril to the public health and safety where the NRC may be required to make independent contact with State officials.
- Provide for the release of public information concerning the radiological emergency, except for the release of information classified for national security purposes. Coordinate such releases to the extent possible with the Senior FEMA Official, other Federal agencies, and the State to provide consistent and accurate information to the public by the most expeditious means.

5. *NRC Response Plan and Procedure References*

Response Plan 1. NRC Incident Response Plan Revision 1 (NUREG-

0726), NRC Office of Inspection and Enforcement, April 1983.

Interagency Procedures:

1. *Agency Procedures for the NRC Incident Response Plan* (NUREG-0845), NRC Office of Inspection and Enforcement, February 1983.
2. *Operational Response Procedures Developed Between NRC and FEMA* (NUREG-0981; FEMA-51), NRC and FEMA, November 1983.
3. *Operational Response Procedures Developed Between NRC, EPA, HHS, and DOE*, 1982.

6. NRC Specific Authorities

- *Atomic Energy Act of 1954*, as amended.
- *Energy Reorganization Act of 1974*.
- 10 CFR Parts 6 to 199.

U.S. Department of Agriculture Response Plan Summary

1. Summary of Response Mission

The United States Department of Agriculture (USDA) is responsible for assisting State and local governments in developing agricultural protective measures and damage assessments. Other radiological emergency responsibilities of the USDA include: Providing for the procurement of food for emergency feeding programs; ensuring that meat and meat products, poultry and poultry products, and eggs and egg products are safe for public consumption; and providing technical information and advice to farmers to aid in their recovery from the emergency.

2. Point of Notification at USDA Headquarters

Contact Person's Title: USDA Radiological Emergency Coordinator, Director, Intergovernmental Affairs, Room 162-A, Administration Building, Washington, D.C. 20250
Emergency Phone Numbers: FTS 447-6643 (Days) (202) 537-0392 (Residence)

Alternative Contact Person's Title: Lead Agency Official for Radiological Response, Office of Emergency Planning, Food Safety and Inspection Service, 300 12th Street, S.W., Washington, D.C. 20250
Emergency Phone Number: FTS 475-3623 (Days) (301) 461-2237 (Evenings)

Safety and Inspection Service, April 1983.

6. USDA Specific Authorities

• Title 7, U.S.C.

V. Federal Radiological Emergency Preparedness

Federal agencies must be prepared to respond to radiological emergencies. This section addresses those actions Federal agencies must take to maintain a high degree of preparedness. Taking these actions will ensure that the Federal government can respond effectively to a radiological emergency. These actions fall into three categories: emergency planning, training and exercises, and resource maintenance.

A. Emergency Planning

1. **Agency Plans.** Agency plans will show the title or organizational units of personnel responsible for maintaining the plan. Plans should reference all supporting documents and procedures, and describe a process for review and update to accommodate changes suggested either by exercises or by actual responses to radiological emergencies.

To promote continued uniformity and consistency in agency plans and procedures, and to ensure that FEMA has access to the most up-to-date version of each agency's response plan, agencies will periodically provide copies of their most current offsite plans and associated procedures to the Director, FEMA. CFAs in particular will continue to provide FEMA those portions of their response plans that address the interface between the onsite and offsite response activities.

2. **FRERP.** The FRERP will be revised, if necessary, as a result of an actual emergency or multi-agency Federal exercises. Individual Federal agencies' response plans and implementing procedures have been reviewed and are consistent with this overall response plan. Therefore, the Federal government is prepared to respond effectively to a radiological emergency.

B. Training and Exercises

1. **Federal Agency Training.** An effective response to nuclear incidents depends on the availability of skilled, well-trained personnel. Agencies will provide for training and exercises, promulgate training schedules, and supply necessary training materials and resources.

2. **Interagency Exercises.** Agencies will also participate in interagency exercises, including periodic exercises of the FRERP. Such exercises will cover

Interface description	Agencies	Responsible USDA organization
Notification (FEMA)	FEMA	Governmental and Public Affairs (GPA)/Office of Intergovernmental Affairs (OIA) Food Safety and Inspection Service (FSIS)
Status reports	DOE (CFA), DOE (CFA), NRC, FEMA	FSIS
Information requirements	DOE (CFA), DOE (CFA), NRC, FEMA	GPA/OIA, FSIS
PAR (development)	DOE (CFA), DOE (CFA), NRC, HHS	GPA/OIA, FSIS
Public information releases from headquarters	DOE (CFA), DOE (CFA), NRC	GPA/Office of Information (OI)
Public information releases from Joint Information Center (JIC)	DOE (CFA), DOE (CFA), NRC, FEMA	GPA/OI
Congressional information	DOE (CFA), DOE (CFA), NRC	GPA/congressional relations (CR)
Coordination (offsite)	FEMA, HHS	GPA/OIA, FSIS
Information exchange, designation of lead agency official, and logistical support for other Federal agencies	FEMA	GPA/OIA, FSIS, Office of Operations (OO)
PRMAP (notification)	DOE, EPA	GPA/OIA, FSIS food and agriculture councils (FAC) will be activated as necessary (FAC are composed of the various USDA agencies operating at the State and local levels)
Impact assessment (Agriculture)	HHS, EPA	GPA/OIA, FSIS FAC will be activated as necessary
Protection action, food/feed availability, food/feed safety resources	HHS	GPA/OIA, FSIS FAC will be activated as necessary
Water	DOI	GPA/OIA, FSIS FAC will be activated as necessary

4. Responsibilities for Assistance to State and Local Governments

- Provide emergency food coupon assistance in officially designated disaster areas whenever local authorities report increasing needs.
- Assist in providing livestock feed.
- Provide assistance through regular USDA programs if legally adaptable to radiological emergencies.
- Ensure the purity and wholesomeness of meat and meat products, poultry and poultry products, and eggs and egg products.
- Provide for the procurement of food.
- Assist State and local officials, in coordination with HHS, in the implementation of protective measures to minimize contamination through food ingestion.
- Monitor, in coordination with HHS, emergency production, processing, and distribution of food during a radiological

emergency, and assess damage to agricultural resources.

- Provide advice to State and local officials on how to minimize losses to agricultural resources from radiation effects.
- Advise and assist State and local officials on the disposition of livestock and poultry affected by radiation. Coordinate this action with the EPA and HHS.
- Provide a liaison to State agricultural agencies to keep State and local officials informed of Federal efforts.
- Provide information and assistance to farmers and others in developing disaster plans and returning to normalcy after a disaster.

5. USDA Response Plan and Procedure References

1. **USDA Radiological Emergency Preparedness Response Plan, Food**

the following types of emergencies encompassed by the FRERP: NRC-licensed commercial nuclear power plant accidents, transportation of nuclear material accidents, DOD- and DOE-owned nuclear facility accidents, nuclear weapon accidents or nuclear weapon significant incidents, unplanned nuclear powered satellite re-entry incidents, and any other type of radiological emergency for which a State might request Federal assistance. These exercises will be organized and coordinated primarily by FEMA, in conjunction with a CFA, and may include both headquarters and field responses. Such exercises will be designed to determine if Federal agencies can coordinate their response activities effectively with other agencies in carrying out their responsibilities as outlined in the FRERP.

Thus, agency plans should make provisions for exercises that will test:

- Intra-agency procedures and operations; and
- Agency interfaces and coordination points.

C. Emergency Preparedness Resource Maintenance

Federal agencies will maintain adequate resources to carry out all agency responsibilities and interfaces described under this plan. Any limitations in the ability of a Federal agency to implement its responsibilities and interfaces as described in this plan should be brought to the immediate attention of the Director, FEMA.

*Abbreviations**

ARAC Atmospheric Release Advisory Capability
CFA Cognizant Federal Agency
CFAO Cognizant Federal Agency Official
CFR Code of Federal Regulations
CHEMTREC Chemical Transportation Emergency Center
CLO Congressional Liaison Officer
DOC Department of Commerce
DOD Department of Defense
DOE Department of Energy
DOI Department of the Interior
DOJ/FBI Department of Justice/
Federal Bureau of Investigation
DOT Department of Transportation
DSFO Deputy Senior FEMA Official
DSO Director of Site Operations, NRC
EACT Emergency Action and Coordination Team, DOE
EICC Emergency Information and Coordination Center, FEMA
EOC Emergency Operations Center, DOE

* This Appendix does not include abbreviations that are defined in the Agency Response Plan Summaries (Section IV).

EOF Emergency Operations Facility, Licensee
EPA Environmental Protection Agency
FDA Food and Drug Administration
FEMA Federal Emergency Management Agency
FRERP Federal Radiological Emergency Response Plan
FRMAC Federal Radiological Monitoring and Assessment Center, DOE or EPA
FRMAP Federal Radiological Monitoring and Assessment Plan (DOE)
FRPCC Federal Radiological Preparedness Coordinating Committee
HHS Department of Health and Human Services
HUD Department of Housing and Urban Development
ICRA Interagency Committee on Radiological Assistance
IRAP Interagency Radiological Assistance Plan
JIC Joint Information Center
JNACC Joint Nuclear Accident Coordinating Center
LAC Lead Agency Official
LNO Liaison Officer
NCS National Communications System
NOAA National Oceanic and Atmospheric Administration, DOC
NRC Nuclear Regulatory Commission
NWS National Weather Service
OSTD Offsite Technical Director, DOE
PAR Protective Action and Re-entry Recommendation
PIO Public Information Officer
RAC Regional Assistance Committee
RAP Radiological Assistance Program, DOE
SCO State Coordinating Officer
SFO Senior FEMA Official
USDA U.S. Department of Agriculture
USGS U.S. Geological Survey

Appendix B—Definitions

Accident Response Group (ARG)—A DOE team of scientists, engineers, and technicians that is trained, organized, and equipped to respond to a nuclear weapons accident/incident.

Agreement State—A State that has entered into an Agreement under the Atomic Energy Act of 1954, as amended, in which the NRC has relinquished to such States the majority of its regulatory authority over source, byproduct, and special nuclear material in quantities not sufficient to form a critical mass.

Assessment—The interpretation of radiological measurements in such a way that the measurements can form a basis for decision-making. Assessment can include making dose or effect predictions and recommending actions that might be taken to minimize harmful effects.

Carrier—A vehicle used to transport radioactive material whether by land, air, or sea.

Cognizant Federal Agency (CFA)—The Federal agency that owns, authorizes, regulates, or is otherwise deemed responsible for the affected facility, carrier, or cargo in the radiological emergency.

Cognizant Federal Agency Official (CFAO)—The lead official designated by the CFA to coordinate its response at the site of a radiological emergency.

Coordinate—To bring into common action so as not to unnecessarily duplicate or omit important actions. The Senior FEMA Official (SFO), and the CFAO act to promote coordination among the responding Federal agencies. When Federal agencies require assistance in coordinating their exchange of information, acquisition of resources, or release of public information, the SFO and his staff will act to help the agencies accomplish these tasks. Coordination does not involve direction of one agency by another.

DOE Emergency Operations Center (EOC)—The center located at DOE headquarters through which DOE's EACT coordinates a FRMAP multi-agency response to a radiological emergency.

DOE Offsite Technical Director (OSTD)—The DOE official designated to coordinate the Federal radiological monitoring and assessment activities under the Federal Radiological Monitoring and Assessment Plan.

DOE Team Leader—The individual designated by the Director of the Emergency Action and Coordination Team (EACT) to manage all DOE field activities in response to an accident/incident if DOE has onsite responsibilities. The DOE Team Leader primarily supervises onsite operations.

Emergency—Any natural or man-caused emergency that results in or may result in substantial injury or harm to the population or substantial damage to or loss of property.

Emergency Action and Coordination Team (EACT)—The DOE senior management team at headquarters that coordinates the initial FRMAP response to radiological emergencies.

Emergency Response Team (ERT)—FEMA team deployed to a radiological emergency scene by the regional or headquarters office to make an initial assessment of the situation and then provide FEMA's primary response capability.

Federal Radiological Monitoring and Assessment Center (FRMAC)—A center at the scene of a radiological emergency

from which the DOE Offsite Technical Director conducts the FRMAP response. This center generally need not be located near the onsite or Federal-State operations centers as long as its operations can be coordinated with them.

Federal Radiological Monitoring and Assessment Plan (FRMAP)—A plan to provide coordinated radiological monitoring and assessment assistance to the State and local governments in response to radiological emergencies. This plan, authorized by 44 CFR Part 351, is a revised version of the Interagency Radiological Assistance Plan.

Fixed Nuclear Facilities—Stationary nuclear installations that use or produce radioactive materials in their normal operations. These facilities include commercial nuclear power plants and other fixed facilities operated, authorized, or regulated by NRC, DOD, DOE, and, in some cases, the States.

Imminent Peril to the Public—A radiological emergency condition where immediate and possibly serious danger threatens the public and time does not permit a fully coordinated response. In these situations, the CFA presents its recommendations for protective actions in accordance with procedures in State emergency plans or, in the absence of such procedures, directly to the Governor or other appropriate offsite authority responsible for implementing public protective actions.

Interagency Committee on Radiological Assistance (ICRA)—A committee consisting of representatives from each of the Federal agencies participating in the FRMAP. ICRA, chaired by DOE, interprets, maintains, and updates the FRMAP, and provides a means for coordination of response capabilities, training activities, exercises, and research and development pertinent to the FRMAP.

Interagency Radiological Assistance Plan (IRAP)—A plan originally published in 1965 by an interagency committee of Federal agency representatives as a means for providing rapid and effective radiological assistance in the event of a peacetime radiological incident.

Joint Information Center (JIC)—A central point of contact for all news media at the scene of the incident. News media representatives are kept informed of activities and events via public information officials from all participating Federal, State, and local agencies who, ideally, are co-located at the JIC.

Joint Nuclear Accident Coordinating Center (JNACC)—A joint DOE/DOD capability at Kirtland Air Force Base,

Albuquerque, New Mexico, responsible for maintaining current information on the location of specialized DOE and DOD teams or organizations capable of providing nuclear weapons accident assistance.

Lead Agency Official (LAO)—The designated official in each participating agency authorized to direct that agency's response to the radiological emergency.

Liaison Officer (LNO)—A Federal agency official sent to another agency to facilitate interagency communications and coordination. An exchange of liaison officers helps to promote overall coordination of the Federal response to radiological emergencies.

License—A license issued to a facility owner or operator by a Federal agency pursuant to the conditions of the *Atomic Energy Act of 1954* (as amended), or issued by an Agreement State pursuant to appropriate State laws. NRC licenses certain activities under Section 170(a) of that Act.

Limited Response—Response to a request for radiological assistance that involves limited DOE or other agency resources and does not require the formal field management structure.

Local Government—Any county, city, village, town, district, or political subdivision of any State, including rural communities and unincorporated towns and villages.

Monitoring—The use of detection equipment to determine the levels of radiation or the presence and concentration of radioactive contamination.

National Contingency Plan—An operations plan required to outline the Federal response to radiological emergencies at commercial nuclear power plants. In Executive Order 12241, the President delegated to FEMA the responsibility for the development and promulgation of such a plan in response to Pub. L. 96-295.

National Defense Area (NDA)—An area established by a DOD official, on non-Federal lands located within the United States, its possessions, or its territories for the purpose of safeguarding classified defense information or protecting DOD equipment or material. Establishment of a National Defense Area temporarily places such non-Federal lands under the effective control of DOD and results only from an emergency event. The senior DOD representative at the scene will define the boundary, mark it with a physical barrier, and post warning signs.

National Radiological Emergency Preparedness/Response Plan for Commercial Nuclear Power Plant Accidents (Master Plan)—Commonly

referred to as the Master Plan, this document was published by FEMA for interim use in December 1980 and represented the first step toward developing Federal radiological emergency response plans and procedures.

National Security Area (NSA)—An area established by DOE on non-Federal lands located within the United States, its possessions, or territories, for the purpose of safeguarding classified or restricted data information, or protecting DOE equipment or material.

Establishment of a NSA temporarily places such non-Federal lands under the effective control of the DOE and results only from an emergency event. The Senior DOE representative having custody of the material at the scene will define the boundary, mark it with a physical barrier, and post warning signs.

Nuclear Emergency Search Team (NEST)—A DOE team of scientists, engineers, and technicians that is trained and organized to provide rapid technical assistance in locating nuclear weapons or materials.

Nuclear Weapon Accident—An unexpected event involving nuclear weapons or radiological nuclear weapon components that results in any of the following:

- Accidental or unauthorized launching, firing, or use by U.S. forces or U.S.-supported allied forces of a nuclear capable weapons system that could create the risk of an outbreak of war;
- Nuclear detonation;
- Non-nuclear detonation or burning of a nuclear weapon or radiological nuclear weapon component;
- Radioactive contamination;
- Seizure, theft, loss, or destruction of a nuclear weapon or radiological nuclear weapon component, including jettisoning; and
- Public hazard, actual or implied.

Nuclear Weapon Significant Incident—An unexpected event involving nuclear weapons or radiological nuclear weapon components which do not fall in the nuclear weapon accident category but:

- Results in evident damage to a nuclear weapon or radiological nuclear weapon component to the extent that major rework, complete replacement, or examination or recertification by the DOE is required;
- Requires immediate action in the interest of safety or nuclear weapons security;
- May result in adverse public reaction (national or international) or premature release of classified information; and

* Could lead to a nuclear weapon accident and warrants high officials of the signatory agencies being informed or taking action.

Off Site—The area outside of the boundary of the onsite area but within the area that is actually or potentially affected by the radiological emergency.

Offsite Federal Support—Federal assistance in mitigating the offsite consequences of an emergency and protecting the public health and safety, including assistance with determining and implementing public protective action measures.

Offsite Technical Director (OSTD)—The DOE official designated to coordinate the Federal radiological monitoring and assessment activities under the Federal Radiological Monitoring and Assessment Plan.

On Site—The area within the boundary established by the owner or operator of the affected facility or carrier or the CFA for controlling actions related to an emergency. Specifically, it includes the area within the boundary of a nuclear power plant, a DOD installation, a DOE facility, a National Defense Area, or a National Security Area. It also includes the controlled area surrounding a radioactive spill in a transportation incident.

On-Scene Commander—The military officer or senior DOE official who commands DOD and DOE forces and supervises all DOD and DOE operations at the scene of a DOD/DOE nuclear weapon accident or weapon significant incident.

Onsite Federal Support—Federal assistance that is the primary responsibility of the Federal agency that

owns, authorizes, regulates, or is otherwise deemed responsible for the radiological facility or material being transported, i.e., the CFA. This response supports State and local efforts by supporting the owner or operator's efforts to bring the incident under control and thereby prevent or minimize offsite consequences.

Owner or Operator—The organization that owns or operates the nuclear facility or carrier, or cargo that causes the radiological emergency. The owner or operator may be a Federal agency, a State or local government, or a private business.

Participating Agencies—44 CFR Part 351 establishes the Federal Radiological Preparedness Coordinating Committee (FRPCC), which has approved the establishment of the Subcommittee on Federal Response. The 12 agencies represented on this Subcommittee are referred to as the participating agencies in the FRERP. They are: FEMA, NRC, EPA, HHS, DOE, USDA, DOC, DOT, DOD, DOI, HUD, and NCS.

Population Dose Projection—An estimate of the total radiation dose to which the population may be exposed.

Projected Dose—An estimate of the radiation dose that affected individuals could receive.

Protective Action or Re-entry Recommendation (PAR)—A recommendation to take action that protects the public from exposure to radiation.

Public Information Officers (PIOs)—Federal agency officials at headquarters and in the field responsible for preparing and coordinating the dissemination of public information in

cooperation with other responding Federal, State, and local agencies.

Radiological assistance Program (RAP) Team—A team dispatched to the site of a radiological incident by the DOE regional office responding to the incident under the FRMAP.

Radiological Emergency—A type of radiological incident that poses an actual or potential hazard to public health and safety.

Senior FEMA Official (SFO)—Official appointed by the Director, FEMA, or his representative, to direct the FEMA response at the scene of a radiological emergency.

State Coordinating Officer (SCO)—An official designated by the Governor of the affected State to work with the CFAO and SFO in coordinating the response efforts of Federal, State, local, volunteer, and private agencies.

Subcommittee on Federal Response—A Subcommittee of the Federal Radiological Preparedness Coordinating Committee formed to develop and test the Federal Radiological Emergency Response Plan. Most agencies that would participate in the Federal radiological emergency response are represented on this Subcommittee.

Transportation Incident—Any incident that involves a transportation vehicle or shipment containing radioactive materials.

Transportation of Radioactive Materials—Refers to the loading, unloading, movement, or temporary storage en route of radioactive materials.

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