General Services Administration
Federal Property Resources Service Washington, DC 20406

40-4341 PDR Return to D. Cramer 3655

18 MAY 1981

Mr. John Hickey
United States Nuclear Regulatory Commission
Section Leader, Industrial Section
Fuel Cycle and Material Licensing
Washington, DC 20555

Dear Mr. Hickey:

On April 29, 1981, Mr. Stout and I hand-carried to your office, four copies of the GSA/FPRS National Defense Stockpile renewal application for NRC source material license STC-133.

During a telephone conversation between Mr. Stout and yourself on May 1, 1981, he indicated that a few minor changes in the texts of our Radiological Health and Safety Programs were being made. He further explained that we would like to see these changes reflected in our renewal application package in your possession. Following your instructions, we are enclosing one original and three copies each of the revised pages to our program documents, and are forwarding them to you for incorporation into our Radiological Programs. The two programs are located in the renewal application package under "Supplemental Sheet No. 8."

The following information is supplied to indicate the document name, page number, paragraph and type of change made:

1. In the document entitled, "General Radiological Management Guideline (National Defense Stockpile"), page 1, under IV, Guides, C. - typographical error and an exclusion. On Enclosure A to the same document in the left hand column under "Zone 1, New York, NY," the fourth listing address should have read, "GSA/FPRS, Scotia Depot, Scotia, NY."

2. In the document entitled, "GSA/FPRS National Defense Stockpile Occupational Health Guideline, Radiological Health and Safety," the following listing indicates the page number, paragraph and type of change.

PAGE NO.	PARAGRAPH	TYPE OF CHANGE
5	8	Typographical
6	7	Typographical
7	1	Typographical
8	3	Typographical
8	4	Typographical
8	5	Editorial
10	(starting with No. 7) 3	Appendix Clarification found in 10 CFR Part 20
10	4	Typographical
10	5	"activity" changed to "quantity"

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PAGE NO.	PARAGRAPH	TYPE OF CHANGE
	(starting with No. 2 monitoring)	
13	3	Complete revision
13	table	Revised to reflect restricted area and unrestricted area limits based on 100 cm area
14	table	Revised to show levels based on 100 cm area and revised to show dose rate
15	(starting with G Emergency Procedures) 4	Typographical
17	1	Typographical
17	3	Appendix clarification found in 10 CFR Part 20
17	Last paragraph	Typographical

Sincerely,

J. T. CONSIGLIO
Director
Technical Services Staff

Enclosures

ORIGINAL

GSA/FPRS GENERAL RADIOLOGICAL MANAGEMENT GUIDELINE
(NATIONAL DEFENSE STOCKPILE)

I Purpose

This Guideline prescribes the establishment and maintenance of a radiological safety program for the handling and storage of radioactive materials in the National Defense Stockpile Storage Locations operated by GSA.

II Applicability

The Federal Property Resource Service Office of Property Management, has radiological safety responsiblity for personal protection of individuals in buildings and outside storage areas at National Defense Stockpile Storage Locations. Therefore, this guideline applies only to materials stored at FPRS storage locations and to FPRS personnel, visitors and contractor personnel engaged in storage and handling operations of NRC licensed radioactive materials.

III Responsibility

A. Responsibility for administration of the radiological safety program is vested in the Zonal Radiological Officer(s) and the depot radiological monitors and their assistants as designated in Enclosure A to this guideline. The Zonal Radiological Officer will be responsible for extending the training program among depot personnel and will ascertain that prescribed monitoring and safety precautions are taken with respect to radioactive materials, where necessary, arrangements will be made to have depot radiological monitors attend radiological training courses conducted by a qualified instructor.

B. It is the responsiblity of the Depot Manager, his designee(s) and the Zonal Radiological Officer and or his designee(s) to immediately notify the appropriate responsible officials (i.e., fire department, GSA or Military Buildings Managers, etc.) and take appropriate action in the event of an emergency incident involving radioactive materials within their respective areas of jurisdiction. Such incidents are immediately to be reported to the Central Office Headquarters responsible Official by telephone.

IV Guides

Personnel engaged in this program will follow in general:

A. The contents of this Guideline and The GSA/FPRS National Defense Stockpile Occupational Health Guideline, "Radiological Health and Safety."

B. Supplement B to the S&CM Storage Manual, "Radiological Safety Procedures for Storage and Handling of Stockpiled Strategic Materials," August 1962.(in revision)

C. Nuclear Regulatory Commission Rules and Regulations Title 10, Part 20, "Standards for Protection against Radiation," and Parts 19, 40 and 71.

D. "Radiological Monitors Guide," April, 1981.

E. Department of Transportation Rules and Regulations Title 49, Parts 101-189 (most recent revised editions and supplements). (Title 10, Part 71 of NRC Guideline reference the use of DOT Transportation Regulations for Radioactive Materials).

ENCLOSURE A

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Designation of FPRS Radiological
Officers and Monitors

DUTY STATION	NAME	RADIOLOGICAL RESPONSIBILITY
Headquarters-Central Office, Washington DC		
GSA/FPRS/DMC Washington, DC	Jerome T. Consiglio Director Technical Services Staff	Program Management
GSA/FPRS/DMC Washington, DC	Robert E. Stout Industrial Hygienist Technical Services Staff	Radiological Officer (Program Wide)
Zone 1, New York, NY		
GSA/FPRS, Zone 1 New York, NY	Melvin Lee Quality Assurance Specialist	Zone 1 Radiological Officer (Zone Wide)
GSA/FPRS, Scotia Depot Scotia, NY	Dennis Wesolowski Quality Assurance Specialist	Zone 1 Alternate Radiological Officer (Zone Wide)
GSA/FPRS, Curtis Bay Depot Baltimore, MD	Marvin D. Mullenax Quality Assurance Specialist	Zone 1 Alternate Radiological Officer (Zone Wide)
GSA/FPRS, Scotia Depot Scotia, NY	Edward Green Quality Assurance Specialist	Zone 1 Alternate Radiological Officer (Zone Wide)
GSA/FPRS, Scotia Depot Scotia, NY	Fred Suhr * Acting Depot Manager	Radiological Monitor
GSA/FPRS, Binghamton Depot Binghamton, NY	Charles Gusta Ferro Depot Manager	Radiological Monitor
GSA/FPRS, Binghamton Depot Binghamton, NY	Charles Choynowski Assistant Depot Manager	Radiological Monitor
GSA/FPRS, Somerville Depot Somerville, NJ	Joseph Cucchiaro Depot Manager	Radiological Monitor
GSA/FPRS, Curtis Bay Depot Baltimore, MD	Lloyd Morley Depot Manager	Radiological Monitor
Seneca Army Depot Romulus, NY	Military	Radiological Officer (Military)
Zone 2, Hammond, Indiana		
GSA/FPRS, Hammond Depot Hammond, IN	Harry Szezepanski Quality Assurance Specialist	Zone 2 Radiological Officer (Zone Wide)

(a) Somatic. The somatic effect is related to radiation causing changes in tissues, organs or the whole body. These effects vary significantly and are dependent upon the type, energy level and amount of radiation exposure as well as the total time of exposure. Rapid death will result in a short term exposure to 10,000 roentgens or greater, but only a slight reddening of the skin may occur when there is a minimal exposure.

Those somatic effects that are of particular concern that may be delayed for many decades include: neoplasms (a new growth of tissue with no apparent physiological function, i.e., a tumor), cataracts of the eyes and life shortening. Neoplasms that are delayed for long periods of time may occur only in a small fraction of the exposed individuals.

Within the body cells react with varying degrees of sensitivity. Tissues respond the same way and their response is dependent on the dose equivalent rate. If the radiation dose absorbed within the body is not extreme, it tends to break up and is shared by the tissues. This presents a more tolerable condition which allows the tissues and organs, if there is enough time, to repair themselves before the changes can become irreversible.

Effects of partial body exposure are less significant than whole body exposure. The NRC exposure guidelines show that exposure levels for partial body irradiation are much higher than for whole body.

Age has a lot to do with the effects produced in the human body. Pregnant females (the fetus), young children and older persons are far more susceptible to the effects of a given dose of radiation than individuals of intermediate ages.

Finally, for equal absorbed doses, different types and energies of radiation do not produce the same effects in humans. Enclosure #2 taken from Patty's Industrial Hygiene and Toxicology, Volume 1, 3rd revised edition, is a summation of the exposure levels and the somatic effects that will occur when exposed to varying levels of radiation.

(b) Genetic. Radiation incident upon the gonads (ovaries, testes) can produce genetic effects. These genetic effects, referred to as "radiation-induced mutations" occur in the gene pool. Only radiation exposure to the gonads during the reproductive period of a lifetime can produce this effect. Therefore, the age at which radiation exposure occurs is critical.

(c) Acute and Chronic. Practically all occupational irradiation involves chronic exposures; usually small dose, less than 100-200 mrem over a period of many months or years. An acute exposure represents a high dose such as 25 rem accumulated in a day or less. Most occupational exposures within the stockpile will fall into the chronic extremely low level exposure.

(i) Acute. Early effects that may be incurred following an acute high level exposure are listed in Enclosure #3. Delayed effects may show up some time after the early effects have subsided. Loss of hair and permanent or temporary sterility are among the delayed effects that may be suffered. Permanent

sterility would result from an insult of 500-600 rads of gamma radiation to the gonads and an exposure to 50 rads may induce temporary sterility. Late effects, which may not show up for many years after exposure, include leukemia.

(ii) Chronic. For chronic exposures there are no secondary or delayed effects and the potential for late effects are minimal. Chronic exposures, low level radiation over an extended period of time, are usually well below levels established by the regulating bodies in this country for occupational exposure.

(d) Internal and External Radiation Sources. Internal radiation sources, i.e.; those radionuclides that have gained entrance to the body present different exposure problems than external radiation sources, i.e.; those existing outside the human body.

(i) Internal. Entry into the body from occupational exposures is primarily by inhalation but also by absorption through the skin, cuts, and abrasions and sometimes by ingestion.

Inhalation of radionuclide containing particulates or gases is by far the most common type of occupational exposure. Once the radioactive compounds are inside the body they are absorbed, metabolized, and distributed to various tissues and organs. This distribution is dependent upon the chemical properties that the radioactive element or compound displays. The effects they produce internally depend upon the particular energy of the radiation and the length of time they irradiate the tissues and organs. The health hazard that is produced is lessened by the natural radioactive decay process and by biological elimination.

(ii) External. Effects produced from external radiation sources depends on the penetrating ability of the radionuclide. Alpha radiation is no problem externally and beta is stopped by the outer tissues. Gamma radiation, however, is quite penetrative and represents the greatest external hazard in the stockpile.

(e) Critical Organs and Tissues. For whole body external exposure, the blood forming organs (red bone marrow), the lense of the eye, and the gonads are the most susceptible to injury. From internal exposures, the distribution and metabolizing pattern of the radionuclide will dictate what organ and tissues will be affected. The organs and tissues that are termed critical from an external exposure are the lung, GI tract, bone muscle, fatty tissue, thyroid, kidney, spleen, pancreas, and prostate.

C. Control Measures. The greatest emphasis should be placed on engineering control measures to limit radioactive emissions to levels which will reduce some of the administrative and procedural practices that may have to be employed.

1. Ventilation, Dust Collection, Isolation and Facility Layout. Ventilation systems are not normally utilized during regular handling and storage of licensed material in the National Defense Stockpile. However, portable local exhaust ventilations systems, in the form of industrial size vacuum cleaners,

equipped with high efficiency particulate filters (hepa) that capture radionuclides are used. The Nilfisk Model GA-73 are the type of vacuum cleaners that are available on site for use when needed. Their use would be during overpackaging projects involving commodities controlled under our source material license STC-133. The sites of these vacuum systems with specialized ducting attachments at the inlet are placed as close to the actual "critical location" of the overpackaging defined area as possible, to ensure that if any material is spilled, it will not become airborne to any significant extent. Workers during this period are fully equipped with personal protective clothing including approved respiratory protection.

Prior to the beginning of an overpackaging or decontamination project, an assessment shall be made by the Zonal Radiological Officer and other stockpile personnel to determine if there is a need for additional controls. Engineering controls such as, but not limited to, isolation, enclosure, exhaust ventilation and dust collection shall be used to meet the NRC exposure limit criteria where and when feasible. Local exhaust ventilation and dust collection systems shall be designed, constructed, installed, and maintained in accordance with the American National Standard Fundamentals Governing the Design and Operation of Local Exhaust Systems, ANSI Z9.2 (latest revision,) which is incorporated by reference herein.

The layout and design of storage facilities should be such that there is minimal risk of contamination. For example, high radiation areas should be separated from lower level operations. This may require, prior to the beginning of the project, a protective coating be applied to the concrete floor to create a barrier between any spilled radioactive material and the concrete. This will result in a lower cost for decontamination projects.

2. Shielding. The thickness of a specified substance, when placed in the path of a beam of radiation that reduces the value of that radiation measured quantity by 1/2 is referred to as the "half-value layer" (HVL). The HVL is often used to denote the effectiveness of shielding materials. In using HVL data, it should be remembered that a shield thickness of 2HVL reduces the exposure rate by a factor of 4; a thickness of 3HVL by a factor of 8. The Table below illustrates the above principle.

Material Used for Shielding Half-Value Layer	Reduction in Exposure
1.	.2x
2.	.4x
3.	.8x
4.	16x
5.	32x
6.	64x
7.	.128x

Shielding designs should be used to reduce exposures to the lowest practicable level. Many times, dense stockpile non-radioactive materials, stored in drums, can be used to effectively form a shield perimeter where there are radioactive materials stored inside the perimeter area. The density of the shielding material is closely associated with the attenuation of radioactivity. The more dense the shielding material, the greater the attenuation.

In the case of photon emissions, (gamma rays), the selection of material is very important. Highly dense material such as ferrochrome in drums can serve as an effective perimeter barrier for thorium nitrate stored in the stockpile. Normally, lead, concrete, or a combination of the two are used to attenuate the highly penetrative gamma rays. If shielding material is installed, special attention should be paid to such details as, overlapping joints, eliminating voids or non-homogeneities in material, need for structural support for non-load-bearing material such as lead, need to ensure proper attenuation through leaky areas in the shield, (e.g., glass windows, joints, seams, pipes, conduit, service boxes and doors). There is also a need to be certain that the correct shielding materials are being used for the type of radiation in question and the need for continuous maintenance of the shielding structure, to prevent deterioration.

3. Time. The longer a person is exposed to radiation, the greater the biological risk. It should be understood that work operations involving radioactive stockpile commodities, particularly thorium nitrate, should take into acco[illegible] the length of time a person is exposed to a given dose of radiation. Per[illegible] dosimeters and film badges with good exposure recordkeeping in ledger form[illegible]all be maintained for all individuals exposed to licensed radioactive materials to ensu[illegible]e they are; a)not overexposed according to NRC criteria in Part 20, and b) limited to the minimum amount of exposure that a particular work task requires.

4. Distance. Distance is probably the most practical method of reducing the amount of radiation incident upon persons conducting stockpile work operations in and around radioactive materials. The levels of radiation decline rapidly as the distance is increased between the source and the person (inverse square relationship). When the distance is doubled from the source of radioactivity, the intensity of the radiation is decreased 4 times; tripling the distance from the source reduces the radiation 9 times. The GSA/FPRS National Defense Stockpile Radiological Instructions for Monitors, Enclosure #4, graphically depicts this.

5. Protective Equipment. Every effort should be made to control the potential radiation exposures by engineering controls. There will be times, however, when personal protective clothing and equipment will serve as one of the primary means of human protection, especially for suspended radionuclide particulates. Personal protective equipment, such as respirators shall be chosen for use according to the GSA/FPRS Occupational Health Guideline for Respiratory Protection (see Enclosure #5) and NRC guidelines. Such respirators shall be approved for use in atmospheres containing radionuclides by the National Institute for Occupational Safety and Health (NIOSH). The specific type of respiratory protective equipment to be used shall be based on the judgment of the Zonal Radiological Officer.

Special training is necessary for the proper usage of personal protective clothing, and equipment (including respirators). Proper fit, maintenance, comfort, removal procedures that avoid contamination laundering and dispos[illegible] are all matters that the Zonal Radiological Officer or his designees should thoroughly impart to all stockpile employees involved in the handling, storage, and shipping of radioactive

--The radiation dose should be recorded immediately after individuals leave the radiation area by writing in a bound ledger the reading of the pocket dosimeter first and then by the results received from the film badges,

--all licensed materials to be shipped shall be placed in readiness for shipment in accordance with NRC regulation Part 71 and the DOT Hazard materials regulations dealing with radioactive materials found in 49CFR Part 171-189.

7. Waste Disposal. Radioactive wastes have half-lives ranging from minutes to thousands of years. Because of this, there are problems associated with the storage and disposal of radioactive wastes.

Storage of radioactive solid and liquid waste shall be accomplished in accordance with applicable NRC, DOT, EPA and State and Local Criteria. The State and Radioactive Waste Disposal Facility where such facility is located has numerous requirements for packaging and transportation. It is the responsibility of the Zonal Radiological Officer to become fully knowledgeable about such criteria.

The NRC does not permit release of effluents to unrestricted areas which exceed the limits as specified in 10 CFR Part 20 Appendix B & C. For discharge of radioactive wastes into sanitary sewage systems, the material must be readily soluble and dispersible in water, and the average daily concentration must not exceed the larger of either; the limits as specified in Appendix B, Table I, Column 2 or 10 times the quantity of such material as specified in Appendix C.

The average monthly concentration of radioactive wastes cannot exceed the limits specified in Table I, Column 2 in 10 CFR Part 20, Appendix B, nor can the gross quantity of radioactive material released into the sewer system in any one year exceed one curie.

Burial of radioactive materials in soil is permitted if: 1) the total quantity at the time of burial does not exceed 1,000 times the amount specified in 10 CFR Part 20, Appendix C; 2) the burial is at a minimum depth of 4 feet; 3) successive burials are separated by distances of at least 6 feet; and 4) not more than 12 burials are made in any one year. Incineration may not be used as a means of disposing of radioactive materials unless it is specifically approved by NRC.

THE NATIONAL DEFENSE STOCKPILE RADIOACTIVE BURIAL SITE AT CURTIS BAY DEPOT, CURTIS BAY MARYLAND HAS BEEN CLOSED FOR MORE THAN A DECADE. THE OFFICE OF STOCKPILE MANAGEMENT SHALL DISPOSE OF ALL LICENSED RADIOACTIVE MATERIALS (AS WASTE) AT AN NRC LICENSED RADIOACTIVE WASTE DISPOSAL FACILITY.

All necessary health and safety precautions shall be adhered to when collecting and monitoring radioactive wastes for collection into approved containment devices. They shall be properly stored and shipped.

8. Warning Signs, Labels, Markings and Placards. Various specification warnings signs, labels, markings and placards are required by the regulatory

Area	Definition (NRC)
"Radiation Area"	Where dose in excess of 5 mrem in any hour is possible; or a dose in excess of 100 mrem in any 5 consecutive days is possible (this equated to 0.59 mrem/hr. when measuring beta and gamma)
"High Radiation Area"	Where a dose in excess of 100 mrem/hr is possible.

Radiation areas shall be posted with the Standard caution symbol and the words, "CAUTION, Radiation Area." High radiation areas shall be posted with the standard caution symbol and the words, "CAUTION, High Radiation Area." High radiation areas require the establishment of special cautionary operating procedures, including the use of interlocks and alarms. The National Defense Stockpile Program as of April 26, 1981 does not have any High Radiation Areas.

Whenever licensed material (exclusive of natural thorium or uranium) is used or stored in an amount exceeding 10 times the quantity specified in NRC Part 20, the area must be posted with a sign bearing the words, "Caution, Radioactive Material(s)." The use or storage of natural thorium or uranium in an amount exeeding 100 times the quantity specified in NRC Part 20 requires an identical posting format as stated above. The outside surfaces of containers of radioactive materials must be similarly labeled.

2. Monitoring. In order to ensure the continued effectiveness of the National Defense Stockpile Radiological Health and Safety Program, various forms of monitoring and surveys are required. Guidelines to follow are contained in the GSA/FPRS National Defense Stockpile General Radiological Management Guidelines.

The annual (or more frequent when necessary) monitoring surveys of the work environment and areas where licensed radioactive materials are stored shall be conducted in a comprehensive and competent fashion.

When an assessment of contamination levels is necessary, follow: 1) the NRC criteria as indicated in the DRAFT GUIDELINE, "SURVEY FOR DECONTAMINATION OF FACILITIES AND EQUIPMENT PRIOR TO RELEASE FOR UNRESTRICTED USE," 2) DOT requirements as indicated in 49 CFR Part 173.397 for assessing removable radioactive contamination of packages (drums, etc.) prior to inloading or outloading, and 3) the contents of the table below when assessing working counts (c) in restricted and unrestricted radiation areas for removable contamination and working counts and dose rates for fixed contamination in the same areas.

Contamination	Maximum Permissable Levels Per 100 CM^2 Area	
1. Removable		
a. Alpha emitted (Uranium natural 235,238 and associated decay products and Thorium natural 232).	2000 c/m	Restricted Area (Radiation Area)
	1000 c/m	Unrestricted Area
b. Beta-Gamma emitted (nuclides with decay modes other than Alpha emission except ^{90}Sr	5000 c/m	Restricted Area
	1000 c/m	Unrestricted Area

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Contamination	Maximum Permissable Levels Per 100 CM^2 Area	
2. Non-removable (fixed)		
a. Uranium and thorium	2500 c/m	
	DOSE RATE	
b. Beta-Gamma emittes other than ^{90}Sr	0.2 mR/hr	Restricted
	0.05 mR/hr	Non-restricted

. Monitoring instruments should have sufficient sensitivity, precision, accuracy, response time, and dynamic range to accommodate the type of radiation being generated and its operational characteristics.

b. Radiation protection personnel must be alert to changes in the radiation environment, preferrably before they have a chance to occur. This means being made aware of the introduction of new radiation sources or changes in the operating modes of existing radiation-producing devices. The personnel conducting the survey cannot rely solely on the readout from monitoring devices to signal the advent of a changed environmental condition.

c. All monitors should be designed for a fail-safe response. This means that when the instrument components fail, they fail in a mode that alerts people to an unsatisfactory condition (e.g., a visual and audible alarm signal or alarm is used to signify a component failure).

d. The monitoring level on the instruments should be set high enough to avoid spurious signals but low enough to ensure the safety of personnel. Shielding or adjustments to the operating characteristics of monitoring instruments should enable the user of the instruments to eliminate interferences from external sources (e.g., radio frequency, microwave and ultraviolet radiation.)

e. Annual calibration and maintenance of all monitoring instruments is mandatory.

f. Annual assessments by qualified Radiological officers will be needed on such matters as the following:

(i) length of time personnel should wear film badges, personnel dosimeters, nuclear accident dosimeters (NAD), thermoluminescent dosimeters, and so on,

(ii) frequency of monitoring of internally deposited radionuclides, specific analytical measures to be taken (e.g., bioassay).

g. Periodic determination of whether the areas sampling points or conditions being monitored are the appropriate ones to monitor, or whether program changes are necessary.

h. Ensure that all necessary health and safety precautions are adhered to during the conduct of the monitoring survey such as the wearing of personal protective

clothing and respirators when required. The wearing of film badges and pocket dosimeters and the monitoring and decontamination of ones clothing and body upon completion or during the survey when necessary.

i. Ensure that all data are recorded in an accurate and detailed manner as indicated in the GSA/FPRS National Defense Stockpile, General Radiological Management Guidelines.

G. Emergency Procedures

The Zonal Manager, Radiological Officer and Depot Managers are responsible for the establishment of an Emergency Procedures Program for each Depot where licensed radioactive stockpile materials are stored. Such procedures shall be generated and posted within 90 days of the effective date of this guideline. Copies shall be posted and training shall be provided to all depot personnel. Forward copies to: Office of Stockpile Management (DMC) so they may be incorporated into our source material license.

Step-wise emergency procedures shall be established and posted in each "Radiation Area." Since conditions change over time, the emergency procedures must be reviewed and updated periodically. The essential elements of an emergency procedure include simple. direct, step-wise instructions on the course of action to be taken in an emergency For example:

1. In the event of fire in a radioactive area, leave the warehouse immediately. Close the door behind you. Immediately notify the servicing fire department.

2. Call other designated officials and take action as called for in the program.

3. Follow additional steps until emergency is abated.

Prior arrangements should be established with local police and fire departments, hospitals, in-house and outside emergency squads, and other applicable medical facilities. Evacuation routes and assembly points should be designated. Periodic mock drills should help promote the changing and continued effectiveness of the Emergency Procedures Program.

Full written established procedures and written communication with designated fire departments, civil defense authorities, etc.; detailing the type and location of licensed material as well as spill control and clean-up procedures are the most vital areas of concern. Fully address areas such as fire safety, evacuation, decontamination of personnel and equipment etc. The Occupant Emergency Program (that should be fully implementated at each National Defense Stockpile Site) and Supplement B to the Strategic and Critical Materials Storage Manual, entitled, "Radiological Safety Procedures For Storage and Handling of Strategic Materials" are recommended for use in the development of the program. If the Occupant Emergency Program has been developed to the sufficient degree necessary to meet the above factors then it can be forwarded for use as the Emergency Procedures Program.

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J. Notification of Incident

Immediate notification to the NRC Regional Office is required in the event of the occurence of any of the following situations:

a. Any individual receives a whole body radiation exposure of 25 rems or more; an exposure to the skin of the whole body of 150 rems or more; or an exposure to the feet, ankles, hands or forearms of 375 rems.

b. The release of radioactive materials in concentrations that when averaged over a 24 hour period, would exceed 500 times the limits specified in 10 CFR Part 20, Appendix B, Table II.

c. A loss of one work day or more has occured as a result of an incident.

d. Damage to property in excess of $1,000 has occured.

The NRC has special requirements for reporting overexposure of individuals and for monitoring reports. Also procedures must be established to assure shipment or transportation of all radioactive materials in accordance with the rules and regulations of the DOT, (Coast Guard, FAA, NRC and the International Atomic Energy Agency).