



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

NORTHERN STATES POWER COMPANY

DOCKET NO. 50-282

PRAIRIE ISLAND NUCLEAR GENERATING PLANT UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 70
License No. DPR-42

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Northern States Power Company (the licensee) dated April 10, 1984 as supplemented July 9, 1984, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

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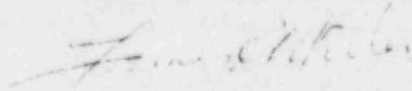
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-42 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 70, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



James R. Miller, Chief
Operating Reactors Branch #3
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 12, 1984.



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

NORTHERN STATES POWER COMPANY

DOCKET NO. 50-306

PRAIRIE ISLAND NUCLEAR GENERATING PLANT UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 64
License No. DPR-60

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Northern States Power Company (the licensee) dated April 10, 1984 as supplemented July 9, 1984, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public;
and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

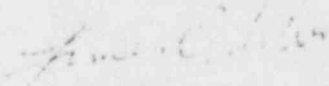
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-60 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 64, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION


James R. Miller, Chief
Operating Reactors Branch #3
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 12, 1984

ATTACHMENT TO LICENSE AMENDMENTS

AMENDMENT NOS. 70 AND 64 TO FACILITY OPERATING LICENSE

NOS. DPR-42 AND DPR-60

DOCKET NOS. 50-282 AND 50-306

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages as indicated. The revised pages are identified by amendment number and contain vertical lines indicating the area of changes.

Remove

TS-iv
Table TS.3.5-4
Table TS.4.2-1
Table TS.4.4-1
(page 4 of 5)
Table TS.4.10-2
(page 1 of 2)
Figure TS.4.10-1
Figure TS.4.10-2
Figure TS.6.1-2
TS.6.5-2
TS.6.5-3
TS.6.7-3

Insert

TS-iv
Table TS.3.5-4
Table TS.4.2-1
Table TS.4.4-1
(page 4 of 5)
Table TS.4.10-2
(page 1 of 2)
-
-
Figure TS.6.1-2
TS.6.5-2
TS.6.5-3
TS.6.7-3

APPENDIX A TECHNICAL SPECIFICATIONSLIST OF FIGURES

<u>TS FIGURE</u>	<u>TITLE</u>
2.1-1	Safety Limits, Reactor Core, Thermal and Hydraulic Two Loop Operation
3.1-1	Unit 1 and Unit 2 Reactor Coolant System Heatup Limitations
3.1-2	Unit 1 and Unit 2 Reactor Coolant System Cooldown Limitations
3.1-3	Effect of Fluence and Copper Content on Shift of RT_{NDT} for Reactor Vessel Steels Exposed to 550° Temperature
3.1-4	Fast Neutron Fluence ($E > 1$ MeV) as a Function of Full Power Service Life
3.1-5	DOSE EQUIVALENT I-131 Primary Coolant Specific Activity Limit Versus Percent of RATED THERMAL POWER with the Primary Coolant Specific Activity > 1.0 μ Ci/gram DOSE EQUIVALENT I-131
3.9-1	Prairie Island Nuclear Generating Plant Site Boundary for Liquid Effluents
3.9-2	Prairie Island Nuclear Generating Plant Site Boundary for Gaseous Effluents
3.10-1	Required Shutdown Reactivity Vs Reactor Boron Concentration
3.10-2	Control Bank Insertion Limits
3.10-3	Insertion Limits 100 Step Overlap with One Bottomed Rod
3.10-4	Insertion Limits 100 Step Overlap with One Inoperable Rod
3.10-5	Hot Channel Factor Normalized Operating Envelope
3.10-6	Deviation from Target Flux Difference as a Function of Thermal Power
3.10-7	Normalized Exposure Dependent Function $BU(E_j)$ for Exxon Nuclear Company Fuel
3.10-8	$V(2)$ as a Function of Core Height
4.4-1	Shield Building Design In-Leakage Rate
6.1-1	NSP Corporate Organizational Relationship to On-Site Operating Organization
6.1-2	Prairie Island Nuclear Generating Plant Functional Organization for On-Site Operating Group

UNIT 1 - Amendment No. 52, 59, 66, 70

UNIT 2 - Amendment No. 46, 53, 60, 64

Unit 1
 Unit 2
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 Amendment No. 46, 70
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 Amendment No. 40, 64

TABLE TS.3.5-4

INSTRUMENT OPERATING CONDITIONS FOR ISOLATION FUNCTIONS

<u>FUNCTIONAL UNIT</u>	<u>1</u> MINIMUM OPERABLE CHANNELS	<u>2</u> MINIMUM DEGREE OF REDUNDANCY	<u>3</u> PERMISSIBLE BYPASS CONDITIONS	<u>4</u> OPERATOR ACTION IF CONDITIONS OF COLUMN 1 OR 2 CANNOT BE MET
1. CONTAINMENT ISOLATION				
a. Safety Injection			(See Item No. 1 of Table TS.3.5-3)	Hot shutdown**
b. Manual	2	1		Hot shutdown
2. CONTAINMENT VENTILATION ISOLATION				
a. Safety Injection			(See Item No. 1 of Table TS.3.5-3)	Maintain Purge and Inservice Purge Valves closed if (1) conditions of a, b, or c cannot be met or (2) if conditions of b and c cannot be met during fuel handling in containment.
b. High Radiation in Exhaust Air	2	1		
c. Manual	2	1		
3. STEAM LINE ISOLATION				
a. Hi-Hi Steam Flow with Safety Injection	2	1		Hot shutdown**
b. Hi Steam Flow and 2 of 4 Low T_{avg} with Safety Injection	2	1		Hot shutdown**
c. Hi Containment Pressure	1/loop	1		Hot shutdown**
d. Manual	1/loop	-		Hot shutdown**
4. EMERGENCY COOLDOWN EQUIPMENT ROOM ISOLATION				
a. High temperature in ventilation system ducts	2	1		Hot shutdown**

**If minimum conditions are not met within 24 hours, steps shall be taken on the affected unit to place the unit in cold shutdown conditions.

SPECIAL INSERVICE INSPECTION REQUIREMENTS

<u>Component</u>	<u>Method of Examination</u>	<u>Extent and Frequency</u>
<u>REACTOR COOLANT PUMPS</u>		
1. Pump Flywheel	U.T.	An in-place ultrasonic volumetric examination of the areas of higher stress concentration at the bore and key way at approx. 3 year intervals, during the refueling or maintenance shutdown coinciding with the in-service inspection schedule as required by the ASME B & PV Code Section XI.
	M.T. or P.T. U.T.	A surface examination of all exposed surfaces and complete ultrasonic volumetric examination at approx. 10 year intervals, during the plant shutdown coinciding with the in-service inspection schedule as required by the ASME B & PV Code Section XI. Removal of the flywheel is not required to perform these examinations.

Notes:

1. The following definitions shall apply to the inspection methods employed in Table TS.4.2-1.
 - a. U.T. - Ultrasonic examination per IWA-2230.
 - b. P.T. - Liquid Penetrant examination per IWA-2220.
 - c. M.T. - Magnetic Particle examination per IWA-2220.

DPR-42 Amendment No. 43, 7/4, 70
DPR-60 Amendment No. 37, 5/3, 64

UNIT 1 AND UNIT 2 PENETRATION DESIGNATION FOR LEAKAGE TESTS

<u>Penetration Number</u>	<u>Penetration Description</u>	<u>Penetration Designation (Note 3)</u>	<u>Type of Test</u>
42B (53 in Unit 2)	Inservice Purge Supply Valves (6)	ABSVZ	C
42B (53 in Unit 2)	*Inservice Purge Supply Blind Flange(4)	Annulus	B
42C (54 in Unit 2)	Containment Heating Steam (4)	ABSVZ	B
42D, 42E	Spare		-
42F-1 (42E-1 in Unit 2)	Heating Steam Condensate Return(4)	ABSVZ	B
42F-2 (42E-2 in Unit 2)	Heating Steam Return Vent(4)	ABSVZ	B
42G	Spare		
43A (52 in Unit 2)	Inservice Purge Exhaust Valves(6)	ABSVZ	C
43A (52 in Unit 2)	*Inservice Purge Exhaust Blind Flange (4)	Annulus	B
43B,C,D	Spare		
44	Containment Vessel Pressurization (4)	ABSVZ	B
45	Reactor Makeup to Pressurizer Relief Tank	ABSVZ	C
46A, 46B (46C, 46D in Unit 2)	Auxiliary Feedwater	Note (2)	-
47	Electrical Penetration	Annulus	B
48	Low Head SI	Note (5)	-
49A	Instrumentation	Note (1)	-
49B (55 in Unit 2)	Demineralized Water (4)	ABSV	B

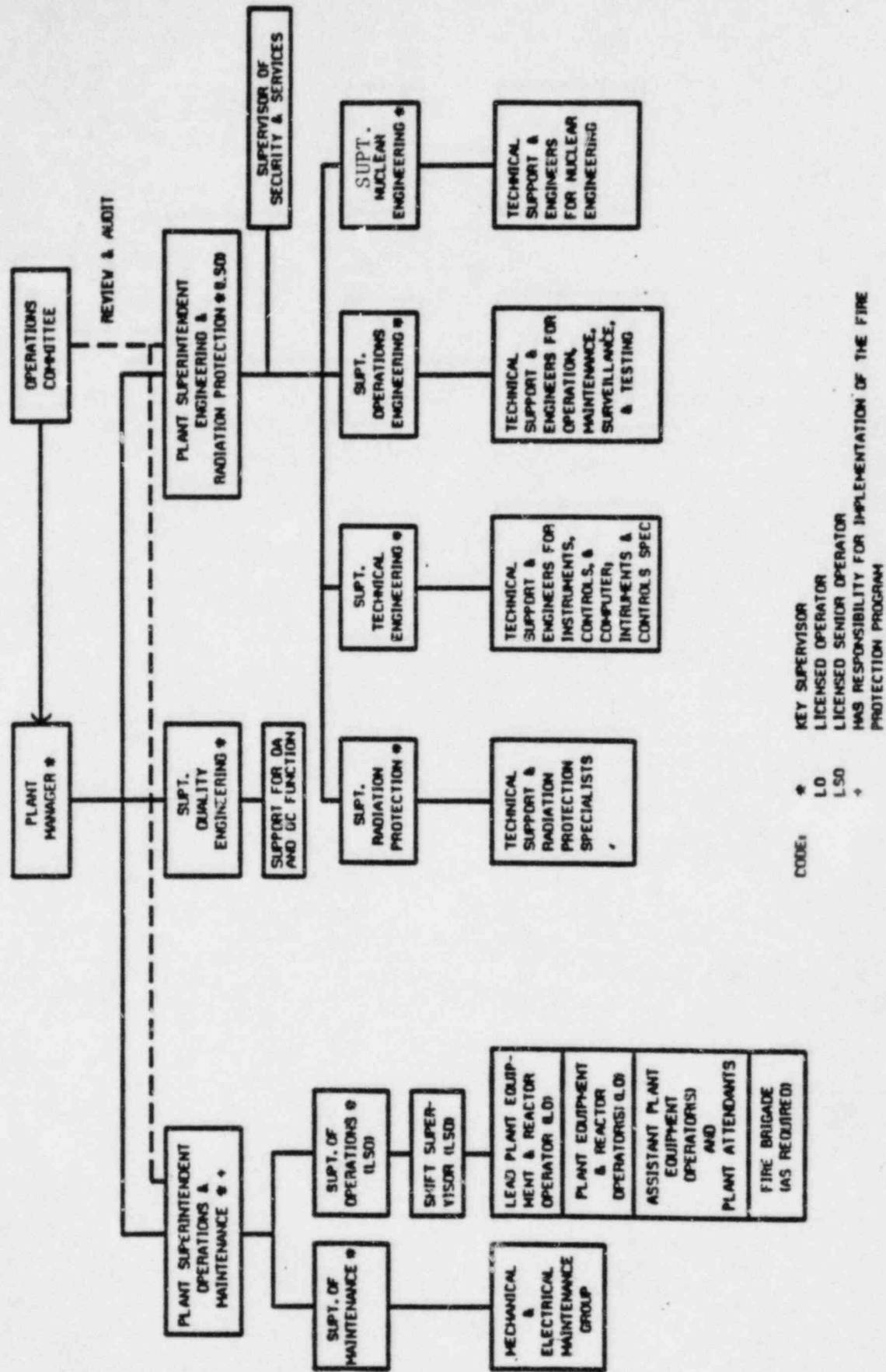
*Testing required following modification to inservice purge system of each unit during 1983 refueling outages.

Unit 1
Unit 2

Amendment No. 116, 70
Amendment No. 5/d, 64

TABLE TS.4.10-2
 MAXIMUM VALUES FOR THE LOWER LIMITS OF DETECTION (LLD) a,e

Analysis	Water (pCi/l)	Airborne Particulate or Gas (pCi/m ³)	Fish (pCi/kg, wet)	Milk (pCi/l)	Food Products (pCi/kg, wet)	Sediment (pCi/kg, dry)
gross beta	4 ^b	1 x 10 ⁻²				
³ H	2000(1000 ^b)					
⁵⁴ Mn	15		130			
⁵⁹ Fe	30		260			
^{58,60} Co	15		130			
⁶⁵ Zn	30		260			
⁹⁵ Zr-Nb	15 ^c					
¹³¹ I	1 ^{b,d}	7 x 10 ⁻²		1 ^d	60	
^{134,137} Cs	15(10 ^b), 18	1 x 10 ⁻²	130	15	60	150
¹⁴⁰ Ba-La	15 ^c			15 ^c		



CODE: * KEY SUPERVISOR
 LO LICENSED OPERATOR
 LSO LICENSED SENIOR OPERATOR
 † HAS RESPONSIBILITY FOR IMPLEMENTATION OF THE FIRE PROTECTION PROGRAM

FIGURE TS.6.1-2 PRAIRIE IS' AND NUCLEAR GENERATING PLANT FUNCTIONAL ORGANIZATION FOR ON-SITE GROUP

1. a. Paragraph 20.203 "Caution signs, labels, signals and controls". In lieu of the "Control device" or alarm signal required by paragraph 20.203(c)(2), each high radiation area in which the intensity of radiation is 1000 mRem/hr or less shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiation Work Permit (or continuous escort by a qualified person for the purpose of making a radiation survey) and any individual or group of individuals permitted to enter such areas shall be provided with a radiation monitoring device which continuously indicates the radiation dose rate in the area.
- b. The above procedure shall also apply to each high radiation area in which the intensity of radiation is greater than 1000 mRem/hr, except that doors shall be locked or attended to prevent unauthorized entry into these areas and the keys or key devices for locked doors shall be maintained under the administrative control of the Plant Manager.
2. A program shall be implemented to reduce leakage from systems outside containment that would or could contain highly radioactive fluids during a serious transient or accident to as low as practical levels. This program shall include the following:
 - a. Provisions establishing preventive maintenance and periodic visual inspection requirements, and
 - b. Integrated leak test requirements for each system at a frequency not to exceed refueling cycle intervals.

A program acceptable to the Commission was described in letters from L.O. Mayer, NSP, to Director of Nuclear Reactor Regulation, dated December 31, 1979 "Lessons Learned Implementation" and March 13, 1980, "1/1/80 Lessons Learned Implementation Additional Information".

3. A program shall be implemented which will ensure the capability to accurately determine the airborne iodine concentration in essential plant areas under accident conditions. This program shall include the following:
 - a. Training of personnel,
 - b. Procedures for monitoring, and
 - c. Provisions for maintenance of sampling and analysis equipment.

A program acceptable to the Commission was described in letters from L.O. Mayer, NSP, to Director of Nuclear Reactor Regulation, dated December 31, 1979 "Lessons Learned Implementation" and March 13, 1980, "1/1/80 Lessons Learned Implementation Additional Information".

4. A program shall be implemented which will ensure the capability to obtain and analyze reactor coolant, radioactive iodines and particulates in plant

Prairie Island Unit 1
Prairie Island Unit 2

Amendment No. 23, 46, 49, 70
Amendment No. 19, 40, 43, 64

gaseous effluents, and containment atmosphere samples under accident conditions. The program shall include the following:

- a. Training of personnel,
- b. Procedures for sampling and analysis,
- c. Provisions for maintenance of sampling and analysis equipment.

C. Maintenance and Test

The following maintenance and test procedures will be developed to satisfy routine inspection, preventive maintenance programs, and operating license requirements.

1. Routine testing of Engineered Safeguards and equipment as required by the facility License and the Technical Specifications.
2. Routine testing of standby and redundant equipment.
3. Preventive or corrective maintenance of plant equipment and systems that could have an effect on nuclear safety.
4. Calibration and preventive maintenance of instrumentation that could affect the nuclear safety of the plant.
5. Special testing of equipment for proposed changes to operational procedures or proposed system design changes.

D. Process Control Program (PCP)

The PCP shall be approved by the Commission prior to initial implementation. Changes to the PCP shall satisfy the following requirements:

1. A description of changes shall be submitted to the Commission with the Semi-Annual Radioactive Effluent Release Report for the period in which the change(s) were made. This submittal shall contain:
 - a. sufficiently detailed information to totally support the rationale for the change without benefit of additional or supplemental information;
 - b. a determination that the change did not reduce the overall conformance of the solidified waste product to existing criteria for solid wastes; and
 - c. documentation of the fact that the change has been reviewed and found acceptable by the Operations Committee.
2. Shall become effective upon review and acceptance by the Operations Committee.

5. Semiannual Radioactive Effluent Release Report. Routine radioactive effluent release reports covering the operation of the unit during the previous six months of operation shall be submitted within 60 days after January 1st and July 1st of each year.

The radioactive effluent release reports shall include a summary of the quantities of radioactive liquid and gaseous effluents as outlined in Appendix B of Regulatory Guide 1.21, Revision 1, June, 1974, with data summarized on a quarterly basis.

The report to be submitted 60 days after January 1 of each year shall include an assessment of the radiation doses from radioactive effluents released from the plant during the previous calendar year. This same report shall also include an assessment of the radiation doses from radioactive liquid and gaseous effluents to individuals due to their activities inside the site boundary (Figures 3.9-1 and 3.9-2) during the report period. All assumptions used in making these assessments (i.e., specific activity, exposure time and location) shall be included in these reports. The assessment of radiation doses shall be performed in accordance with the Offsite Dose Calculation Manual (ODCM) or standard NRC computer codes.

The report to be submitted 60 days after January 1 of each year shall also include an assessment of radiation doses to the likely most exposed member of the general public from reactor releases and other nearby uranium fuel cycle sources (including doses from primary effluent pathways and direct radiation) for the previous 12 consecutive months to show conformance with 40 CFR 190, Environmental Radiation Protection Standards for Nuclear Power Operation.

The radioactive effluent release reports shall include the following information for solid waste shipped offsite during the report period.

- a. container volume,
- b. total curie quantity (specify whether determined by measurement or estimate).
- c. principal radionuclides (specify whether determined by measurement or estimate),
- d. type of waste (e.g., spent resin, compacted dry waste, evaporator bottoms),
- e. type of container (e.g., LSA, Type A, Type B, Large Quantity), and
- f. solidification agent (e.g., cement, urea formaldehyde).

The radioactive effluent releases reports shall include unplanned releases from the site of radioactive materials in gaseous and liquid effluents on a quarterly basis, changes to the ODCM, a description of changes to the PCP, a report of when milk or vegetable samples cannot be obtained as required by Table 4.10-1, and changes in land use resulting in significant increases in calculated doses.

6. Annual Summaries of Meteorological Data. An annual summary of meteorological data shall be submitted for the previous calendar year in the form of joint frequency distributions of wind speed, wind direction, and atmospheric stability at the request of the Commission.