

DAIRYLAND POWER COOPERATIVE

La Crosse, Wisconsin

34601

August 6, 1979

In reply, please
refer to LAC-6440

DOCKET NO. 50-409

Director of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

SUBJECT: DAIRYLAND POWER COOPERATIVE
LA CROSSE BOILING WATER REACTOR (LACBWR)
PROVISIONAL OPERATING LICENSE NO. DPR-45
APPLICATION FOR AMENDMENT TO LICENSE

References: (1) DPC Letter, Madgett to Director of
Nuclear Reactor Regulation, LAC-5266,
dated April 20, 1978.
(2) NRC Letter, Ziemann to Madgett,
dated January 24, 1975.
(3) DPC Letter, Madgett to Miller, LAC-5327,
dated May 30, 1978.

Gentlemen:

In conjunction with our request to amend Provisional Operating License No. DPR-45 for increased storage capacity of LACBWR irradiated fuel, our letter (Reference 1) notified you of our request to also amend the existing license limitations of Section 2.B(2) with regard to receipt, possession and use of Uranium-235.

In that regard, this submittal contains the specific information prescribed in Reference 2 for modification of the subject license to a more generalized possession format relative to Special Nuclear Material, including U-235 as reactor fuel; Byproduct Material and Source Material. It is requested that the subject license be amended to conform with the general possession format. Accordingly, the following information is enclosed:

1. A proposed amendment to Provisional Operating License No. DPR-45, Section 2.B, conditions relating to possession and use limits (Enclosure 1 - line in right-hand border denotes proposed conditions).
2. Proposed Technical Specification (4/5.2.20) and bases for leak testing and surveillance of sealed sources (Enclosure 2).
3. A revision to the LACBWR FSAR, Safeguards Report for Operating Authorization (ACNP-65544), as Appendix G and containing the information described in Regulatory Guide 1.70.3 (Enclosure 3).

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A fee of \$12,300 has already been paid for the license amendment application for the modification of the spent fuel storage pool as submitted under references Nos. 1 and 3. Therefore we have determined that no fee is required.

Should there be any questions concerning this submittal, please contact us.

Very truly yours,

DAIRYLAND POWER COOPERATIVE

Frank Linder

Frank Linder, General Manager

FL:LGP:af

Enclosures

STATE OF WISCONSIN)
)
COUNTY OF LA CROSSE)

Personally came before me this 6th day of August, 1979, the above named Frank Linder, to me known to be the person who executed the foregoing instrument and acknowledged the same.

John P. Farley
Notary Public, La Crosse County
Wisconsin.
My Commission Expires Dec 12, 1982.

- (1) Pursuant to Section 104b of the Act and 10 CFR Part 50 - "Licensing of Production and Utilization Facilities", to possess, use, and operate the facility at the location designated in the application in accordance with the procedures and limitations described in the application and in this license;
- (2) Pursuant to the Act and 10 CFR Part 70, to receive, possess and use at any time special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Final Safety Analysis Report, as supplemented and amended;
- (3) Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;
- (4) Pursuant to the Act and 10 CFR part 30, to receive, possess and use at any time: (a) 100 millicuries each of any byproduct material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated radioactively contaminated apparatus and (b) up to 10 curies of Cesium-137 in the form of a sealed source for instrument calibration;
- (5) Pursuant to the Act and 10 CFR Parts 40 and 70, to receive, possess and use at any time 100 milligrams each of any source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated radioactively contaminated apparatus.
- (6) Pursuant to the Act and 10 CFR Parts 30 and 70, to receive, possess, but not separate, such byproduct and special nuclear materials as may be produced by operation of the facility.

PLANT SYSTEMS

4/5.2.20 SEALED SOURCE CONTAMINATION

LIMITING CONDITION FOR OPERATION

4.2.20 Each sealed source containing radioactive material either in excess of 100 microcuries of beta and/or gamma emitting materials or 5 microcuries of alpha emitting material, shall be free of \geq 0.005 microcuries of removable contamination.

APPLICABILITY: At all times.

ACTION:

- a. Each sealed source with removable contamination in excess of the above limits shall be immediately withdrawn from use and:
 1. Either decontaminated and repaired, or
 2. Disposed of in accordance with Commission Regulations.

SURVEILLANCE REQUIREMENTS

5.2.20.1 Test Requirements - Each sealed source shall be tested for leakage and/or contamination by:

- a. The licensee, or
- b. Other persons specifically authorized by the Commission or an Agreement State.

The test method shall have a detection sensitivity of at least 0.005 microcuries per test sample.

5.2.20.2 Test Frequencies - Each category of sealed sources (excluding startup sources and fission detectors previously subjected to core flux) shall be tested at the frequency described below.

- a. Sources in use - At least once per six months for all sealed sources containing radioactive materials;

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

1. With a half-life greater than 30 days (excluding Hydrogen 3), and
 2. In any form other than gas.
- b. Stored sources not in use - Each sealed source and fission detector shall be tested prior to use or transfer to another licensee unless tested within the previous six months. Sealed sources transferred without a certificate indicating the last test date shall be tested prior to being placed into use.
- c. Startup sources and fission detectors - Each sealed startup source and fission detector shall be tested within 31 days prior to being subjected to core flux or installed in the core and following repair or maintenance to the source.

5.2.20.3 Reports - A report shall be prepared and submitted to the Commission on an annual basis if sealed source leakage tests reveal the presence of ≥ 0.005 microcuries of removable contamination.

PLANT SYSTEMS

BASES

4.5.2.20 SEALED SOURCE CONTAMINATION

The limitations on sealed source removable contamination ensure that the total body or individual organ irradiation does not exceed allowable limits in the event of ingestion or inhalation of the probable leakage from the source material. The limitations on removable contamination for sources requiring leak testing, including alpha emitters, is based on 10 CFR 70.39(c) limits for plutonium. Quantities of interest to this specification which are exempt from the leakage testing are consistent with the criteria of 10 CFR Parts 30.11-20 and 70-19. Leakage of sources excluded from the requirements of this specification is not likely to represent more than one maximum permissible body burden for total body irradiation if the source material is inhaled or ingested.

G.1 MATERIALS SAFETY PROGRAM

The LACBWR radioactive source control program was established to promote the safe handling and use of radiation sources. The program describes accountability and recordkeeping practices. The responsibilities of key personnel are outlined both here and in various plant procedures. Procedures are available which describe source leak testing, receipt of radioactive material, and source control practices. These procedures supplement the radiation source control program which is described below.

A designated source controller is responsible for assuring that all registrable source records are properly maintained. These records include receipt, registration, inventory, leak tests, shipping, and dispense records. Leak tests and physical inventories are conducted every six (6) months. Additionally, designated source custodians are responsible for the daily handling and storage of sources.

All registrable sources are stored in a safe and orderly fashion. Storage areas are clearly designated with proper radiation warning signs. Sources requiring a locked and/or shielded storage location are determined on a case-by-case basis.

The LACBWR procedures existing as part of the source control program are listed below:

- HSP-01.1, "Radiation Source Control".
- HSP-02.2, "Wipe Test of Sealed Sources".
- HSP-02.9, "Calibration of Portable Radiation Survey Instruments".
- ACP-08.4, "Receiving Inspection - Radioactive Material".
- ACP-21.1, "LACBWR Training Responsibilities".

These procedures cover such topics as source handling precautions and training subjects pertaining to the source control program.

The safe storage and handling program features of fuel assemblies containing special nuclear material and other irradiated core components bearing byproduct material is described in detail in Section 5.2.11, Fuel and Control Rod Handling System. The facilities and equipment associated with the storage and handling of these components is also addressed in Section 5.2.11.

G.2 FACILITIES AND EQUIPMENT

All work with radioactive sources (e.g. dilution, preparation, and evaporating procedures) is performed in the chemistry laboratory. A ventilated hood equipped with a HEPA filter is located within the laboratory. All air in the chemistry laboratory is exhausted through this hood and is continuously monitored by a local air monitor located downstream of the filter.

G.3 PERSONNEL AND PROCEDURES

The Health and Safety Department is responsible for the handling and monitoring of all radioactive sources at LACBWR. The employees of this department have completed the Nuclear Navy Program and/or have received a college degree in Health Physics or a related science. Health and Safety Department personnel must also meet certain minimum requirements as determined by LACBWR management.

Health and Safety Department personnel are trained annually in various Health Physics subjects. Employees are trained in source care, handling, and other pertinent techniques.

The Operations Department is responsible for the physical movement and transfer of LACBWR core components bearing special nuclear material, and byproduct material. Operations personnel directly associated with the handling of these materials are licensed Senior Reactor Operators, licensed Reactor Operators or Operator Trainees. Core component maneuvers are directly supervised by an individual licensed as a Senior Reactor Operator. Operations personnel receive training annually in radiation protection practices including the use of personnel metering and monitoring instruments, applicable radiation limits, contamination and radiation control. Summary procedures involving core component handling and transfer are provided in Section 5.2.11, Fuel and Control Rod Handling, and Section 13.3.5, Refueling Procedures. The Operating Manual procedures and Special Procedures which detail the necessary steps for safe transfer and handling of core component, contain the necessary prerequisites, precautions and requirements needed when handling radioactive material. Included are the requirements for adequate shielding, criticality and radiation monitoring, appropriate clothing, etc.

G.4 REQUIRED MATERIALS

The only byproduct material bearing source in excess of 100 millicuries is a sealed source used for instrument calibrations containing 10 Curies of Cs-137.