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(608) 788-4000

April 28, 1985

In response, please refer to LAC 10783

Docket Number 50-409

Mr. John Zwolinski, Chief Operating Reactors Branch No. 5 Director of Nuclear Reactor Regulation Division of Operating Reactors U.S. Nuclear Regulatory Commission Washington, DC 20555

Subject: Dairyland Power Cooperative (DPC) La Crosse Boiling Water Reactor (LACBWR) Provisional Operating License No. DPR-45 Request for Exemption From NUREG-0737, Item II.F.1, Attachment 1 Positions 1 and 2, Noble Gas Concentration Upper Range Capability of 10⁵ uCi/cc (Xe-133 Equivalent)

References:

DAIRYLAND

- 1. LACBWR Technical Specifications Table 4.5-1, Action (1).
- DPC Letter, Linder to Eisenhut, LAC-8275, Post-TMI Requirements (Generic Letter 82-05), dated May 7, 1982.
- 3. DPC Letter, Linder to Crutchfield, LAC-7930, NUREG-0737, Status of Items II.F.1.1 and II.F.1.2, dated November 18, 1981.
- DPC Letter, Linder to Crutchfield, LAC-7180, TMI-Short Term Lessons Learned (NUREG-0578), Dated October 10, 1980.
- 5. 10 CFR 170.12

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Dear Mr. Zwolinski:

As indicated in NUREG-0737 Item II.F.1 Attachment 1 Positions 1 and 2, the noble gas effluent monitor installed at nuclear power plants "shall be provided for the total range of concentration extending from normal condition concentrations to a maximum of 10^5 uCi/cc (Xe-133)," since "an upper range capacity of 10^5 uCi/cc (Xe-133) is considered to be practical and should be installed in all operating plants." NUREG-0737 Table II.F.1-1 Design Basis Maximum Range further states that the 10^5 uCi/cc level of effluent noble gas concentration is applicable to "undiluted containment exhaust gases (eg. PWR reactor building purge, PWR drywell purge through the standby gas treatment system and undiluted PWR condenser air removal system exhaust)."

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Our letter (Reference 4) indicated that we were investigating the application of an Eberline SPING-4 to monitor stack releases of noble gases in the range of approximately 10^{-7} to 10^5 uCi/cc. Our letter (Reference 3), indicated that we had installed an Eberline SPING-4 to monitor our stack effluent noble gas releases in January, 1981. We stated that Eberline Instrument Corporation certified that the SPING-4 meets all requirements, purposes and design basis maximum ranges as outlined in Table II.F.1-1 of NUREG-0737. Our letter (Reference 2) stated that operational problems identified in our letter (Reference 3) were resolved as of January 1, 1982. We submitted post-accident monitoring instrumentation including effluent noble gas monitoring technical specifications which were approved and are implemented (Reference 1).

The SPING-4 stack monitor which continuously samples the LACBWR stack, has two channels (7 and 9) which are designated as post accident high level noble gas monitors. SPING-4 Channel 7 is capable of detecting a noble gas concentration of 9.2 x 10-4 to 1.8 x 103 uCi/cc of Xe-133 equivalent with its in-line energy compensated GM tube. SPING-4 Channel 9 is capable of detecting a noble gas concentration of 1.0 x 10⁻¹ to 1.4 x 10⁵ uCi/cc of Xe-133 equivalent with its off-line energy compensated GM tube. Our post accident stack high range noble gas effluent monitor technical specifications (Reference 1) specify that the high alarm set point for the SPING-4 noble gas monitor be set at less than or equal to 1.25 x 10² uCi/cc. SPING-4 Channel 7 can easily detect this concentration of noble gases in the stack. Furthermore, our technical specifications (Reference 1) state that "with the number of channels less than the minimum required, either restore the inoperable channels(s) to operable status within 72 hours, or (monitor) stack releases using an alternate channel of the stack monitoring system (Range 10° - 10³ uCi/cc for noble gas).

Since stack noble gas release rates are dependent on the source available for release, the theoretical post accident stack noble gas concentrations are dependent upon the source term. Therefore, the noble gas source term for a 165 MWt reactor is considerably less than that for a 3000 MWt reactor.

We are not certain what is the basis for the 10⁵ uCi/cc design basis maximum range for stack noble gas activity concentration as described in NUREG-0737 Item II.F.1. Attachment 1. If, however, it is based upon the core inventory of noble gases of a 3000 MWt reactor, as mentioned previously, and estimated source terms as described in II.B.2, we believe that our SPING-4 channel 7 will adequately monitor any foreseeable noble gas releases from our stack in a post accident condition. Mr. John Zwolinski, Chief April 28, 1985 Page Three

Based upon LACBWR's Safeguards Report Table 14.8, in an accident condition which involves 100 percent release of noble gases from the fuel $(3.61 \times 10^7 \text{ Ci})$ to the Containment Building, the noble gas concentration in the Containment Building after dispersion to the free air spaces (7.48 x 10^3 m^3) would be approximately 4.8 x 10^3 Ci/m^3 at T₃₀ minutes. If the Containment Building exhaust ventilation system somehow resumed operation, the initial noble gas concentration in the stack would be approximately 6.13 x 10² to 1.22 x 10³ uCi/cc with two and one stack blowers in operation respectively. With the Containment Building exhaust ventilation system isolated, as expected, the initial noble gas concentration in the stack, assuming a designed basis leakage rate of 0.1 percent per 24 hours at 52 psig (initial), with no blowers in operation, would be approximately 1.1 x 103 uCi/cc. If one blower were in operation, the stack noble gas concentration would be approximately 1.25 x 10-1 uCi/cc, and if both stack blowers were in operation, the concentration would be approximately 6 x 10-2 uCi/cc. The concentrations would be within the range of our SPING-4 Channel 7 detector.

We request that we be exempted from the 10⁵ uCi/cc design basis maximum range of NUREG-0737 Attachment 1, and be permitted, based upon our lower source term to have a design basis maximum range requirement for our high range noble gas effluent monitor of 10³ uCi/cc.

As apparently required by Reference 5, a check in the amount of \$150.00 for review of this request for exemption from NUREG-0737 will be sent by separate correspondence to the NRC Office of Administration.

If you have any additional questions, please contact us.

Sincerely,

DAIRYLAND POWER COOPERATIVE

Frank Linder General Manager

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cc: James G. Keppler, Region III Resident Inspector Dick Dudley Clarence Riederer Mr. John Zwolinski, Chief April 28, 1985 Page Four

STATE OF WISCONSIN

COUNTY OF LA CROSSE)

Personally came before me this **30** day of **_______**, 1985, the above named, Frank Linder, to me known to be the person who executed the foregoing instrument and acknowledged the same.

Notary Publ**i**, La Crosse County Wisconsin

My commission expires on February 21, 1988