



**CENTERIOR
ENERGY**

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June 18, 1993
PY-CEI/NRR-1647 L

U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, D. C. 20555

Perry Nuclear Power Plant
Docket No. 50-440
License Amendment Request:
Revise Technical Specification
Figure 5.1.1-1 and Associated
References to This Figure

Gentlemen:

Enclosed is a request for amendment of the Facility Operating License (NPF-58) Appendix A Technical Specifications for the Perry Nuclear Power Plant Unit 1.

This License Amendment application proposes a change to divide Figure 5.1.1-1 into Figure 5.1.1-1a which depicts the geographical areas for calculating liquid effluents and Figure 5.1.1-1b depicting the Exclusion area around the reactor and the area for calculating gaseous effluents.

Attachment 1 provides the Summary, Background, Basis for the Proposed Change, Description of the Proposed Changes and the Environmental Consideration. Attachment 2 is a copy of the marked-up Technical Specification pages. Attachment 3 provides the Significant Hazard Consideration.

If you have any questions, please feel free to call.

Sincerely,


Robert A. Stratman *For RAS*

RAS:TSH:ss 220032

Attachments

cc: NRC Project Manager
NRC Resident Inspector Office
NRC Region III
State of Ohio

Operating Companies
Cleveland Electric Illuminating
Toledo Edison

9306250108 930618
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ADD 1

SUMMARY

This proposed License Amendment to the Perry Nuclear Power Plant (PNPP) Technical Specifications would revise Figure 5.1.1-1, which currently depicts both the geographical areas utilized for calculating liquid and gaseous effluent doses, and the Exclusion Area surrounding the reactor. Proposed Figure 5.1.1-1a will show the geographical areas utilized for liquid effluent calculations, and Figure 5.1.1-1b will be added to show the geographical areas utilized for gaseous effluent calculations and to show the Exclusion Area boundary. References to Figure 5.1.1-1 would be revised as appropriate throughout the Technical Specifications. This change would resolve discrepancies between this figure and the regulatory guidance documents/PNPP licensing basis. The change would allow the Technical Specifications to more precisely reflect the guidance given in NUREG-0133 "Preparation of Radiological Effluent Technical Specifications for Nuclear Power Plants" and the information contained in the PNPP Updated Safety Analysis Report (USAR).

BACKGROUND

The current Technical Specification Figure 5.1.1-1 is a composite overlay of two separate figures, one for liquid effluents and one for gaseous effluents. NUREG-0133 recommends the use of two figures, one showing the unrestricted area boundary for liquid effluents and the second showing the unrestricted area boundary for gaseous effluents (along with the exclusion area boundary). The preparer of the composite map in the current Technical Specifications apparently used a single style of demarcation line to delineate both the unrestricted area boundary for gaseous effluents (also known as the site boundary) and the unrestricted area boundary for liquid effluents. This was done even though the intent of the figure is to separately show the "UNRESTRICTED AREA FOR LIQUID EFFLUENTS AND SITE BOUNDARY FOR GASEOUS EFFLUENTS" (taken from title of Figure 5.1.1-1.).

The site boundary line is used to divide the land owned by the licensee from that land which is neither owned, nor leased nor otherwise controlled by the licensee, and it should not have been considered to extend along the shoreline. The unrestricted area is an area where the licensee does not control access for the purpose of protecting individuals from exposure to radiation and radioactive materials. The exclusion area boundary was established during the plant siting process, and is not applicable to any effluent calculations performed during normal plant operation, but is utilized for gaseous dose calculations for design-basis accidents.

BASIS FOR THE PROPOSED CHANGE

The guidance given in NUREG-0133, in the PNPP licensing basis in USAR Section 2.1 "Geography and Demography", and in the BASES of the Technical Specifications indicate that the unrestricted area for dose calculations resulting from gaseous effluents should be applied to land based sectors, while the water area should also be included in the unrestricted area when calculating dose resulting from liquid effluents.

NUREG-0133 presents the guidance for developing the Radiological Effluent Technical Specifications. NUREG-0133 recommends the use of two figures, one showing the unrestricted area boundary for liquid effluents and the second showing the unrestricted area boundary for gaseous effluents (along with the exclusion area boundary). Figures 5.1.1-1a and 5.1.1-1b will provide the information in the format suggested by the NUREG.

Gaseous Effluents

The NUREG defines that the unrestricted area for gaseous releases does not include areas over water. Specifically, it states that "the UNRESTRICTED AREA boundary may coincide with the exclusion (fenced) area boundary, as defined in 10CFR100.3(a), may include land areas owned by the licensee, provided that occupancy is controlled by the licensee for the purposes of meeting the requirements of 10CFR20, but does not include areas over water bodies" (emphasis added). Considering the unrestricted area for gaseous releases does not include areas over bodies of water, it is clear that the unrestricted area boundary line for gaseous effluents (also known as the site boundary) should not be drawn along the shoreline of Lake Erie.

Consistent with the NUREG, USAR Section 2.1.1.3 entitled "Boundaries for Establishing Effluent Release Limits" discusses the unrestricted area on page 2.1-3, defining it as "the area beyond the SITE BOUNDARY". USAR Figure 2.1-3 is a plant site map that clearly shows the plant site boundary line terminating where it meets the lakeshore. This termination point is consistent with the proposed site boundary line to be shown on new Figure 5.1.1-1b.

Four Technical Specifications (3.11.2.1 "Gaseous Effluents Dose Rate," 3.11.2.2 "Gaseous Effluents Dose-Noble Gases," 3.11.2.3 "Gaseous Effluents Dose-Iodine-131, Iodine-133, Tritium and Radionuclides in Particulate Form" and 3.11.2.5 "Ventilation Exhaust Treatment Systems") limit the release of gaseous radioactive effluents and will be revised to reference the new Figure 5.1.1-1b. As stated in their BASES, their purpose is to ensure meeting the applicable 10CFR20 and 10CFR50 Appendix I criteria on doses to a MEMBER OF THE PUBLIC (either outside or within the SITE BOUNDARY). In order to meet these criteria, the site boundary is considered to be the beginning of the unrestricted area for gaseous effluent calculations performed in accordance with these three Specifications. This is because the amount of time spent by a MEMBER OF THE PUBLIC who may engage in activities inside the site boundary is considered minimal as compared to someone who is assumed to live outside of the site boundary. The BASES of Specification 3.11.2.1 recognize that although MEMBERS OF THE PUBLIC may at times be within the site boundary, their occupancy times "will be sufficiently low to compensate for any increase in the atmospheric diffusion factor above that for the SITE BOUNDARY." Therefore, their radiation dose resulting from those activities is separately assessed in accordance with Technical Specification 6.9.1.7 "SEMIANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT."

These Specifications (for gaseous dose rate, noble gas, iodine and particulates) therefore ensure that annual average exposures to a MEMBER OF THE PUBLIC who is assumed to live in the unrestricted area (just outside of the site boundary) are unlikely to be substantially underestimated. Specifically, the pathways in the unrestricted area for gaseous effluents are

examined for potential contributions from (1) direct air doses from noble gases, (2) inhalation of airborne radionuclides, (3) deposition onto green leafy vegetation with subsequent consumption by man, (4) deposition onto grassy areas where milk-producing animals graze with consumption of meat and milk by man, and (5) deposition on the ground with subsequent exposure of man.

As a result of all of the above, it can be seen that the areas over water bodies are not applicable for the gaseous effluent calculations (dose rate, noble gas, and particulates). This is now clearly shown in Figure 5.1.1-1b.

Liquid Effluents

Figure 5.1.1-1a defines the unrestricted area boundary for liquid effluents. While NUREG-0133 states that areas over (emphasis added) water bodies are not applicable for the gaseous effluent calculation, for liquid effluents it discusses the effluent flow into the receiving water body in an unrestricted area. As such, the water itself should be considered part of the unrestricted area for liquid effluent calculations.

Three Technical Specifications (3.11.1.1 "Liquid Effluents Concentration," 3.11.1.2 "Liquid Effluents Dose" and 3.11.1.3 "Liquid Radwaste Treatment System") limit the release of liquid radioactive effluents and will be revised to reference the new Figure 5.1.1-1a. As stated in the BASES, the purpose for Technical Specifications 3.11.1.1 and 3.11.1.3 are to control the concentrations of radioactive materials released in liquid effluents to unrestricted areas. This will ensure that the levels of radioactive materials in bodies of water in unrestricted areas will result in exposures less than the design objectives given in 10CFR50 Appendix J, Section II.A to a member of the public.

Specification 3.11.1.2 implements several sections of Appendix I, one of which is that the operation of the facility will not result in radionuclide concentration in the drinking water supplies in excess of regulatory limits. This Specification also ensures that annual average exposure to a MEMBER OF THE PUBLIC through appropriate pathways is unlikely to be substantially underestimated. Specifically, the pathways in the unrestricted area for liquid effluents include potential contributions from potable water, aquatic foods and shoreline deposits.

Therefore, it is appropriate for these Specifications (liquid effluent concentration and dose) that the lake be shown as part of the unrestricted area for liquid effluents, and to provide a clear demarcation between the lake and the land identified as the liquid effluent unrestricted area boundary as shown in the new Figure 5.1.1-1a.

Technical Specification 5.1 "SITE" which refers to Figure 5.1.1-1, will be revised to reference the Figures 5.1.1-1a and 5.1.1-1b. Additionally, the information currently contained in Specification 5.1 which addresses the exclusion area is contained in the PNPP USAR Section 2.1.2 and is not considered necessary for duplication in this "DESIGN FEATURES" section of the Technical Specification. This section is therefore being revised to be consistent with NUREG-1433 "Standard Technical Specification, General Electric Plants, BWR-6".

DESCRIPTION OF THE PROPOSED CHANGE

Refer to Attachment 2 for a marked-up copy of the subject Technical Specification pages.

Technical Specifications 3.11.1.1, 3.11.1.2, 3.11.1.3

Revise these sections to reference Figure 5.1.1-1a.

Technical Specifications 3.11.2.1, 3.11.2.2, 3.11.2.3, 3.11.2.5

Revise these sections to reference Figure 5.1.1-1b

Section 5.1.1

Revise this section to describe Figures 5.1.1-1a and 5.1.1-1b. Revise the exclusion area boundary information to be consistent with NUREG-1433 "Standard Technical Specification, General Electric Plants, BWR-6".

Figure 5.1.1-1a

Revise this figure to delineate the Unrestricted Area for Liquid Effluents.

Figure 5.1.1-1b

Revise this figure to delineate the Site Boundary for Gaseous Effluents and the Exclusion Area Boundary.

Technical Specifications Index (5.1 Site)

Revise index to reflect the two new figures.

ENVIRONMENTAL CONSIDERATION

The proposed Technical Specification change has been reviewed against the criteria of 10CFR51.22 for environmental considerations. The proposed change does not involve a significant hazards consideration (see Attachment 3 to this letter), nor does it increase the types and amounts of effluents that may be released offsite, nor does it significantly increase individual or cumulative occupational radiation exposures. Based on the foregoing, it has been concluded that the proposed Technical Specification change meets the criteria given in 10CFR51.22(c)(9) for a categorical exclusion from the requirement for an Environmental Impact Statement.