

Station (LGS), Units 1 and 2 operating licenses. The proposed amendment would increase the licensed thermal power level from 3293 Mwt to 3458 Mwt. This request is in accordance with the generic boiling water reactor (BWR) power uprate program established by the General Electric Company (GE) and approved by U.S. Nuclear Regulatory Commission (NRC) staff in a letter of September 30, 1991.

The proposed action involves NRC issuance of a license amendment to increase the authorized power level by changing the operating license, including Appendix A of the license (Technical Specifications). No change is needed to Appendix B of the license (Environmental Protection Plan—Non-radiological).

The Need for the Proposed Action

The proposed action is needed to permit an increase in the licensed core thermal power from 3293 Mwt to 3458 Mwt and provide the licensee with the flexibility to increase the potential electrical output of LGS, Units 1 and 2, providing additional electrical power to service domestic and commercial areas.

Environmental Impacts of the Proposed Action

The "Final Environmental Statement (FES) Related to Operation of Limerick Generating Station, Units 1 and 2" was issued April 1984 (NUREG-0974). The licensee submitted GE Topical Report, NEDC-32225P, "Power Rerate Safety Analysis Report for Limerick Generating Station, Units 1 and 2," Class III, dated September 1993, as Attachment 3 to the December 9, 1993 submittal. NEDC-32225P contains the safety analysis prepared by GE to support this license change request and the implementation of power uprate at LGS, Units 1 and 2. The analyses and evaluations supporting these proposed changes were completed using the guidelines in GE Topical Report NEDC-31897P-A, "Generic Guidelines for General Electric Boiling Water Reactor Power Uprate," Class 3, dated May 1992, and NEDC-31948P, "Generic Evaluations of General Electric Boiling Water Reactor Power Uprate," Class III, dated July 1991. The NRC reviewed and approved GE Topical Reports NEDC-31897P-A and NEPC-31948P in a September 30, 1991, letter and in a letter from W. Russell, NRC, to P. Marriotte, GE, dated July 31, 1992.

The licensee provided information regarding the nonradiological and radiological environmental effects of the proposed action in the December 9, 1993 application and supplemental information in the January 6, and

January 23, 1995 submittal. The staff has reviewed the potential radiological and non-radiological effects of the proposed action on the environment as described below.

Non-Radiological Environmental Assessment

Power uprate will not change the method of generating electricity nor the method of handling any influents from nor effluents to the environment. Therefore, no new or different types of environmental impacts are expected.

The staff reviewed the nonradiological impact of operation at uprated power levels on influents from the Perkiomen Creek, Schuylkill and Delaware Rivers and effluents to the Schuylkill River. LGS, Units 1 and 2 each have a closed-loop circulating water system and cooling tower for dissipating heat from the main turbine condensers. The cooling towers are operated in accordance with the requirements of National Pollution Discharge Elimination System (NPDES) Permit No. PA0051926. The current permit was renewed on December 12, 1994 and is effective through December 31, 1999. The only increase in LGS water intake due to operation at power uprate conditions is due to increased evaporation in the hyperbolic natural draft cooling towers. In the January 6, 1995 letter, the licensee indicated that the existing consumptive flow will conservatively increase from 38,059,065 to 40,723,200 gallons per day (total for both units), depending on atmospheric conditions. The velocity of the intake water will increase less than 7 percent. Makeup is drawn from the Schuylkill River, Perkiomen Creek, or the Delaware River, depending on flow and temperature. When makeup is drawn from the Delaware River through the Point Pleasant Pumping Station via the Bradshaw Station, 3 percent additional evaporative losses must be considered. The increase makeup flow (including evaporative losses), is within the existing water diversion consumptive use limit of 42,000,000 gallons per day specified in the original permitting evaluations.

Makeup water requirements for systems and components other than the cooling towers are not expected to change due to operation at uprated power levels. The licensee indicated that the only potential change is due to increased reactor operating pressure which could slightly increase leakage through valve packing. System leakage, however, is processed through the liquid radwaste system and returned to the condensate storage tank for reuse. Based on the above considerations, the

staff concluded that the effect of makeup requirements at uprated power levels on the environment is not significant.

The licensee does not expect any increase in the cooling tower blowdown due to the physical limitation in the blowdown system. Likewise, the licensee does not expect any increase in the blowdown discharge velocity. However, the licensee indicated that the blowdown discharge temperature will increase less than 0.1°F. This temperature rise will have an insignificant effect on the thermal plume. This increase is within the NPDES permit limit.

An increase in cooling tower drift is not anticipated for operation at uprated conditions. Drift is a function of physical geometry, water flow, and wind conditions, none of which are changed by power uprate. Therefore, the licensee has indicated that the original evaluation of impacts to the terrestrial environment is not altered.

The only changes to the cooling tower water chemistry are due to increased evaporation from the towers. Concentrations of dissolved and suspended solids in the blowdown will increase approximately less than 7 percent, which is within NPDES permit limits. The licensee stated that the use of biocides and corrosion inhibitors in the circulating water system may change as a result of operation at uprated power levels. However, the licensee stated that change in chemical usage would not impact existing NPDES permit limitations.

Nonradiological effluent discharges from other systems were also considered. Nonradiological effluent limits for such systems as yard drains, sewage treatment plant, and laundry drains are established in the NPDES permit. Discharges from these systems are not expected to change significantly, if at all, because operation at uprated power levels is governed by the limits in the NPDES permit. Thus, the impact on the environment from these systems as a result of operation at uprated power levels is not significant.

Operation at uprated power levels will not result in increased noise generation from the majority of plant equipment. Some of this equipment, such as the main turbine and generator will operate at the same speed and thus will not contribute to increased offsite noise. Other major plant equipment is located within plant structures and will not lead to increased offsite noise levels. The main station transformers will operate at an increased kilovolt-ampere level which will cause an insignificant increase in the overall noise level. The