

UNITED STATES NUCLEAR REGULATORY COMMISSION  
LUMINANT GENERATION COMPANY LLC  
DOCKET NOS. 50-445 AND 50-446  
COMANCHE PEAK STEAM ELECTRIC STATION, UNITS 1 AND 2  
FINAL ENVIRONMENTAL ASSESSMENT AND  
FINDING OF NO SIGNIFICANT IMPACT  
RELATED TO THE PROPOSED LICENSE AMENDMENT  
TO INCREASE THE MAXIMUM REACTOR POWER LEVEL

AGENCY: U.S. Nuclear Regulatory Commission (NRC)

SUMMARY: As required by Title 10 of the *Code of Federal Regulations* (10 CFR) Part 51, the NRC has prepared a final Environmental Assessment (EA) associated with its evaluation of a request by the TXU Generation Company LP (subsequently renamed Luminant Generation Company LLC, the licensee), for a license amendment to increase the maximum thermal power at the Comanche Peak Steam Electric Station (CPSES), Units 1 and 2, from 3458 megawatts thermal (MWt) to 3612 MWt at each unit. The NRC staff did not identify any significant impact from the information provided in the licensee's stretch power uprate (SPU) application for CPSES, Units 1 and 2 or from the NRC staff's independent review. The final EA and Finding of No Significant Impact are being published in the *Federal Register*.

The NRC published a draft EA and finding of no significant impact on the proposed action for public comment in the *Federal Register* on April 30, 2008 (73 FR 23503). No comments were received.

## ENVIRONMENTAL ASSESSMENT

The NRC is considering issuance of an amendment to Facility Operating License Nos. NPF-87 and NPF-89, issued to Luminant Generation Company LLC, for operation of the CPSES, Units 1 and 2, located in Somervell County, Texas. Therefore, consistent with Section 51.21 of Title 10 of the *Code of Federal Regulations* (10 CFR), the NRC is issuing this final EA and finding of no significant impact.

### Identification of the Proposed Action:

The proposed action would revise the CPSES, Units 1 and 2 operating licenses and technical specifications (TSs) to increase the licensed rated power by 4.5 percent from 3458 MWt to 3612 MWt. The proposed action is in accordance with the licensee's application dated August 28, 2007, as supplemented by letters dated October 24, November 7, and December 3, 2007, January 10, 29, and 31, February 21, 26, and 28, March 6, April 17, and May 14, 2008. The letters dated April 17, and May 14, 2008, were received after issuance of the Draft EA, provided supplemental clarifying information, but did not have any impact on the Draft EA.

### The Need for the Proposed Action:

The proposed action permits an increase in the licensed core thermal power from 3458 MWt to 3612 MWt for the CPSES, Units 1 and 2, providing the flexibility to obtain a higher electrical output from the CPSES, Units 1 and 2.

### Environmental Impacts of the Proposed Action:

The licensee has submitted an environmental evaluation supporting the proposed SPU and provided a summary of its conclusions concerning the radiological and non-radiological environmental impacts of the proposed action.

Radiological Impacts:

The licensee evaluated the impacts of the proposed SPU on radioactive liquid waste production, processing, discharge into the environment, resultant dose to members of the public, and impact to Squaw Creek Reservoir (SCR). There will be an increase (approximately 6.5 percent for long-lived activity) in the equilibrium radioactivity in the reactor coolant, which in turn will result in a maximum increase of 6.5 percent in the radioactivity content of the liquid releases. Tritium levels are also expected to increase by 6.5 percent in the discharged liquid. This will result in increased aqueous tritium concentrations in the SCR.

The evaluation shows that even with the small increase in the radioactivity being discharged into the environment, the projected dose to the maximally exposed member of the public, while slightly increased, will remain well below the As Low As Reasonably Achievable (ALARA) criteria in Appendix I to 10 CFR Part 50. Also, the tritium concentration levels in SCR will remain well below the reporting limits in the CPSES Offsite Dose Calculation Manual (ODCM), which is based on NRC reporting criteria.

The licensee evaluated the impacts of the proposed SPU on gaseous radioactive wastes. Gaseous radioactive wastes are activation gases and fission product radioactive noble gases, which come from radioactive system leakage, process operations including volume control tank (VCT) venting, gases used for tank cover gas, and gases generated in the radiochemistry laboratory. The evaluation shows that the proposed SPU will not significantly increase the inventory of gases normally processed in the gaseous waste management system. This is based on no change to plant system functions and no change to the gas volume inputs.

The activity of radioactive gaseous nuclides present in the waste gas system will increase as a result of the SPU. This is due to the increased levels of gases in the reactor coolant system and the actions performed in the VCT. However, the operation of the waste gas system will not change and will continue to allow for decay of the short-lived radionuclides.

Tritium will remain the largest component of the gaseous effluents, the largest contributor being from evaporation from the Spent Fuel Pools. The proposed SPU will result in an increase (approximately 9.5 percent for noble gases, 6.6 percent (reactor coolant) and 12.6 percent (secondary coolant) for I-131, and 6.5 percent for long-lived activity) in the equilibrium radioactivity in the reactor coolant, which in turn increases the activity in the gaseous waste disposal systems and the activity released into the atmosphere (estimated to increase by 9.5 percent for noble gases, 6.5 percent for particulates including Tritium, and 12.6 percent limiting increase for iodines).

The evaluation shows that even with the small increase in the gaseous radioactivity being discharged into the environment, the projected dose to the maximally exposed member of the public, while slightly increased, will remain well below the ALARA criteria in Appendix I to 10 CFR Part 50.

While the SPU will slightly increase the activity level of radioactive isotopes in the reactor coolant system and the volume of radioactive liquid generated from leakage and planned drainage, there will only be a minimal effect on the generation of radioactively contaminated sludge and resin solids processed as radwaste. The currently installed radwaste system and its total volume capacity for handling solid radwaste will not be affected.

For the long-term operation of the plant with the SPU, the dose to an offsite member of the public from the onsite storage of solid radwaste was estimated to increase by approximately 7.2 percent. This is based on several assumptions: (1) the current radwaste decays and its dose contribution decreases; (2) the stored radwaste is routinely moved offsite for disposal; (3) the radwaste generated post SPU enters into storage; and (4) the plant capacity factor approaches the target of 1.0. The radiation dose from direct shine is cumulative based on the waste generated and stored onsite from all units over the plant's lifetime. CPSES ODCM contains the requirements to ensure compliance with the radiation dose limits in 10 CFR Part 20

and the Environmental Protection Agency's 40 CFR Part 190. Therefore, while a small increase in offsite radiation dose is expected, it will remain within regulatory limits.

The radiation exposure to plant workers from the SPU is expected to be kept to a minimum based on the design features at CPSES, Units 1 and 2, and the Radiation Protection Program. The design features include: (1) shielding, which is provided to reduce levels of radiation; (2) ventilation, which is arranged to control the flow of potentially contaminated air; (3) an installed radiation monitoring system, which is used to measure levels of radiation in potentially occupied areas and measure airborne radioactivity throughout the plant; and (4) respiratory protective equipment, which is used as prescribed by the Radiation Protection Program. The Radiation Protection Program contains procedures for all radiological work performed at CPSES, Units 1 and 2 to ensure doses are maintained ALARA and are in compliance with regulatory limits in 10 CFR Part 20.

Non-radiological Impacts:

With regard to potential non-radiological impacts of the proposed SPU, the proposed action does not result in any significant changes to land use or water use. The proposed SPU would increase the temperature of water discharged from the plant at the discharge point, Outfall 001, into the SCR by 1.5 degrees Fahrenheit (°F) and would increase lake evaporation by approximately 6 acre-feet per year. The expected thermal increase would raise the average daily temperature at Outfall 001 from 95.6 °F to 97.1 °F, which remains well below the daily average temperature of 113 °F and daily maximum temperature of 116 °F specified in CPSES Texas Pollution Discharge Elimination System (TPDES) permit. Because this increase remains well below the facility's TPDES permit limits, the NRC staff determined that this increase is not significant, and is bounded by previous analysis of thermal discharge as documented in the Final Environmental Statement related to the operation of CPSES, Units 1 and 2 (September 1981). No effects on the aquatic or terrestrial habitat in the vicinity of the plant, or to endangered or

threatened species, or to the habitats of endangered or threatened species are expected as a result of the increase in thermal discharge or change in annual lake evaporation. The proposed action does not have a potential to affect any historical or archaeological sites.

The plant will be modified by replacing the high-pressure turbines at both units. All proposed plant changes will occur within the existing buildings, and no proposed equipment upgrades require any additional equipment that will be visible from outside the existing power station. The proposed action will not change the method of generating electricity or the method of handling any influents from the environment or non-radiological effluents to the environment. Therefore, no changes or different types of non-radiological environmental impacts are expected as a result of the proposed amendment.

Accordingly, the NRC concludes that there are no significant environmental impacts associated with the proposed action. The details of the staff's safety evaluation will be provided in the amendment that will be issued as part of the letter to the licensee approving the amendment to the facility operating licenses and technical specifications.

Environmental Impacts of the Alternatives to the Proposed Action:

As an alternative to the proposed action, the staff considered denial of the proposed action (i.e., the "no-action" alternative). Denial of the application would result in no change in current environmental impacts. The environmental impacts of the proposed action and the alternative action are similar.

Alternative Use of Resources:

The action does not involve the use of any different resources than those previously considered in the Final Environmental Statement related to the operation of CPSES, Units 1 and 2, dated September 1981.

Agencies and Persons Consulted:

In accordance with its stated policy, on June 11, 2008, the staff consulted with the Texas State official, Alice Rogers of the Texas Department of Health, regarding the environmental impact of the proposed action. The State official had no comments.

FINDING OF NO SIGNIFICANT IMPACT

On the basis of the environmental assessment, the NRC concludes that the proposed action will not have a significant effect on the quality of the human environment. Accordingly, the NRC has determined not to prepare an environmental impact statement for the proposed action.

For further details with respect to the proposed action, see the licensee's application dated August 28, 2007, as supplemented by letters dated October 24, November 7, and December 3, 2007, January 10, 29, and 31, February 21, 26, and 28, March 6, April 17, and May 14, 2008. Publicly available records are accessible electronically via the Agencywide Document Access and Management System (ADAMS) Public Electronic Reading Room on the Internet at the NRC Website: <http://www.nrc.gov.reading-rm/adams.html>. Persons who do not have access to ADAMS or who encounter problems in accessing the documents located in ADAMS should contact the NRC PDR Reference staff by telephone at 1-800-397-4209 or 301-415-4737, or send an e-mail to [pdr.Resource@nrc.gov](mailto:pdr.Resource@nrc.gov).

Dated at Rockville, Maryland, this 16th day of June, 2008.

FOR THE NUCLEAR REGULATORY COMMISSION

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