Acn. ML081050029

Progress Energy

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SERIAL: BSEP 08-0043

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Subject: Brunswick Steam Electric Plant, Unit Nos. 1 and 2
Docket Nos. 50-325 and 50-324/License Nos. DPR-71 and DPR-62
Voluntary Groundwater Protection Plan Report

Ladies and Gentlemen:

In accordance with the Nuclear Energy Institute (NEI) Industry Groundwater Protection Initiative, Carolina Power & Light Company, now doing business as Progress Energy Carolinas, Inc., submits the enclosed voluntary report identifying tritium concentrations in onsite water samples at the Brunswick Steam Electric Plant.

No regulatory commitments are contained in this letter. Please refer any questions regarding this submittal to Mr. Randy C. Ivey, Manager - Support Services, at (910) 457-2447.

Sincerely,

Edward L. Wills, Jr.
Plant General Manager
Brunswick Steam Electric Plant

LJG/ljg

Enclosure:

Voluntary Groundwater Protection Plan Report

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cc (with enclosure):

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Voluntary Groundwater Protection Plan Report

Background

The Nuclear Energy Institute (NEI) Industry Groundwater Protection Initiative is a voluntary industry-wide effort designed to assure timely detection of, and effective responses to, situations involving inadvertent radiological releases in groundwater to prevent migration of licensed radioactive materials offsite. NEI has issued guidance for development of action plans and a voluntary communications protocol. The voluntary communication protocol requires submittal of a 30-day written report to the NRC for any water sample result from an onsite groundwater monitoring well that exceeds the criterion in the Brunswick Steam Electric Plant Radiological Environmental Monitoring Program (REMP)/ Off-site Dose Calculation Manual (ODCM), and is, or could potentially be, used as a source of drinking water.

On June 13, 2007, tritium levels in excess of NEI voluntary reporting criteria (i.e., 30,000 pCi/L for onsite groundwater, as specified in the ODCM) were confirmed to be present in new onsite shallow groundwater monitoring wells. A 10 CFR 50.72 report (i.e., EN 43420) was made with this information on June 13, 2007. Additionally, state and local officials were contacted to inform them of the findings. A public meeting was held on June 19, 2007, to offer local residents an opportunity to hear actions being taken in response to this finding and to respond to their questions or concerns.

On March 7, 2008, an ongoing investigation determined that tritium levels in excess of NEI voluntary reporting criteria in an onsite shallow groundwater monitoring well resulted from a condition not previously reported. A follow-up notification was made on March 7, 2008, in accordance with 10 CFR 50.72 (i.e., EN 44041) containing this information. Additionally, state and local officials were contacted to inform them of the findings.

Analysis

The initial report made on June 13, 2007, identified an onsite shallow groundwater well (i.e., ESS-18C) near the Storm Drain Stabilization Pond (SDSP) exceeding the NEI voluntary reporting criteria. As previously indicated in that report (i.e., EN 43420), the storm drain system routes tritiated water into the SDSP. Overflow from the Turbine Building air-wash system was identified as the primary contributor to the storm drain system. The air-wash is no longer routed into the storm drains, which eliminated the major source of tritium into the storm drain collection system.

On March 7, 2008, an ongoing investigation determined that tritium levels in excess of NEI voluntary reporting criteria present in an onsite shallow groundwater well (i.e., ESS-2C), resulted from a condition not previously reported. Though elevated levels of tritium for each incident are most likely a result of the same source (i.e., effluent routed in the storm drain collection system), subsequent investigations indicate that the storm drain piping may allow an inadvertent pathway to groundwater in close proximity to ESS-2C. The monitoring wells are well within the boundaries of the site owner controlled area and there is no indication that tritium has migrated into any drinking water.

Carolina Power & Light Company (CP&L), now doing business as Progress Energy Carolinas, Inc., continues to take actions to address the elevated tritium levels. CP&L has installed 30 new wells, including shallow, intermediate, and deep wells, since June, 2007, as part of the ongoing groundwater monitoring program. In addition, 12 previously existing wells continue to be monitored. The monitoring wells are located around the plant site in order to: (1) determine the extent of tritium levels in the groundwater, and (2) confirm the hydrologic conditions, including the pattern, of the affected area. A site conceptual model determining the groundwater flow profile has been completed by a third-party vendor and a final review is in progress.

Conclusion

An environmental sampling program and ongoing analysis has demonstrated that there has been no adverse offsite impact resulting from this condition. CP&L is implementing a response plan which includes actions to fully determine the extent of the elevated tritium, and to confirm the hydrologic conditions of the affected area. Based on the results of these actions, CP&L will establish appropriate long-term actions to address the situation.