August 2, 2006

Mr. Stuart A. Richards, Deputy Director Division of Inspection and Regional Support Office of Nuclear Reactor Regulation U.S. Nuclear Regulatory Commission Washington, DC 20555-0001

Dear Mr. Richards:

ULNRC-05319



# DOCKET NUMBER 50-483 CALLAWAY PLANT UNIT 1 UNION ELECTRIC CO. GROUNDWATER PROTECTION – DATA COLLECTION QUESTIONNAIRE

The nuclear industry, in conjunction with the Nuclear Energy Institute, has developed a questionnaire to facilitate the collection of groundwater data at commercial nuclear reactor sites. The objective of the questionnaire is to compile baseline information about the current status of site programs for monitoring and protecting groundwater and to share that information with NRC. The completed questionnaire for Callaway Plant is enclosed.

This submittal contains no new regulatory commitments.

Please contact Dave Shafer, Superintendent Licensing at 314-554-3104 or me at 573-676-8659 if you have questions about the enclosed information.

Sincerely,

Kleith D. Volung

Manager, Regulatory Affairs

DES/jdg

Enclosure

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cc: U.S. Nuclear Regulatory Commission Attn: Document Control Desk Mail Stop P1-137 Washington, DC 20555-0001

Mr. Bruce S. Mallett
Regional Administrator
U.S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive, Suite 400
Arlington, TX 76011-4005

Senior Resident Inspector Callaway Resident Office U.S. Nuclear Regulatory Commission 8201 NRC Road Steedman, MO 65077

Mr. Jack N. Donohew (2 copies)
Licensing Project Manager, Callaway Plant
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Mail Stop O-7D1
Washington, DC 20555-2738

Missouri Public Service Commission Governor Office Building 200 Madison Street PO Box 360 Jefferson City, MO 65102-0360

Mr. Floyd Gilzow Deputy Director for Policy Missouri Department of Natural Resources PO Box 176 Jefferson City, MO 65102

Mr. Ralph Andersen Nuclear Energy Institute 1776 I Street N.W., Suite 400 Washington, DC 20006-3708 ULNRC-05319 August 2, 2006 Page 3

bcc:

C. D. Naslund

A. C. Heflin

K. D. Young

G. A. Hughes

D. E. Shafer (470)

S. L. Gallagher (100)

L. M. Belsky (NSRB)

K. A. Mills

P. M. Bell

A160.0761

Certrec Corporation 4200 South Hulen, Suite 630 Fort Worth, TX 76109

(Certrec receives ALL attachments as long as they are non-safeguards and public disclosed).

### Send the following without attachments:

Ms. Diane M. Hooper Supervisor, Licensing WCNOC P.O. Box 411 Burlington, KS 66839

Mr. Scott Bauer Regulatory Affairs Palo Verde NGS P.O. Box 52034, Mail Station 7636 Phoenix, AZ 85072-2034

Mr. Scott Head Supervisor, Licensing South Texas Project NOC Mail Code N5014 P.O. Box 289 Wadsworth, TX 77483 Mr. Dennis Buschbaum TXU Power Comanche Peak SES P.O. Box 1002 Glen Rose, TX 76043

Mr. Stan Ketelsen
Manager, Regulatory Services
Pacific Gas & Electric
Mail Stop 104/5/536
P.O. Box 56
Avila Beach, CA 93424

Mr. John O'Neill Pillsbury Winthrop Shaw Pittman LLP 2300 N. Street N.W. Washington, DC 20037

## Industry Groundwater Protection Initiative Voluntary Data Collection Questionnaire

#### Plant: Callaway Plant

1. Briefly describe the program and/or methods used for detection of leakage or spills from plant systems, structures, and components that have a potential for an inadvertent release of radioactivity from plant operations into groundwater.

Answer: There are 3 shallow groundwater monitoring wells and a groundwater sump located alongside the spent fuel storage building which are sampled quarterly and analyzed for tritium and principal gamma emitters. These wells are used to ensure there is no leakage from the spent fuel storage pool. There are no monitoring wells, programs, or methods for detection of leakage or spills from plant systems, structures, or components.

2. Briefly describe the program and/or methods for monitoring onsite groundwater for the presence of radioactivity released from plant operations.

Answer: There are 3 shallow groundwater monitoring wells and a groundwater sump located alongside the spent fuel storage building and three onsite deep wells which are sampled quarterly and analyzed for tritium and principal gamma emitters. There are no other monitoring wells, programs, or methods for monitoring onsite groundwater for the presence of radioactivity released from plant operations.

3. If applicable, briefly summarize any occurrences of inadvertent releases of radioactive liquids that had the potential to reach groundwater and have been documented in accordance with 10 CFR 50.75(g).

#### Answer:

- (a) There have been six breaks in the discharge pipeline; however, until recently, only three instances were documented in the corrective action system as a 50.75(g) event. Action 32 of the Callaway Groundwater Protection Initiative (GPI) action plan (CAR 200602748) will document the three undocumented breaks in the plant corrective action system as 50.75(g) events.
- (b) The shallow groundwater underneath the plant is contaminated with low levels of tritium, and is documented in the plant corrective action system as a 50.75(g) event. The contamination is due to a backflow eddy which carries the plant effluent discharge upriver to the plant intake. This has resulted in low levels of <sup>3</sup>H contamination in the plant raw water systems. Underground leaks in the raw water systems have resulted in low levels of <sup>3</sup>H groundwater contamination.
- (c) The air release valves (ARV's) on the discharge pipeline operate with a small amount of blow- by which has resulted in contamination of the French drain in the manholes and low level tritium contamination of the groundwater in the vicinity of the manholes. Extensive discrete depth soil sampling and sampling of the free water around the manholes has been performed by an independent firm and the results are being analyzed by a registered geologist and a registered professional geotechnical engineer. Drinking water from neighbors with adjoining property has been analyzed and there was no detectable <sup>3</sup>H or other radioactivity of plant origin. Bins were placed under the ARV's to catch the bypass water to prevent it from reaching the French drains. Work is continuing to fully characterize the extent of the contamination from the ARV's. This work is being tracked by Action 22 of the GPI action

## Industry Groundwater Protection Initiative Voluntary Data Collection Questionnaire

plan. CAR 200604709 is tracking the development of a permanent solution to this issue. This event is documented in the plant corrective action system as a 50.75(g) event.

Pursuant to the NEI Groundwater Protection Initiative, AmerenUE has recently provided a voluntary notification to the Missouri Department of Natural Resources and the USNRC Region 4 Office for each of the above events. The Missouri DNR and the USNRC Region 4 Office have been and will continue to be updated as new information becomes available. These events have also been discussed informally with local county officials.

4. If applicable, briefly summarize the circumstances associated with any <u>onsite</u> or <u>offsite</u> groundwater monitoring result indicating a concentration in groundwater of radioactivity released from plant operations that exceeds the maximum contaminant level (MCL) established by the USEPA for drinking water.

Answer: There have been no offsite groundwater monitoring samples that exceed the USEPA MCL or the reporting values provided by the USNRC Branch Technical Position. One onsite sample of groundwater taken in the area of manhole 6B shows a <sup>3</sup>H concentration of 25,863 pCi/L. Efforts are continuing under Action 22 of the Callaway GPI action plan to determine the extent of the contamination of the area around the manholes with ARV's.

5. Briefly describe any remediation efforts undertaken or planned to reduce or eliminate levels of radioactivity resulting from plant operations in soil or groundwater onsite or offsite.

Answer: There have been no remediation efforts undertaken to date. Efforts are still underway to characterize the plant site and determine the extent of any identified contamination. Remediation will be considered as part of the characterization efforts.