AmerenUE
Callaway Plant

PO Box 620
Fulton, MO 65251

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,

Keith D. Young
Manager, Regulatory Affairs

DES/jdg

Enclosure

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

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. Dennis Buschbaum
TXU Power
Comanche Peak SES
P.O. Box 1002
Glen Rose, TX 76043

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

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

Mr. Scott Head
Supervisor, Licensing
South Texas Project NOC
Mail Code N5014
P.O. Box 289
Wadsworth, TX 77483

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

Enclosure
ULNRC-05319

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 ^{3}H contamination in the plant raw water systems. Underground leaks in the raw water systems have resulted in low levels of ^{3}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 ^{3}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 onsite or offsite 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 ^{3}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.