PRODUCTION ENGINEERING DIVISION
GENERAL ENGINEERING INSTRUCTION FORM

PED-GEI-35.1
R7

## GEI-35-EC COVER SHEET AND EVALUATION

| EC: 38246 | Revision: 0 | Page: | Total Pages: |
|---|---|---|---|
| Title: GROUNDWATER MONITORING SYSTEM FOR RADIOACTIVE CONTAMINATION | | | |
| [ ] Minor Substitute Replacement Item | | [x] Minor Facility Change | |
| [ ] CQE | [ ] FPQ | [ ] L-CQE | [x] Non-CQE |

EC Request and Technical Evaluation:

***Purpose:***

The purpose of this EC is to install a system of monitoring wells to allow for monitoring of the local groundwater for radionuclide contamination. This is being done in conjunction with the EPRI Groundwater Assessment performed in April 2007 (see Attachment 1). These wells will assist plant personnel with detecting radionuclide releases in the local groundwater in order to maintain compliance with applicable federal, state and local regulations, as well as applicable industry guidelines.

***Scope:***

The scope of this configuration change includes selection of well locations, preparation of drilling and well sites and procuring vendor support for drilling and installing wells and related wellhead equipment. Not included in this scope are changes to existing permanent or temporary monitoring wells located on the OCA. ALL WORK ASSOCIATED WITH THIS EC IS NON-Q.

8-8-07
EJS

Monitoring wells will be drilled and emplaced at six locations within the Protected Area at various locations around the plant, and two locations outside of the PA. All wells will be placed at locations outside of any current structure and will be located to avoid potential interactions with existing SSCs.

There are no PMT requirements or DBD changes associated with this EC.

| | Signature | Employee No. | Date |
|---|---|---|---|
| Preparer: | [signature] | 9090 | 8-13-07 |
| Reviewer (Non-CQE): | [signature] | 7278 | 8/13/07 |
| Ind. Reviewer (L-/CQE/FPQ): | N/A | | |
| SE Review: | [signature] | 6800 | 8-13-07 |
| Approved by: | MTFrank | 6301 | 8/13/07 |
| Associated Work Order(s): | 272349_04 | | |
| SE Closure Approval Date: | [signature] | 6800 | 11-8-07 |
| As Built Rec'd by Confg Ctl: | [signature] EJS 11-8-07 | x3mxm | 12/10/07 |
| Audit Complete by Confg Ctl: | [signature] | x3mxm | 1/15/08 |

## SRI/MCC CLOSEOUT CHECKLIST

| EC: 38246 | | Signature | Date |
|---|---|---|---|
| 1. Files Purged | DEN Engineer | J McFadden | 12/24/07 |
| 2. FACTS Updated | DEN FACTS Coord NA | | 14 Dec 07 |
| 3. Fuse List Updated (Form PED-GEI-56.4) | DEN Fuse Coord NA | | 14 Dec 07 |
| 4. Molded Case Circuit Breaker Program Updated | DEN Engineer N/A | J McFadden | 1/8/08 12/24/07 |
| 5. Calculations and EAs Updated | DEN Engineer N/A | J McFadden | 12/24/07 |
| 6. Design Basis Documents Updated | DBD Coordinator | NA | 12/21/07 |
| 7. Drawing Markups Approved for Update (both must sign) | DEN Engineer | J McFadden | 12/24/07 |
| | Configuration Control | | 12/28/07 |
| 8. Drawing Update Complete | DEN Eng or Alternate | J McFadden | 1-15-08 |
| 9. Station Documents Updated | Configuration Control | MaryJo Wheeler | 1-3-08 |
| 10. ELDL Update Submitted | Configuration Control | NA | 12/21/07 |
| 11. USAR Updated | DEN Engineer N/A | J McFadden | 12/24/07 |
| 12. Seismic Qualification Report and Effect on the USI A-46 Program | DEN Engineer N/A | J McFadden | 12/24/07 |
| 13. License Renewal Project Impact | LR Engineer | Kristen Mason | 12/26/07 |
| 14. Simulator Services Notified of Project Completion | Simulator Services | NA | 12/28/07 |
| 15. PED-GEI-75 Identified Software Documents Updated | DEN Engineer N/A | J McFadden | 12/24/07 |
| 16. EEQ Reviewed | EEQ Coordinator NA | | 14 Dec 07 |
| 17. Containment Insulation Control Program Updated | Containment Insulation Control Program Engineer | NA M Friedman | 12/20/07 |

**Comments:**

**NOTE:** See PED-GEI-56 Attachment 2 for a detailed description of closeout criteria.

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***Well Description:***

This EC calls for two types of wells. The two types are shallow wells and deep wells. According to recommendations from EPRI, the shallow wells are to be drilled so that the top of the well screen is approximately one foot above the height of the seasonal high water table (total well depth is approximately 20 to 25 feet below grade). The average seasonal high water level to be used is elevation 991 feet per USAR Fig 2.7-2 and calculation FC 07013. The deep wells will be completed in the coarser-grained sands underlying the shallow clays and silts that exist on site, and approximately 30 feet deeper than the accompanying shallow well (total well depth of approximately 50 to 55 feet below grade). Each deep well will be paired with a shallow well, and two well sites will have only a shallow well. This pairing system will allow characterization of the vertical groundwater flow potential in the well vicinity and the vertical distribution and concentration of radionuclides potentially within the aquifer. Each well will be constructed of two-inch diameter, threaded, flush-joint schedule-40 PVC riser and screen. The screen will be 10 feet long and have machined slots 0.010 inches wide. All wells will be completed within a locking steel guard pipe set in concrete, and each well site (individual well or well pair) will be protected by steel bollards set in concrete.

***Well Locations:***

MW-100 A and B (shallow and deep wells, respectively) are located between the Reverse Osmosis well and the Radioactive Waste Processing Building in order to monitor the groundwater for the presence of contaminants whose source is within the RCA, but which potentially could be induced to flow toward the active RO well. Wells MW-101 (A and B) through MW-104 (A and B) and MW-105 will be located within the downgradient flow path of potential contaminants from source areas at the SIRWT, SFP, unlined concrete sumps in the RCA and the radwaste pipeline. MW-106 is designed to monitor shallow groundwater immediately north of the power block, and will also act as a northern bound for plumes detected by the other wells. Drawing C-4409(56188) shows the locations of all new proposed wells. The locations of all proposed wells are based on recommendations from EPRI, and are to be confirmed by the drilling vendor in order to ensure that groundwater flow path is as predicted. Final locations of the wells will be determined by survey as built, and will be entered into the plant coordinate system at that time.