

March 15, 2002

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

ULNRC-4623

Gentlemen:



**DOCKET NUMBER 50-483  
CALLAWAY PLANT UNIT 1  
UNION ELECTRIC CO.  
FACILITY OPERATING LICENSE NPF-30  
SPECIAL REPORT 2002-01  
GT-RT-21B Radiation Monitor Inoperable**

This Special Report is submitted in accordance with Final Safety Analysis Report (FSAR) Technical Specification (T/S) 16.3.3.4 (c) which states:

“With the number of OPERABLE channels for the unit vent-high range noble gas monitor less than the Minimum channels OPERABLE requirement of Table 16.3-7, initiate the preplanned alternate method of monitoring the appropriate parameter(s) within 72 hours and either restore the inoperable channel to OPERABLE status within 7 days, or prepare and submit a Special Report to the Commission within the following 14 days outlining the preplanned alternate method of monitoring, the cause of the inoperability, and the plans and schedule for restoring the channel to OPERABLE status.”

This Special Report documents the failure of radiation monitor GT-RT-21B and the actions taken to return the aforementioned radiation monitor to OPERABLE status.

A handwritten signature in black ink that reads "Warren A. Witt".

Warren A. Witt  
Manager, Callaway Plant

WAW/ewh

Enclosure

IE 22

ULNRC-4623  
March 15, 2002  
Page 2

cc: U. S. Nuclear Regulatory Commission (Original and 1 copy)  
Attn: Document Control Desk  
Mail Stop P1-137  
Washington, DC 20555-0001

Mr. Ellis W. Merschoff  
Regional Administrator  
U.S. Nuclear Regulatory Commission  
Region IV  
611 Ryan Plaza Drive, Suite 400  
Arlington, TX 76011-8064

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 7E1  
Washington, DC 20555-2738

Manager, Electric Department  
Missouri Public Service Commission  
PO Box 360  
Jefferson City, MO 65102

Mr. John O'Neill  
Shaw, Pittman, Potts & Trowbridge  
2300 N. Street N.W.  
Washington, DC 20037

Records Center  
Institute of Nuclear Power Operations  
700 Galleria Parkway  
Atlanta, GA 30339

### **Description of Event**

At 1130, 3/4/02, maintenance activities were being performed on the Unit Vent system. When Unit Vent air flow was reduced to below 46,900 standard cubic feet per minute (scfm), Unit Vent radiation monitor GT-RT-21B failed due to a loss of isokinetic sampling flow. Compensatory sampling measures of the Unit Vent were instituted and investigation of the GT-RT-21B failure was commenced. An error in the software programming for GT-RT-21B was discovered and corrected. This error had been present from 1/16/02 until corrected on 3/5/02 making GT-RT-21B Inoperable for this time period. Subsequent testing restored GT-RT-21B to Operable status.

### **Root Cause**

The root cause of the event was inadequate guidance from the equipment vendor Sorrento Electronics, to modify the installed software data base used in GT-RT-21B.

GT-RT-21B has two air flow rates that can be employed depending on radiation level sensed at the radiation detector, low air flow used in low to medium radiation level channels, and high flow used for medium to high range radiation level channels with the low range channel normally in service. When not in service, the medium and high range channels have a different color status indicated on plant monitors than the operating channel. Modification Package 99-1028 was created to alter the status color of out of service channels to match the operating channel since the radiation monitor was operational with any of the three channels in service. Equipment vendor Sorrento Electronics supplied hardware and software upgrades to accomplish the desired Modification. Imbedded within the software package upgrade was an omission to modify a correction factor and when this Modification was installed, the net result was that with air flow rates lower than 46,900 scfm, GT-RT-21B would isolate air flow to the detection chamber and this rendered the unit Inoperable.

### **Corrective Actions**

Investigations initiated when GT-RT-21B failed, exposed the fault in the Modification software package. Proper correction factor values were obtained and applied to the software program. Channel operability was re-established utilizing plant approved surveillance procedures.

Special Report 2002-01  
Attachment 1  
ULNRC- 4623  
March 15, 2002  
Page 2

**Basis for Reportability**

This event is being reported as a Special Report per FSAR Technical Specification 16.3.3.4 (c) because GT-RT-21B was Inoperable from 0902, 1/16/02 until 1833, 3/5/02, for a total of 48 days, 9 hours, 31 minutes which is greater than the 7 days allowed by the FSAR Technical Specification 16.3.3.4 (c).

If you have any questions or require additional information, contact Mark Reidmeyer, Supervisor, Regional Regulatory Affairs, at (573) 676-4306.

Sincerely,

A handwritten signature in cursive script that reads "Warren A. Witt".

Warren A. Witt  
Manager, Callaway Plant

WAW/ewh

March 15, 2002

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

ULNRC-4623

Gentlemen:



**DOCKET NUMBER 50-483  
CALLAWAY PLANT UNIT 1  
UNION ELECTRIC CO.  
FACILITY OPERATING LICENSE NPF-30  
SPECIAL REPORT 2002-01  
GT-RT-21B Radiation Monitor Inoperable**

This Special Report is submitted in accordance with Final Safety Analysis Report (FSAR) Technical Specification (T/S) 16.3.3.4 (c) which states:

“With the number of OPERABLE channels for the unit vent-high range noble gas monitor less than the Minimum channels OPERABLE requirement of Table 16.3-7, initiate the preplanned alternate method of monitoring the appropriate parameter(s) within 72 hours and either restore the inoperable channel to OPERABLE status within 7 days, or prepare and submit a Special Report to the Commission within the following 14 days outlining the preplanned alternate method of monitoring, the cause of the inoperability, and the plans and schedule for restoring the channel to OPERABLE status.”

This Special Report documents the failure of radiation monitor GT-RT-21B and the actions taken to return the aforementioned radiation monitor to OPERABLE status.

A handwritten signature in cursive script that reads "Warren A. Witt".

Warren A. Witt  
Manager, Callaway Plant

WAW/ewh

Enclosure

ULNRC-4623  
March 15, 2002  
Page 2

cc: U. S. Nuclear Regulatory Commission (Original and 1 copy) ✓  
Attn: Document Control Desk  
Mail Stop P1-137  
Washington, DC 20555-0001

Mr. Ellis W. Merschoff  
Regional Administrator  
U.S. Nuclear Regulatory Commission  
Region IV  
611 Ryan Plaza Drive, Suite 400  
Arlington, TX 76011-8064

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 7E1  
Washington, DC 20555-2738

Manager, Electric Department  
Missouri Public Service Commission  
PO Box 360  
Jefferson City, MO 65102

Mr. John O'Neill  
Shaw, Pittman, Potts & Trowbridge  
2300 N. Street N.W.  
Washington, DC 20037

Records Center  
Institute of Nuclear Power Operations  
700 Galleria Parkway  
Atlanta, GA 30339

### **Description of Event**

At 1130, 3/4/02, maintenance activities were being performed on the Unit Vent system. When Unit Vent air flow was reduced to below 46,900 standard cubic feet per minute (scfm), Unit Vent radiation monitor GT-RT-21B failed due to a loss of isokinetic sampling flow. Compensatory sampling measures of the Unit Vent were instituted and investigation of the GT-RT-21B failure was commenced. An error in the software programming for GT-RT-21B was discovered and corrected. This error had been present from 1/16/02 until corrected on 3/5/02 making GT-RT-21B Inoperable for this time period. Subsequent testing restored GT-RT-21B to Operable status.

### **Root Cause**

The root cause of the event was inadequate guidance from the equipment vendor Sorrento Electronics, to modify the installed software data base used in GT-RT-21B.

GT-RT-21B has two air flow rates that can be employed depending on radiation level sensed at the radiation detector, low air flow used in low to medium radiation level channels, and high flow used for medium to high range radiation level channels with the low range channel normally in service. When not in service, the medium and high range channels have a different color status indicated on plant monitors than the operating channel. Modification Package 99-1028 was created to alter the status color of out of service channels to match the operating channel since the radiation monitor was operational with any of the three channels in service. Equipment vendor Sorrento Electronics supplied hardware and software upgrades to accomplish the desired Modification. Imbedded within the software package upgrade was an omission to modify a correction factor and when this Modification was installed, the net result was that with air flow rates lower than 46,900 scfm, GT-RT-21B would isolate air flow to the detection chamber and this rendered the unit Inoperable.

### **Corrective Actions**

Investigations initiated when GT-RT-21B failed, exposed the fault in the Modification software package. Proper correction factor values were obtained and applied to the software program. Channel operability was re-established utilizing plant approved surveillance procedures.

Special Report 2002-01  
Attachment 1  
ULNRC- 4623  
March 15, 2002  
Page 2

**Basis for Reportability**

This event is being reported as a Special Report per FSAR Technical Specification 16.3.3.4 (c) because GT-RT-21B was Inoperable from 0902, 1/16/02 until 1833, 3/5/02, for a total of 48 days, 9 hours, 31 minutes which is greater than the 7 days allowed by the FSAR Technical Specification 16.3.3.4 (c).

If you have any questions or require additional information, contact Mark Reidmeyer, Supervisor, Regional Regulatory Affairs, at (573) 676-4306.

Sincerely,

A handwritten signature in cursive script that reads "Warren A. Witt".

Warren A. Witt  
Manager, Callaway Plant

WAW/ewh