P21 m1320

LICENSEE: SORRENTO ELECTRONICS
SITE: SORRENTO ELECTRONICS EN NUMBER:38343
DOCKET: EVENT DATE: 10-03-01
RX TYPE: EVENT TIME:
VENDORS: NOTIFY DATE: 10-03-01
EMERGENCY CLASS: N/A REGION: 4 STATE: CA TIME: 16:12
OPS OFFICER: LEIGH TROCINE
10 CFR SECTION: CCCC UNSPECIFIED PARAGRAPH

10 CFR PART 21 NOTIFICATION REGARDING MICROPROCESSOR BASED RADIATION MONITOR RM-2000

The following text is portion of a facsimile received from Sorrento Electronics:

"The information following is in accordance with the reporting requirements of 10 CFR 21.21(d)(4):"

"ii) Identification of the basic component which contains the defect: The basic component which contains the defect is software version 16.0 and higher of the microprocessor based radiation monitor, RM-2000, with the 'SAVE MASTER DATABASE' function, where the master database has been restored at least once."

"iii) Identification of the firm supplying the basic component: Sorrento Electronics, Inc. [...]"

"iv) Nature of the defect and the safety hazard which is created by the defect: The defect was noted at Sorrento Electronics following a power up on a RM-2000 skid, where the detectors had been detached while the monitor was powered down. When the monitor was powered up, the channels associated with the detectors continued to indicate a green operate status rather than indicating a NO PULSES operate failure condition. Further interrogation of the database revealed the monitor was not responding to taking the channel in and out of service or to changing the alarm status. The monitor showed a constant radiation on the channel display. The affected channels would not return to a normal operating condition until the detector was reconnected."

"This failure will cause the RM-2000 to not process the following tasks associated with the affected channel:

1. Temperature correction
2. Tracking algorithm
3. No pulses
4. Display checksource value
5. Over range

6. Background subtract
7. Pressure correction
8. Limit to minimum value
9. Display current count rate
10. Limit to maximum value
11. Perform checksource
12. Channel in service
13. Check alarms
14. Reset alarms after power failure"

"v) Date on which the information was obtained: The information was noted on software discrepancy notice, (SDN 545), on August 14, 2001, for review of possible 10 CFR [Part] 21 implications. Evaluation by [Sorrento Electronics'] engineering of the problem for 10 CFR [Part] 21 applicability was immediately begun. The evaluation was completed and declared reportable on October 1, 2001."

"vi) The number and location of the components subject to the regulations per 10 CFR [Part] 21: The following safety-related equipment is affected:

PLANT	RADIATION MONITOR RM-2000 VERSION
ASSEMBLY NUMBER	
Salem (PG & E) (Gas Monitor)	04231701-001, S/N: 001 16.6
Salem (PG & E) (Duct Monitor)	04233101-001, S/N: 001 16.6
Salem (PG & E) Iodine Gas Monitor)	04231201-001, S/N: 001 (Particulate 16.6

"vii) Name of the implementing organization and time frame for implementing the corrective action: The responsibility for the implementing the corrective action has been delegated to [...] RMS Engineering. Sorrento Electronics will make the individual purchasers aware of this possible problem. Further, the RM-2000 operating code will be revised to correct the deficiency. The new corrected version of the RM-2000 code will be available to customers after November 1, 2001."

"viii) Advise related to the defect that will be given to the purchasers: While this defect is not likely to occur during normal operation at a nuclear power plant, it is possible. Therefore, Sorrento Electronics will advise the affected purchasers via a Quality Bulletin of the following interim test procedure to verify operability of the affected RM-2000:"

"There are two methods to verify that a RM-2000 has not failed

after a power fail sequence. First, if the radiation value being displayed is changing, the monitor is operating correctly. Second, if the radiation value is not changing, then the user should remove the monitor from operation by taking a channel out of service by database manipulation. If the channel goes into a operate fail condition, the RM-2000 is working correctly and the channel can be returned to service. If the monitor does not go into an operate fail condition, the monitor has failed and is not receiving any pulses from the associated detector."

(Call the NRC operations officer for reporting organization contact information.)

SORRENTO ELECTRONICS

October 3, 2001

NRC Operations Center
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

Subject: 10CFR21 Reportable Item

Gentlemen:

This letter is provided in compliance with the requirements of 10CFR21.21.

The information following is in accordance with the reporting requirements of §10CFR21.21(d)(4):

i) Name and address of the person informing the Commission:

Dirk Koopman
President and Chief Operating Officer,
Sorrento Electronics
4949 Greencraig Lane
San Diego, California 92123

ii) Identification of the basic component which contains the defect:

The basic component which contains the defect is software version 16.0 and higher of the microprocessor based radiation monitor, RM-2000, with the "SAVE MASTER DATABASE" function, where the master database has been restored at least once.

iii) Identification of the firm supplying the basic component:

Sorrento Electronics, Inc.
4949 Greencraig Lane
San Diego, California 92123

iv) Nature of the defect and the safety hazard which is created by the defect:

The defect was noted at Sorrento Electronics following a power up on a RM-2000 skid, where the detectors had been detached while the monitor was powered down. When the monitor was powered up, the channels associated with the detectors continued to indicate a green operate status rather than indicating a NO PULSES operate failure condition. Further interrogation of the database revealed the monitor was not responding to taking the channel in and out of service or to

changing the alarm status. The monitor showed a constant radiation on the channel display. The affected channels would not return to a normal operating condition until the detector was reconnected.

This failure will cause the RM-2000 to not process the following tasks associated with the affected channel:

1. Temperature correction
2. Tracking algorithm
3. No pulses
4. Display checksource value
5. Over range
6. Background subtract
7. Pressure correction
8. Limit to minimum value
9. Display current count rate
10. Limit to maximum value
11. Perform checksource
12. Channel in service
13. Check alarms
14. Reset alarms after power failure

v) Date on which the information was obtained:

The information was noted on software discrepancy notice, (SDN 545), on August 14, 2001 for review of possible10CFR21 implications. Evaluation by SE's engineering of the problem for 10CFR21 applicability was immediately begun. The evaluation was completed and declared reportable on October 1, 2001.

vi) The number and location of the components subject to the regulations per 10CFR21:

The following safety related equipment is affected:

PLANT	RADIATION MONITOR ASSEMBLY NUMBER	RM-2000 VERSION
Salem (PG & E)	04231701-001, S/N: 001 (Gas Monitor)	16.6
Salem (PG & E)	04233101-001, S/N: 001 (Duct Monitor)	16.6
Salem (PG & E)	04231201-001, S/N: 001 (Particulate Iodine Gas Monitor)	16.6

vii) Name of the implementing organization and time frame for implementing the corrective action:

The responsibility for the implementing the corrective action has been delegated to Mr. Art Evans, Manager of RMS Engineering. Sorrento Electronics will make the individual purchasers aware of this possible problem. Further, the RM-2000 operating code will be revised to correct the deficiency. The new corrected version of the RM-2000 code will be available to customers after November 1, 2001.

viii) Advise related to the defect that will be given to the purchasers:

While this defect is not likely to occur during normal operation at a nuclear power plant, it is possible. Therefore, Sorrento Electronics will advise the affected purchasers via a Quality Bulletin of the following interim test procedure to verify operability of the affected RM-2000:

There are two methods to verify that a RM-2000 has not failed after a power fail sequence. First, if the radiation value being displayed is changing, the monitor is operating correctly. Second, if the radiation value is not changing, then the user should remove the monitor from operation by taking a channel out of service by database manipulation. If the channel goes into a operate fail condition, the RM-2000 is working correctly and the channel can be returned to service. If the monitor does not go into an operate fail condition, the monitor has failed and is not receiving any pulses from the associated detector.

If you have any questions concerning this report, please call Mr. Art Evans at 858-522-8348 or Mr. Gerald Scott at 858-522-8357.

Yours truly,

Dr. Dirk Koopman
President and Chief Operating Officer,
Sorrento Electronics

Cc: NRC Region IV