

Science and Technology for a Safer World

SCIENTECH, Inc., is a worldwide technology and services company offering utilities, government and industry the products and skills of highly experienced personnel, focused to benefit customers through the use of network technology.

SCIENTECH prides itself on assured performance, employee expertise, ethics, and continuous performance improvement. The Company is fully committed to providing its customers with the services and technology to allow them to excel in a fast-changing and challenging world.

M. R. Booska, Director, Quality Operations 2310 Potomac Camp Road, Oakland MD, 21550 Phone 301-334-2352 Fax. 301-334-2353 (Call above Number to ensure proper fax connection)

TELEFAX TRANSMITTAL

Date: February 15, 2003

FROM: Martin R. Booska

TO: Document Control Desk

Organization: US Nuclear Regulatory Commission

City/State: Washington DC, 20555

Fax No.: 21-03-01-02

Total Pages ____ (Including this page)

COMMENTS: Follow-up Report, Reference Event # 39516

This is the follow-up fax report to the USNRC of a potential defect under the provisions of 10 CFR Part 21. The preliminary report was filed on January 16, 2003. Potentially affected clients are being provided a copy of this report as indicated below. The following Fax addressees are requested to forward this information to the appropriate internal

organizations where shown in the attached list.

Analysis and Measurement Services, QA Manager, Dan Beverly, Fax # 865-691-9344 Carolina Power and Light (Progress Energy) Buyer, Fax # 919-546-6750 Constellation - Nine Mile Point, Procurement QA Supervisor Fax # 315-349-7957 Dominion - Millstone, Manager - Nuclear Safety Engineering, Fax # 860-437-5802 Procurement Entergy - James A. Fitzpatrick, Attn. Dan Doherty - Purchasing. Fax # 315-349-6059 Entergy - Indian Point 2 & 3, Purchasing, Fax # 914-736-8138 Entergy - Pilgrim, Purchasing Fax # 508-830-8880 First Energy - Beaver Valley Power Station, Purchasing, Fax # 724-682-7850 Public Service Electric and Gas, Procurement Assessment Manager, Fax # 856-339-7707 Rochester Gas and Electric, Quality Assurance Manager, Purchasing Fax # 585-771-3907 NMC Kewaunee Site Procurement Engineering Organization, Buyer Fax # 920-388-8772



440 West Broadway, Idaho Falls, Idaho 83402-3638 Main Phone 208-524-9200, Fax 208-524-9282

February 15, 2003

NRC Operations Center Document Control Desk US Nuclear Regulatory Commission Washington DC, 20555

Subject: Determination of Defect under 10CFR Part 21 Reference: Event # 39516

Dear Sir or Madam:

The NRC Operations Center was sent a preliminary notification by facsimile on January 16, 2003, indicating that SCIENTECH, Inc.'s subsidiary, NUS Instruments, Inc. (NUSI) had determined that a Basic Component, supplied in one safety related CMM900 module to Constellation-Nine Mile Point (P.O. #00-31440) contained a defect that was reportable under 10CFR21 (Two other modules supplied to Entergy-Fitzpatrick listed in preliminary notification were later discovered to be non-safety related). Additionally, NUSI determined that other clients had been supplied assemblies containing components that may contain similar defects. NUSI has notified all affected clients as stated in the preliminary report.

The NUSI evaluation determined that there was not a significant safety hazard to the functionality of the modules, however; the utilities were given the affected module ID numbers to determine the safety hazard specific to their application. Client feedback has indicated that there is not a significant safety hazard due to this defect, however it is utility specific.

Enclosed please find SCIENTECH Inc.'s subsidiary NUS Instruments, Inc. (NUSI) formal report as a follow up to the preliminary notice.

If you have questions or comments, please feel free to contact us at the numbers listed below.

Sincerely E. P. Joch .

President &CEO (407) 333-8895 (ploch@scientech.com)

Martin R. Booska Director of Quality Operations (301) 334-2352 (mbooska@scientech.com)



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10 CFR PART 21 REPORTING FORM FOR REPORTING OF DEFECTS AND NONCOMPLIANCE NOTIFICATION #21-03-01 EVENT # 39516

NAME AND ADDRESS OF REPORTING INDIVIDUAL(S) OR ORGANIZATIONS.

Paul Loch, President SCIENTECH, Inc. SCIENTECH, Inc.-Presidents Office 2124 Silver Leaf Court Longwood, FL 32779-2757

Phone: 407-333-8895 Fax: 407-333-0735 E-mail: ploch@scientech.com

FACILITY, COMPONENT AND/OR PRODUCT THAT IS NONCOMPLIANT.

The facility is Constellation - Nine Mile Point (Formerly Niagara Mohawk).

The component is a CMM900 module, P/N: NUS-A004PA-1, Revision 0, containing Texas Instruments operational amplifier, P/N: OPA2111.

SUPPLYING FIRM IDENTIFICATION (NAME, ADDRESS).

NUS Instruments 440 West Broadway Idaho Falls, Idaho 83402

NATURE OF THE DEFECT, ASSOCIATED SAFETY HAZARD, AND THE DATE THIS INFORMATION WAS OBTAINED.

Three modules containing Texas Instruments (TI) OPA2111 operational amplifiers were returned to NUSI after suffering premature failures in the field. The components were supplied in two non-safety related CMM900 modules to Entergy-Fitzpatrick (P.O. #4500510231) and one safety related CMM900 module to Constellation-Nine Mile Point (P.O. #00-31440). The components were sent to TI for failure analysis and TI concluded that a manufacturing process defect existed in the amplifier that could result in a premature failure. After NUSI Engineering performed an analysis of the TI information and determined that the condition was potentially reportable for the safety related module, a 10 CFR Part 21 file was logged and numbered 21-03-01 on January 9.

Based on information received from Texas Instruments regarding the operational amplifier manufacturing process problems, the date codes of the potentially defective amplifiers are between January of 2000 and October of 2002. Based on detailed evaluations, NUSI and Texas Instruments have determined that the components are unlikely to fail if they have been in operation beyond two weeks. After two weeks the failure rate is no greater than that of a random failure. Since the one Safety related module supplied to Constellation-Nine Mile Point had been in operation for over seven weeks, it is considered to be in a random failure category and therefore, does not create a substantial safety hazard. No other failures of safety related class 1E modules containing the potentially defective amplifier have been reported to NUSI.

Three other components (part numbers OPA111 OPA404, and 3656) have been identified by Texas Instruments as utilizing the same manufacturing process as the OPA2111 component.

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However, NUSI clients have not reported any failures of modules containing those amplifier part numbers.

NUSI's detailed evaluation determined that because the failure of the safety related CMM900 module supplied to Constellation-Nine Mile Point was a random failure (module had been in operation for over seven weeks) there was not a significant safety hazard to the functionality of the modules. However the utilities that had been supplied IE modules containing the potentially defective amplifiers were given the affected module ID numbers to enable them to determine the safety hazard specific to their application. Client feedback as of this date has indicated that there is not a significant safety hazard due to this defect.

THE NUMBER AND LOCATION OF ALL SUCH COMPONENTS IN USE AT, SUPPLIED FOR, OR BEING SUPPLIED TO ONE OR MORE FACILITIES SUBJECT TO 10 CFR 21.

NUSI determined that there were approximately 300 modules at 9 utilities that have the one of the three above listed amplifiers installed. A list of affected IE modules was faxed to the applicable points of contact at each of the utilities.

CORRECTIVE ACTION, WHICH HAS BEEN, IS BEING, OR SHOULD BE TAKEN, INCLUDING RESPONSIBLE PARTIES AND AN ESTIMATE OF TIME INVOLVED.

Corrective Action:

- The suspect components located within NUSI that contain the January of 2000 through October of 2002 date codes have been tagged with a conditional release. If the components are installed, the assembly will have a mandatory two-week burn-in to induce any failures that may be premature. For induced failures, the component will be replaced with one previously tested by the supplier, or with a component from a known good lot.
- TI has performed an over voltage stress test (OVST) on 350 of the OPA2111 components with the January 2000 through October 2002 date codes and will continue to provide OVST components from this lot as they become available. This testing is equivalent to a two-week burn-in and will be installed by NUSI as available until inventory can be replaced with known good date codes.
- Clients have been advised that applicable IE modules that have not been installed longer than two weeks may be returned to NUSI for an additional two-week burn-in or the utility may elect to perform the bench burn-in on site.
- Technical Bulletin, Volume 04, was issued January 21, 2003 to all IE affected clients to the attention of the technical point of contact to provide awareness of the component issue and details of client actions to be taken.

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Corrective Action to Prevent Recurrence:

A statement will be added to all future purchase orders to TI and TI suppliers, indicating that components, OPA2111, OPA404, OPA111, and 3656 that were manufactured between January of 2000 and October of 2002 are not to be sent to NUSI. This will be validated at the receipt inspection process.

COMMENTS OR ADVICE THAT SHOULD BE GIVEN TO OTHER PURCHASERS OR LISCENSEES.

See attached Technical Bulletin supplied to utilities.

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POTENTIALLY AFFECTED CLIENTS FOR 10CFR PART 21 REPORTABILITY #21-03-01 Page 1 of 2

Analysis and Measurement Services Contact: QA Manager, Dan Beverly Fax #865-691-9344

Carolina Power and Light (Progress Energy)

Progress Energy Manager – Nuclear Licensing Box 1551 Raleigh, North Carolina 27602

Progress Energy Department Manager Harris Nuclear Project State Road 1134, Box 165 New Hill, North Carolina 27562 Fax # 919-546-6750 (Buyer Fax #)

Progress Energy Department Manager Crystal River 3 Nuclear Project 15760 W Power Line St Crystal River, Florida 34228

Constellation – Nine Mile Point (Formerly Niagara Mohawk) Procurement Quality Assurance Supervisor PO Box 63 Lycoming, NY 13093 Fax # (315-349-7957 Procurement)

Dominion – Millstone Dominion Nuclear Connecticut Millstone Power Station PO Box 128 Waterford, CT 06385 Attn: Manager – Nuclear Safety Engineering, (860-437-5802 Procurement Fax #)

Entergy – James A. Fitzpatrick P.O. Box 110 268 Lake Road East I.ycoming. NY 13093 Attn. Dan Doherty – Purchasing. (Fax # 315-349-6059 Purchasing)

Entergy – Indian Point 2 & 3 Indian Point Energy Center P.O. Box 308 295 Broadway, Suite 1 Buchanan, NY 10511 IP3 Fax #914-736-8138 (Purchasing) Progress Energy Department Manager Brunswick Nuclear Project NC Highway 87, Box 10429 Southport, North Carolina 28461

Progress Energy Department Manager Robinson Nuclear Project SC HWY. 151 & 23, Box 790 Hartsville, South Carolina 29550 7

POTENTIALLY AFFECTED CLIENTS FOR 10CFR PART 21 REPORTABILITY #21-03-01 (Page 2 of 2)

Entergy – Pilgrim Pilgrim Nuclear Power Station 600 Rocky Hill Road Plymouth, MA 02360 Fax # 508-830-8880 (Purchasing)

First Energy Beaver Valley Power Station P.O. Box 4 Shippingport, PA 15077 Attn: Fax # 724-682-7850 (Purchasing) Please Forward to Manager of Nuclear Services and Manager of Licensing

Public Service Electric and Gas Procurement Assessment Manager, Fax #856-339-7707 PSE&G P.O. Box 236 Hancocks Bridge, NJ 08038 Mail Code W04

Rochester Gas and Electric Quality Assurance Manager Rochester Gas and Electric Corporation 1503 Lake Road Ontario, New York 14519 Fax # 585-771-3907 (Purchasing)

NMC (Formerly Wisconsin Public Service Corporation) Sites Procurement Engineering Organization NMC Kewaunee Kewaunee Nuclear Power Plant North 490, Hwy 42 Kewaunee, WI 54216-9510 Fax #920-388-8772 (Buyer)







January 21, 2003

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All Affected Clients

FROM:

NUS Instruments, Inc. 440 W. Broadway Idaho Falls, ID 83402

SUBJECT:

Notice of premature failure of OPA2111KP and related Burr Brown Amplifiers (Texas Instruments (TI)): p/n: OPA2111KP, OPA404AG, OPA111BM, 3656BG

NUSI TECHNICAL POINT OF CONTACT: Jim Siedelmann (208) 529-1000 Senior Engineer

INFORMATION PROVIDED IN THIS BULLETIN:

- Summary of the technical issue
- Recommended Customer Actions for modules on-site
- Affected customers, model numbers/serial numbers for affected NUSI modules
- Technical Background to the nature and statistics related to this issue to assist customers in assessing the impact of this issue in their module

SUMMARY:

A vendor process fabrication problem has been identified in components (listed above) used by NUS Instruments (NUSI) in the manufacture of some instruments. This bulletin is intended to notify both 1E and non-1E NUSI customers of the implications of this process problem on modules supplied by NUSI. Customers need to determine the extent of any safety hazard based upon their specific applications.

NUSI has reported this issue using the 10CFR Part 21 notification process and is preparing a final report (February 9, 2003). All information included in this bulletin is released as preliminary and subject to revision in the final report.

There are three known failures of the OPA2111KP chip contained in NUSI instruments. No other known failures have been reported using any of the other listed components (OPA404AG, OPA111BM, 3656BG).

RECOMMENDED CUSTOMER ACTIONS:

Because the potential failure mode is associated with voltage applied and time in operation, it has been determined by NUSI and TI that an extended burn-in period of 2 weeks would screen premature failure and shift the possibility of failure into a random category with the same failure probability as an unaffected part.

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Volume 04

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Attachment to Final Report 21-03-01 Event # 39516

RECOMMENDED CUSTOMER ACTIONS: (continued)

NUSI recommends the following customer action.

- Modules in operation for periods greater than 2 weeks: If all modes of module operation have been verified as functional during plant calibration checks, NUSI in conjunction with TI recommends customers take no further action.
- Modules not in operation for periods greater than 2 weeks: Perform bench burn-in per the instructions provided in Attachment 2. -

AFFECTED PURCHASE PERIOD: January 1, 2000 to December 31, 2002

AFFECTED CUSTOMERS: See Attachment 1

AFFECTED NUSI MODULES: KNOWN FAILURES

(contains OPA2111KP only) The following list includes safety related equipment.

CMM900 Module, Part Number NUS-A004PA-1

POTENTIALLY AFFECTED NUSI MODULES: NO KNOWN FAILURES

(contains both OPA2111KP and 3656BG). The following list includes safety related equipment.

- TMD500, TMD900
- Lead/Lag Modules: MTH500, MTH800, MTH801, MTH9000 .
- Simple Math Modules: CMM500, CMM801, CMM900
- Complex Math Modules: GEN801. GEN900
- Function Generators: -HLM801, HLS500
- Selector:

POTENTIALLY AFFECTED NUSI MODULES: NO KNOWN FAILURES

(contains 3656BG only). The following list includes safety related equipment.

- DAM502, DAM503, DAM800, DAM801 Dual Alarm modules:
- 1 SAM801 Single Alarm modules:
- ECA600, FCA300, FCA501, FCA502, FIA351, OCA801, SCA100 .
- Isolators: **PIR500** Repeaters:

POTENTIALLY AFFECTED NUSI MODULES: NO KNOWN FAILURES

(contains OPA2111KP only). The following list includes non-safety related equipment.

- AMS700
- PIDA700
- PID900-540-01 .
- PID900-543-04 .

Information Available:

Attachment 1: Affected Customers and Model and Serial numbers for Affected Modules Attachment 2: NUSI Letter NUS-JS-03-002