

September 2nd, 2015

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

cc: Edward H. Roach, Chief, Construction Mechanical Vendor  
Inspection Branch, Division of Construction Inspection and  
Operational Programs, Office of New Reactors

**Subject: Reply to a Notice of Nonconformance**

Reference NRC Inspection Report No. 99900905/2015-202  
Nonconformance 99900905/2015-202-02

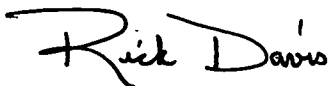
**Dear Sir/Madam:**

NTS Huntsville, AL has reviewed your response to our submittal for Nonconformance 99900905/2015-202-02 received on August 17<sup>th</sup>, 2015 and is enclosing 2<sup>nd</sup> response to said nonconformance.

Should there be any questions or need for additional information, NTS will be pleased to provide the same. I may be contacted by phone at (256) 716-4483, or by email at [rick.davis@nts.com](mailto:rick.davis@nts.com).

Sincerely yours,

NTS, Huntsville Operations



Rick Davis  
Manager, Quality Assurance

Attachment: Response to Notice of Nonconformance

Distribution: Tom Brewington, Keith Wilson, Patrick Turentine

IE09  
NRO

**RESPONSE TO NRC NOTICE OF NONCONFORMANCE**  
**Inspection Report 99900905/2015-202, dated August 13, 2015**

Dear Mr. Davis:

Thank you for your July 27, 2015, letter in response to the Notice of Nonconformances (NON) that were discussed in the subject U.S. Nuclear Regulatory Commission (NRC) inspection report (IR).

We have reviewed your letter and found that it is not fully responsive to addressing NON 99900905/2015-202-02. Specifically:

1. Your response to NON 99900905/2015-202-02 states, in part, that NTS has discontinued the use of NALCO for the testing of demineralized water until all proper documentation and approval has been accomplished to add this vendor to NTS AVL through performance of a survey of the vendor's processes and QA program. However, NTS did not address an evaluation of potential adverse effects of past use of NALCO to test demineralized water at NTS. Please describe how NTS has evaluated NALCO's processes and testing to provide assurance that prior testing of demineralized water provided acceptable results. Additionally, please describe the extent-of-condition review to determine the potential adverse impact on safety/relief valves that have been exposed to impurities in demineralized water at NTS.

Please provide a written explanation or statement within 30 days of this letter in accordance with the instructions specified in the enclosed NON of inspection report No. 99900905/2015-202. The agency will consider extending the response time if you show good cause for us to do so.

Please contact Mr. Raju B. Patel at 301-415-3511, or via electronic mail at [raju.patel@nrc.gov](mailto:raju.patel@nrc.gov), if you have any questions or need assistance regarding this matter.

**RESPONSE TO NRC NOTICE OF NONCONFORMANCE**  
**Inspection Report 99900905/2015-202-02, dated August 13, 2015**

- (1) **NRC Response;** NTS did not address an evaluation of potential adverse effects of past use of NALCO to test demineralized water at NTS.

**NTS Response:** NTS has evaluated any potential adverse effects from using NALCO to test its demineralized water. A sample of deionized water was supplied to a separate vendor (TMC, which is currently on the NTS's AVL) for analysis. The results from TMC analysis were then compared to the NALCO past test results with minimal differences noted (see attached test results). Based on this comparison, it is the opinion of NTS that NALCO test results showed that the demineralized water used for past Huntsville plant operations posed no potential adverse effect to any test specimens or any other customer provided equipment

- (2) **NRC Response;** Please describe how NTS has evaluated NALCO's processes and testing to provide assurance that prior testing of demineralized water provided acceptable results.

**NTS Response:** NTS uses city water and maintains its own demineralizer beds and de-oxygenation system. This is necessary to protect our boiler/piping system. NTS maintains the demineralized water system and utilized the test results from NALCO for reference only as an over check on water chemistry for protection of the boiler system.

A comparison of water analysis was performed in 2011, sample water was sent to TMC an approved supplier for Wyle/NTS and compared to the analysis provided by NALCO to ensure readings were within guidelines, all readings were satisfactory providing Wyle/NTS with confidence that quality of water was in proper range for demineralized water.

NTS again sent sample water to TMC on August 7<sup>th</sup>, 2015 for analysis. NTS then compared the latest NALCO water analysis with analysis from TMC. All readings were satisfactory with minimal differences and within proper range for demineralized water.

- (3) **NRC Response;** Additionally, please describe the extent-of-condition review to determine the potential adverse impact on safety/relief valves that have been exposed to impurities in demineralized water at NTS corrective steps that have been taken to avoid noncompliance.

**NTS Response:** NTS has evaluated any potential adverse impact on its safety/relief valves that have been exposed to impurities in demineralized water at NTS. It is the opinion of NTS that based on existing and past water analysis no impact has been imposed on any of the Safety/Relief valves. NTS concludes that no water exceeded that of demineralized water as provided in Department of Energy Handbook DE-HDBK 1015-2/93 (Principles of Water Treatment), during the time period in which the NALCO water analysis was utilized.

# TMC

Technical Micronics Control, Inc.

## CHEMICAL ANALYSIS

TO: National Technical Systems  
7800 Highway 20 West  
Huntsville, Alabama 35806

Attention: Rick Davis

ANALYTICAL REPORT NO: 322643

DATE RECEIVED: 08-07-15

DATE REPORTED: 08-10-15

COLLECTOR: Client

P.O. #: PRPO036197-3

SAMPLE INFORMATION: One (1) DI Water Sample for Chemical Analysis

| SAMPLE INFORMATION                  | RESULTS OF INVESTIGATION |             |                         |              |                      | ANALYSIS DATE/TIME |
|-------------------------------------|--------------------------|-------------|-------------------------|--------------|----------------------|--------------------|
|                                     | Parameter                | Method      | Detection Limit / Units | Result       | Standard Check Value |                    |
| pH                                  | SM4500-H <sup>+</sup>    | S.U.        | 4.77                    | 4.00<br>7.01 | 3.98<br>7.01         | 08-07-15 12:25     |
| TSS                                 | SM 2540 D                | 2mg/L       | <2                      | Blank        | <2                   | 08-07-15 15:15     |
| Turbidity                           | SM 2130 B                | .005 NTU    | 0.82                    | 1.0          | 0.98                 | 08-07-15 11:40     |
| Conductivity                        | SM 2510 B                | .01 umhos   | 7***                    | 1412         | 1400**               | 08-07-15 12:15     |
| Fluoride                            | HACH 8029                | 0.02 g/L    | 0.08                    | 1.0          | 1.1                  | 08-07-15 13:30     |
| Chloride                            | HACH 8113                | 0.1 mg/L    | <0.1                    | 1.0          | 1.1                  | 08-07-15 15:00     |
| Nitrate                             | HACH 8171                | 0.1 mg/L    | <0.1                    | 1.0          | 1.0                  | 08-07-15 15:30     |
| o-Phosphate as P                    | SM4500 P                 | 0.06 mg/L   | <0.06                   | 1.0          | 0.981                | 08-07-15 16:00     |
| Sulfate                             | HACH 8051                | 2 mg/L      | <2                      | 2            | 2                    | 08-07-15 14:30     |
| Total Hardness as CaCO <sub>3</sub> | SM 2340 B                | 0.141mg/L   | <0.141                  | 2.916        | 2.913                | 08-09-15 11:00     |
| Calcium as CaCO <sub>3</sub>        | SM 2340 B                | 0.0175 mg/L | 0.0175                  | 2.497        | 2.492                | 08-09-15 11:00     |
| Magnesium as CaCO <sub>3</sub>      | SM 2340 B                | 0.1235 mg/L | <0.1235                 | 0.4188       | 0.4209               | 08-09-15 11:00     |
| Calcium                             | EPA 6010 B               | 0.007 mg/L  | 0.007                   | 1.0          | 0.998                | 08-07-15 16:00     |
| Copper                              | EPA 6010 B               | 0.01 mg/L   | <0.01                   | 1.0          | 1.003                | 08-07-15 16:00     |
| Iron                                | EPA 6010 B               | 0.01 mg/L   | <0.01                   | 1.0          | 1.005                | 08-07-15 16:00     |
| Magnesium                           | EPA 6010 B               | 0.03 mg/L   | <0.03                   | 0.1          | 0.1005               | 08-07-15 16:00     |
| Potassium                           | EPA 6010 B               | 0.02 mg/L   | <0.02                   | 1.0          | 0.989                | 08-07-15 16:00     |
| Silicon*                            | EPA 6010 B               | 0.02 mg/L   | <0.02                   | 0.5          | 0.503                | 08-07-15 16:00     |
| Sodium                              | EPA 6010 B               | 0.02 mg/L   | 0.034                   | 1.0          | 1.029                | 08-07-15 16:00     |

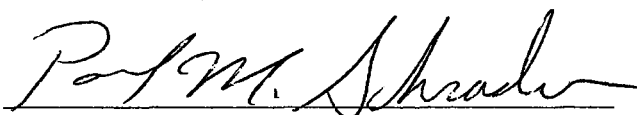
\* Silicon is not Total Silicon. It is only amount digestible in Nitric Acid/Hydrochloric Acid mixture.

\*\* To 3 significant figures.

\*\*\* Water with a conductivity of 7 umhos has an approximate electrolyte contamination of 1.4 to 3.5 mg/L and is considered to be pure - (Department of Energy DE-HDBK 1015-2/93 Principles of Water Treatment).

Analysis performed by: P. Schrader, M. Hinton

Approved for distribution:



Paul M. Schrader  
Laboratory Manager

**Final - Report Number:** 1401268  
**NATIONAL TECHNICAL SYSTEMS**  
 7800 HWY 20 WEST  
 HUNTSVILLE AL 35806 USA  
**Sold To:** 0001041739 **Ship To:** 0002122664  
**Representative:** JOHN STONE

**Sample Number** NW158980  
**Date Sampled** 31-Mar-2015 14:00  
**Date Received** 2-Apr-2015  
**Date Completed** 9-Apr-2015  
**Date Authorized** 9-Apr-2015

**Water Analysis**

This sample was analyzed as received, the results being as follows:

**Sampling point:** SRV BOILER MAKE-UP WATER

**Water**

**Cations - Metals Test Method: CW14024**

|                               | <b>Total</b> |
|-------------------------------|--------------|
| Calcium (Ca)                  | <5.0 µg/L    |
| <i>Calcium (CaCO3)</i>        | <12 µg/L     |
| Copper (Cu)                   | <2.0 µg/L    |
| Iron (Fe)                     | <2.0 µg/L    |
| Magnesium (Mg)                | <1.0 µg/L    |
| <i>Magnesium (CaCO3)</i>      | <4.1 µg/L    |
| Potassium (K)                 | 19 µg/L      |
| Silicon (Si)                  | 6.0 µg/L     |
| <i>Silica (SiO2)</i>          | 13 µg/L      |
| Sodium (Na)                   | 34 µg/L      |
| <i>Total Hardness (CaCO3)</i> | 0 - 16 µg/L  |

**Anions Test Method: CW15029**

|                       | <b>Total</b> |
|-----------------------|--------------|
| Fluoride (F)          | <2 µg/L      |
| Chloride (Cl)         | 6 µg/L       |
| Nitrate (NO3)         | <6 µg/L      |
| Ortho Phosphate (PO4) | <4 µg/L      |
| Sulfate (SO4)         | <3 µg/L      |

**Other Analytes**

|                                | <b>Test Method</b> | <b>Total</b> |
|--------------------------------|--------------------|--------------|
| Conductivity at 25°C           | CW11063            | 1 µS/cm      |
| pH @ 25°C                      | CW11059            | 5.0 pH Units |
| Total Suspended Solids @ 105°C | CW12003            | <4 mg/L      |
| Turbidity                      | CW13046            | 0.25 NTU     |

**COMPANY WITH  
 QUALITY SYSTEM  
 CERTIFIED BY DNV  
 = ISO 9001:2008 =**

Authorized by Kimberly Jackson  
 Principal Chemist