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ACF-10-0125

April 26, 2010

Mr. Joseph Shea, Director  
Division of Fuel Facility Inspection  
U.S. Nuclear Regulatory Commission, Region II  
245 Peachtree Avenue NE, Suite 1200  
Atlanta, GA 30303-1257

- References:
- 1) Docket No. 70-143; SNM-124
  - 2) Confirmatory Action Letter (CAL No. 2-2010-001), dated January 7, 2010, Mr. Luis A Reyes (NRC) to Mr. David L. Kudsin (NFS)
  - 3) Letter (21G-10-0085), dated April 26, 2010, Mr. David Amerine (NFS) to Mr. Luis Reyes (NRC)

**Subject: Information to Support Resumption of BPF Operations**

Dear Sir:

In Reference 3, Nuclear Fuel Services, Inc. (NFS) confirmed its readiness to restart the Blended Low Enriched Uranium Preparation Facility (BPF) and requested that NRC commence their review of NFS' readiness to restart the BPF U-Metal/Oxide process and associated support systems.

NFS' confidence in its readiness to restart the BPF was based on a period of deliberate actions and evaluations. The success of the restart of the Naval Production Product Line (NPPL) provided a substantial basis and demonstration that the requested additional restart is appropriate.

Since the facility-wide shutdown in December 2009, NFS has conservatively transformed its standard method of operation, including careful evaluations of our progress. This practice was first displayed in the completion of the Confirmatory Action Letter (CAL) "Actions Prior to Restart of Operations" commitments. Each individual action received Quality Assurance review prior to receiving a final review by the Corrective Action Review Board (CARB). Furthermore, NFS management conducted a series of "step-back" reviews. The first review was conducted to determine if there were gaps relative to the initial causal analyses. The second review was conducted to evaluate the comprehensiveness of the entire suite of corrective actions that had been taken. Management systems that played a significant role in the past events have also been enhanced, and an overview is included in Attachment 1. These enhancements and our pattern of attention to detail resulted in the determination that the NPPL restart was appropriate.

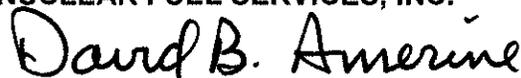
Restart of the BPF is predicated on the successful completion of the Management Readiness Assessment (MRA) Start-up Check List, as judged by the MRA Board. Additionally, as defined in our Restart Plan, the MRA Board completed a successful "Way Point Evaluation" on April 9, 2010, which determined that NFS' operational performance post-restart of the NPPL has demonstrated the necessary improvement in the areas of management oversight, communications, questioning attitude, and safety over production. Therefore, it was the recommendation of the MRA Board that the NPPL continue its successful operation.

It should be noted that "Way Point Evaluations" will be conducted post-restart of the BPF and any evidence of degradation in the areas of management oversight, communications, questioning attitude, or safety over production will result in immediate action to correct, including, if appropriate, standing the facility back down until actions are completed. Appropriate management oversight is imperative to ensure the organization stays on course with regard to safe, compliant, and reliable operations.

Several considerations were made for evaluating whether operations should be extended to the BPF process areas. The U-Oxide Dissolution system was reviewed, and a few physical changes were made to enhance the control of nitrogen compound gases (NO<sub>x</sub>). A summary of this review and the physical changes is included in Attachment 1. In addition, the majority of the management support team is common between the two facilities; therefore, improvements demonstrated in the NPPL are fully expected to extend to the BPF. BPF facility management has been involved in the oversight of the restart of the NPPL, and has experienced the opportunity to participate in the positive changes associated with that facility's performance. Finally, although in a shutdown mode, there are numerous examples to demonstrate equivalent cultural improvements within the BPF workforce. Therefore, based on their evaluation, the MRA Board recommended to the NFS President that BPF U-Metal/Oxide and associated support systems are ready for restart.

If you or your staff have any questions, require additional information, or wish to discuss this further, please contact me at (423) 743-1702, or Mr. Mark Elliott, Director of Safety and Security, at (423) 743-1705. Please reference our unique document identification number (21G-10-0089) in any correspondence concerning this letter.

Sincerely,  
NUCLEAR FUEL SERVICES, INC.



David B. Amerine  
President

WRS/smd

Copy:

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Attachment I

**OVERVIEW OF  
MANAGEMENT SYSTEM ENHANCEMENTS AND PHYSICAL CHANGES**

**CHANGE CONTROL**

In order to strengthen the change control process, several enhancements were made to configuration management procedures. Requirements were added to NFS-CM-004, "NFS Change Control Process", to provide a technical basis with sufficient detail to facilitate the risk and hazard assessment of process changes. Improvements were made to the technical basis document format that were designed to elicit more detailed information regarding changes to a document, process, process system, physical change, or a new process that authorizes changes to feed materials, process parameters, process chemistry, reagent, gases, chemical concentration, process sequence, etc. These changes are now implemented and documented per NFS-TS-009, "Configuration Management of Process Change". This is the minimum level of documentation required to ensure that a change can be properly evaluated for potential impacts and for determination of procedures and controls that must be in place prior to implementation of a change. Training on the revisions to these change control procedures was provided to personnel involved in the change control process.

The Change Control Board, the Safety & Regulatory review functions, and the Safety & Safeguards Review Council (SSRC) were also trained on the revised change control procedures and they expect the technical basis for a change to meet the new requirements. Personnel in these groups understand the importance of not proceeding in the face of uncertainty and have developed an even stronger questioning attitude regarding proposed changes. Their allegiance is to preservation of the licensed design basis, or, if necessary and justified, applying for a license change, and the fidelity of the plant configuration to the design basis.

To further ensure that proposed changes receive the proper level of review by the Integrated Safety Analysis (ISA) function, additional screening criteria were established to help identify potential impacts to the chemical, radiological, and fire safety bases. The need for safety analyst reviews of a proposed change is determined using a graded approach based on the type of configuration item(s) involved, associated risks, and type and extent of the proposed change. Information about the change is communicated to the applicable safety analysts to enable review and revision (if needed) of the safety basis documents.

In addition, more stringent requirements have been established and must be met in order to expedite changes. Such changes are only allowed to address failures which are adversely affecting personnel safety or safety and regulatory compliance, or which may cause damage to equipment. Having a negative impact on production schedules is no longer considered a reason to expedite a change.

Improvements were also made to the off-shift approval of changes. Only changes that have been reviewed/approved by the applicable Safety and Regulatory functions (ISA, Nuclear Criticality Safety, Industrial Safety, Health Physics, and Environmental Safety) and have been determined to not impact the safety basis, may be approved or accepted via telephone. Also, changes that have been determined by Safety and Regulatory to have an impact on the safety

and regulatory basis will have an enhanced safety review by Senior Management prior to implementation.

### **CORRECTIVE ACTION PROGRAM**

Our focus on incidents in the past has been to quickly correct a specific problem and then continue to operate without truly understanding whether broad implications also exist. Although the specific problem was usually corrected, we sometimes failed to follow through to completion, failed to implement actions to prevent recurrence, or failed to evaluate the extent of condition potentially affecting other areas in the plant. The focus of the Management team has changed – primary emphasis is put on sound technical decisions, investigation of problems to determine root cause, and looking for latent organizational weaknesses prior to moving forward.

The systems that have been implemented or enhanced for evaluating unusual events, managing change, and conducting investigations cause us to look systematically and prevent us from proceeding in the face of uncertainty. Extent of condition is being applied more consistently, and the suite of investigatory tools has been expanded to include reviews of extent of cause and safety culture implications.

The Corrective Action Review Board (CARB) now reviews all Full Team Root Cause Investigations, and when performed, approves the associated Safety Culture Implications Review, Extent of Condition Evaluation, and Extent of Cause Evaluation to help ensure appropriately broad investigations and effective corrective actions. Additionally, the CARB reviews, for quality and completeness, all completed corrective action/commitment reports from Full Team Root Cause Investigations and associated reviews/evaluations. The CARB either accepts or rejects the corrective action/commitment report and may assign an effectiveness evaluation, as appropriate, to ensure the effectiveness of the completed action item.

A review of NFS Full Team investigations was conducted by a subject matter expert and recommendations were provided to assist NFS in establishing a plan to implement enhancements necessary to ensure adequate breadth and depth of NFS investigations. A formal review of TapRoot root cause investigation reports will be conducted by an independent expert when requested by the CARB. This practice will continue until an internal assessment determines that the desired standard is being consistently achieved.

### **ORGANIZATIONAL STRUCTURE**

The Engineering organization has been restructured such that the Chief Engineer reports directly to the NFS President and all engineering functions report to that position. Engineering will be totally separate from Operations in order to ensure a check and balance of the daily work on the floor, and also to enable our engineers to monitor the fidelity of the plant's design basis to the facility's actual condition.

The Safety organization was elevated within NFS and a potential production influence was eliminated by making the Safety organization report directly to the NFS President, rather than the Vice President of Operations. A Nuclear Safety Manager position was established, who reports at the Director level. This individual has Nuclear Criticality Safety, Integrated Safety Analysis, and Radiological Safety as direct reports. This change provides a better span of control and oversight for those key nuclear safety functions.

The Assurance Department is a new department at NFS, which replaces and modifies the mission of the Nuclear Safety Oversight Department. The Assurance Department Director will report not only to the NFS President, but also to the NFS Board of Directors, to ensure appropriate oversight at all levels of the organization. The mission of Assurance is to help the company attain and maintain reliable operational and safety performance through better understanding of its performance (and acting to continuously improve performance); promoting and facilitating a Safety and Compliance Conscious Work Environment; and helping it to become increasingly capable of identifying and correcting its own issues. This will also enable the organization to maintain a vital connection to, understanding of, and compliance with the contractual and regulatory requirements that are essential to our stakeholders. Significant differences in function include the addition of the Corrective Actions Program (formerly in the Human Performance & Learning Department), and the movement of the Quality Assurance Program to the Safety, Security & Quality Department. The Employee Concerns Program will remain, as will the department's responsibility for the local implementation of the B&W Ethics & Compliance Program. New program areas that will be established within Assurance include: Assessment & Metrics, Lessons Learned/Operating Experience, and Standards/Requirements Identification Documentation.

Program Management (PM) is a new organization at NFS. This organizational change has safety culture benefits. NFS established this function in January of 2010 to be responsible for activities related to contract service and support, contract profit and loss, customer liaison, and long term production scheduling. Formerly, these activities were the responsibilities of the Operations Department, and would have the potential to introduce distraction and inappropriate production pressure.

The Work Management organization is a new organization at NFS. The function of this group is to coordinate all work and to alleviate administrative duties from the shift supervisors, allowing them to focus on safety.

### **SAFETY BASIS REVIEW OF U-OXIDE DISSOLUTION SYSTEM**

A review was performed for the U-Oxide Dissolution system for the purpose of verifying that the safety assumptions and controls match field conditions and current operations. A multi-disciplinary team (ISA, Nuclear Criticality Safety, Industrial/Fire Safety, the system Process Engineer, and independent observers) conducted the review. The system drawings, procedures, Items Relied On For Safety (IROFS), Safety-Related Equipment (SRE), and set-points were reviewed to ensure the assumptions made in the safety basis documents match or bound the actual field conditions and current operations. Although a number of observations were noted, none of the observations were safety significant and none of the observations would preclude a safe startup of the system.

### **PHYSICAL CHANGES FOR THE U-OXIDE DISSOLUTION SYSTEM**

Physical changes included the deletion of components associated with the former uranium metal oxidation function of the systems, modifications to enhance purging of potential NO<sub>x</sub> from the system, and design modifications to ensure that the purge system modifications did not introduce other uncontrolled failure modes. Physical changes were also made in support equipment to better support either process safety or employee safety. These changes included enhancements to the process ventilation system, enclosure drains and isolation of inactive systems.