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AIRBORNE EXPRESS

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March 15, 2004

Director
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

References:
1) Docket No. 70-143; SNM License 124
2) Letter from B.M. Moore to NRC, License Amendment Request for the Oxide Conversion Building and Effluent Processing Building at the BLEU Complex, dated October 23, 2003 (21G-03-0277)
3) NRC Licensing Review to Support License Amendment Request for the Oxide Conversion Building and Effluent Processing Building, conducted on January 20, 2004
4) Letter from B.M. Moore to NRC, Commitment Letter to Address NRC Licensing Review Questions Pertaining to Instrumentation & Controls at the OCB and EPB, dated February 6, 2004 (21G-04-0021)
5) NRC Licensing Review to Support License Amendment Request for the Oxide Conversion Building and Effluent Processing Building, conducted on February 10-11, 2004

Subject: **Revision to Commitment Letter to Address NRC Licensing Review Items Nos. 2, 4 and 12 Pertaining to Instrumentation & Controls at the OCB and EPB**

Dear Sir:

Nuclear Fuel Services, Inc. (NFS) hereby submits revised responses to questions raised during the licensing review that was conducted in January in Rockville, Maryland (Reference 3). The revised response to Items No. 2, 4, and 12 reflect the discussions with your staff during the licensing review that was conducted in February in Rockville (Reference 5).

As noted in the attached responses, safety basis documents supporting this licensing review for the Oxide Conversion Building (OCB) and Effluent Processing Building (EPB) will be updated.

NMSS01

As such, this submittal contains commitments that will be incorporated in the ISA Summary for the OCB and EPB located at the BLEU Complex.

If you or your staff have any questions, require additional information, or wish to discuss this, please contact me, or Mr. Rik Droke, Licensing and Compliance Director at (423) 743-1741. Please reference our unique document identification number (21G-04-0038) in any correspondence concerning this letter.

Sincerely,

NUCLEAR FUEL SERVICES, INC.

B. Marie Moore
Vice President
Safety and Regulatory

JSK/lsn
Attachment

cc:
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Attachment

Revised Commitment Letter to Address NRC Licensing Review Questions Pertaining to Instrumentation & Controls at the OCB and EPB

Item: 02

NRC:

On the bottom of Page 343 and the top of Page 344 of the ISA Summary, a discussion pertaining to 10 CFR 70.64(a)(4), "Environmental and Dynamic Effects," is provided. Expand this discussion to include information similar to that provided in the NFS response dated November 5, 2003, for the staff's Question 50.

This information is required to determine if IROFS are adequate such that they meet the performance requirements of 10 CFR 70.61 and the requirements of 10 CFR 70.64(a)(4).

NFS RESPONSE:

Periodic testing, inspection and maintenance of IROFS will insure availability and operability.

NFS will replace Section 6.2, "Environmental and Dynamic Effects" with the following.

The BLEU Complex facilities and equipment are designed to minimize problems from variations (both normal and from credible upsets) in the ambient and process conditions under which the IROFS equipment is expected to operate. Consideration in the design of the facility and equipment is given to the following to prevent loss of safety functions:

- *Protection of piping and vessels from vehicles and forklifts.*
- *Protection of fittings from external impact.*
- *Corrosion protection.*
- *Vibration from pumps/fans etc.*
- *Water discharge from sprinkler systems (or other splash).*
- *Weather*
- *Other facility siting factors including the railway, air traffic patterns, and nearby commercial facilities.*

As such, IROFS will be qualified to demonstrate that they can perform their safety functions under the environmental and dynamic service conditions in which they will be required to function and for the length of time their function is required.

Specific requirements for each IROFS will be contained in the ISA.

FANP/NFS gave appropriate consideration to the purchase of equipment and instruments by a determination of applicability and specifying proper sizing and materials of construction. Periodic testing, inspection, and maintenance of IROFS will insure availability and operability.

Non-IROFS will be able to withstand environmental stresses caused by environmental and dynamic service conditions under which their failure could prevent satisfactory accomplishment of safety functions by IROFS.

The term "non-IROFS" means essential utilities. Essential utilities are the only non-IROFS that would affect the safety function of the IROFS. Equipment that controls critical parameters will fall within the functional boundary of the IROFS. The system IROFS are designed to fail in a safe configuration. Fail-safe is a term applied to a process or component for which removal of a utility results in the process or component failing in a safe configuration.

If, however, a utility were required to ensure the safety function of the IROFS, this utility would fall within the IROFS boundary for functional testing and application of management measures.

Item: 04

NRC:

Throughout Section 3 of the ISA Summary, filters, scrubbers, heaters, and blowers such as the HEPA filters and the Process Exhaust Ventilation Scrubber listed on Page 61 and the vacuum-pressure system blower listed on Page 74 are included under "Active Engineered Controls." Also the Compressed Air Dryer System is listed on Page 326 as an active engineered control. Discuss whether or not these controls rely on electrical power to perform their safety functions. If appropriate, revise the discussion of utility services provided on Page 347 of the ISA Summary.

This information is required to determine if these components (when and if used as IROFS) are adequate such that they meet the performance requirements of 10 CFR 70.61.

NFS RESPONSE:

Section 3 of the ISA Summary is intended to provide a general discussion of the processes, the associated hazards, and the safety controls provided, per the direction of NUREG-1520. These controls may be used as IROFS or defense in depth. Specific controls (IROFS) for specific accident scenarios, are discussed in Section 4 and 6. The required IROFS are listed in Table 6-1, "IROFS for OCB and EPB". The different control levels will follow the definitions set forth in NUREG-1520. In addition, Section 3 headings labeled "Administrative Controls" will be changed to "Administrative/Enhanced Administrative Controls."

There are no IROFS in the OCB/EPB which rely on electrical power to perform their safety function – all controls fail safe. The following two IROFS definitions will be changed to better show how their safety functions do not rely on electrical power or other utilities.

Compressed Air Dryer System

Existing IROFS OBS-11

IROFS ID #	Safety Function Description	Failure Description
OBS-11	Compressed air dryer system - removes residual moisture in compressed air supply - prevents water ingress into the moderation controlled area (hygrometer detects moisture in airline, and switches over to alternate desiccant vessel).	Water enters moderation controlled area due to compressed air dryer system failure

Revised IROFS OBS-11

IROFS ID #	Safety Function Description	Failure Description
OBS-11	Compressed air supply valve interlocked closed if high moisture is detected.	Interlock fails to close compressed air supply valve on high moisture condition.

Vacuum-pressure System Blower

Existing IROFS HYD-5

IROFS ID #	Safety Function Description	Failure Description
HYD-5	Vacuum-pressure system blower	Vacuum-pressure system blower fails to maintain negative pressure on system

Revised IROFS HYD-5

IROFS ID #	Safety Function Description	Failure Description
HYD-5	Hydrogen supply valve interlocked closed if loss of calciner negative is detected , preventing build up of explosive atmosphere in equipment.	Interlock fails to close hydrogen supply valve on loss of calciner negative condition for greater than TBD time period.

The revised IROFS descriptions highlight how the OCB and EPB IROFS are designed to fail-safe on loss of utilities (power, compressed air, etc.) on both a plantwide and/or local area failure.

Item: 12

NRC:

Provide information on the SIC (Safety Independent Controller) and how it is used in the Oxide Conversion Facility.

NFS RESPONSE:

NFS will replace ISA Summary Section 6.2, "Instrumentation and Controls" with the following.

Instrumentation and Controls

Active engineered controls are used extensively for safety purposes in the OCB and EPB facility. Section 4.4 of the ISA Summary addresses the requirements for inspection, periodic functional checks, and maintenance to ensure the effectiveness of IROFS. This type of IROFS is typically implemented through the Central Control System (CCS). The CCS provides extensive internal diagnostic checks that will detect component failures and trigger alarms and in appropriate cases will send the outputs to a safe state. This is true for individual field instruments up through the controllers themselves and all communication links in between.

In addition to the CCS, the OCB will utilize a Safety Independent Controller (SIC). The SIC will be used to minimize common mode failures where redundant IROFS have similar control schemes. The SIC will be a completely independent controller with a different operating system, configuration software, and UPS. The SIC and CCS shall communicate for process control related functions, however neither controller relies on the other to execute its safety functions.

In general, equipment systems that will be used as enhanced administrative or active engineered control IROFS will have means for verification that key components of the IROFS are functional. Applicable information about monitoring each individual IROFS of these types will be contained in the ISA.

The design of IROFS listed in Table 6-1 includes consideration of instrumentation and control systems to monitor and control the listed IROFS. The identified alarms, indications, etc., provide added assurance that IROFS will be available and reliable when needed.
Again, Table 6-2 and Table 6-3 will be used to confirm and document that each engineered IROFS includes an appropriate level of instrumentation and controls.