NUCLEAR FUEL SERVICES, INC.
a subsidiary of The Babcock & Wilcox Company

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21G-11-0003
GOV-01-55-04
ACF-11-0007

January 6, 2011

Mr. Steven J. Vias, Branch Chief
Division of Fuel Facility Inspection
U.S. Nuclear Regulatory Commission, Region II
245 Peachtree Center Avenue NE, Suite 1200
Atlanta, GA 30303-1257

References: 1) Docket No. 70-143; SNM-124
2) January 3, 2011 telecom between Steven J. Vias (NRC) and Mark P. Elliott (NFS)

Subject: Safety Culture Improvement Plan

Dear Sir:

Per your discussion with Mr. Mark Elliott, please find attached the Safety Culture Implementation Plan.

If you or your staff have any questions, require additional information, or wish to discuss this matter further, please contact me at (423) 743-1702, or Mr. Mark Elliott, Director of Quality, Safety and Safeguards, at (423) 743-1705. Please reference our unique document identification number (21G-11-0003) in any correspondence concerning this letter.

Sincerely,
NUCLEAR FUEL SERVICES, INC.

David B. Amerine
President

WRS/smd
Attachment: Safety Culture Improvement Plan, Revision 0

Copy:

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ATTACHMENT

Safety Culture Improvement Plan, Revision 0
(24 Pages)

Nuclear Fuel Services'
Safety Culture Improvement Plan

REVISION 0

PURPOSE/OVERVIEW

The purpose of this document is to provide employees and other stakeholders with information about Nuclear Fuel Services' (NFS) actions, both underway and envisioned, to improve the company's safety culture. This document captures what has been accomplished, describes actions presently underway, lists future potential actions under consideration, and serves as NFS' overarching Safety Culture guidance. It is a living document and will be updated periodically.

This document exists in conjunction with the "NFS Legacy Report 2010/2011", which is a direct response to the Safety Culture Board of Advisors (SCuBA) reports, Integrated Safety Culture Assessments (ICSA) I and II. The Legacy Report addresses specific action items that are tracked and documented through the PIRCS and CAP systems at NFS. Items addressed in the NFS Legacy Report – 2010/2011 may have direct bearing, and in fact may be instrumental to the initiatives and accomplishments addressed in the SCIP – Charting a New Course. As such, it would be inefficient to track these items in a separate listing in the Problem Identification, Resolution, and Correction System (PIRCS) and the Corrective Action Program (CAP). The Charting a New Course plan, therefore, is designed to be a thematic, holistic overview of the philosophies and processes being implemented to ensure a sustained, long-term improvement in Safety Culture at NFS. The specific action items implemented as a result of this plan will be tracked under outstanding issues addressed in the NFS Legacy Report 2010/2011.

The 2010/2011 SCIP – "Charting a New Course" supports and is supported by three other aspects of NFS' future planning initiatives:

1. NFS Strategic Plan – 2010/2011
2. NFS Legacy Report 2010/2011
3. NFS Communications Plan 2010/2011

The NFS Communications Plan 2010/2011 is essential to the positive outcomes of all plans listed above. The Communications Plan will address the appropriate method for not only communicating the initiatives, but also measuring the results and ensuring the appropriate engagement by all NFS stakeholders.

SAFETY CULTURE IMPROVEMENT DEFINED

According to the International Atomic Energy Agency (IAEA), "Culture is to society what memory is to an individual. Culture includes traditions that reflect 'What has worked in the past.' It also encompasses the way people have learned to look at their environment and themselves, and their unstated assumptions about the way the world is and the way people

should act." More specifically the IAEA states the following as the most inclusive definition of culture:

"Culture is the human-made part of the environment." The discussion continues to reflect, "...culture shapes particular kinds of behaviours."

It takes years to establish a culture; it also takes years to actively change a culture. A Safety Culture is an organization's values and behaviors modeled by its leaders and internalized by its members, which makes **safe performance of work the overriding organizational priority**.

The following are key elements that must be present to cause meaningful change in safety culture:

- 100% executive commitment 100% of the time,
- Understand the 'current state' of the work environment, the drivers and potential barriers, including attitudes and beliefs, to change,
- Establish a compelling vision of the 'future state' and the case for change,
- Translate the vision into observable behaviors,
- Leaders become champions, marketers, and participate in key decisions impacting the safety culture,
- Incorporate vision and behaviors into the fabric of the organization – including the reward system,
- Establish an infrastructure to facilitate and support all elements of the culture change,
- Build knowledge/skills on the vision and behaviors,
- Show appreciation and celebrate successes,
- Learn from failures and setbacks,
- Listen, coach, and reinforce,
- Enforce full and consistent accountability, and
- Measure progress and adapt to achieve goals.

As shown below in figure 2, safety culture is composed of three elements and is itself a component of overall culture.

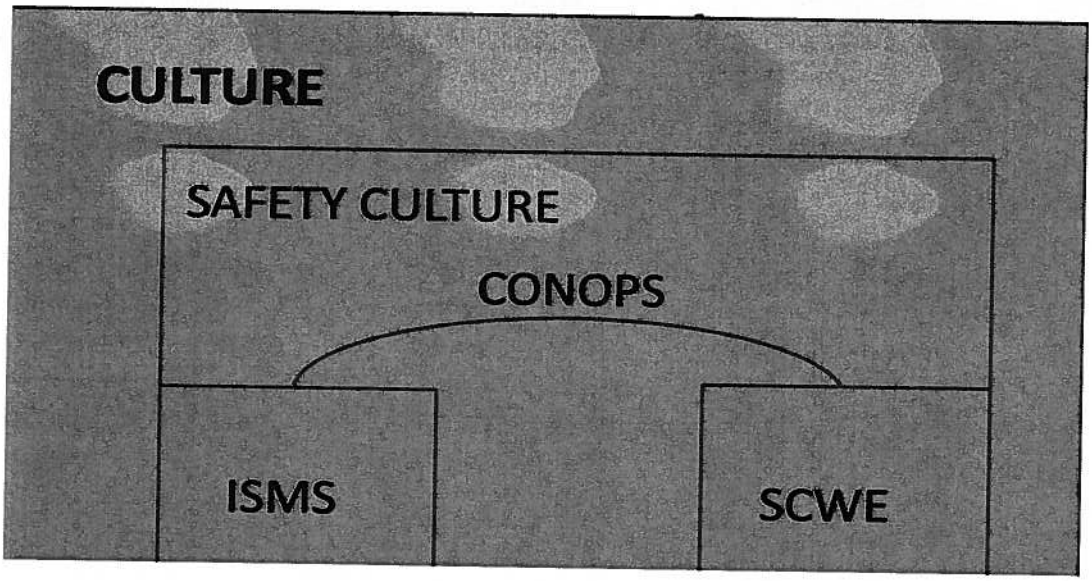

Figure 2

The Integrated Safety Management System described below is not yet implemented at NFS but will be formally introduced in 2011.

The acronym ISMS, which stands for Integrated Safety Management System, is based on the five Core Functions of:

- Defining the scope of the work,
- Analyzing the hazards associated with that work,
- Developing the protective measures to be taken to address those hazards,
- Obtaining proper authority to do the work and then executing it within those hazards controls, and
- Providing feedback on how the job went to be used in future similar work promoting continuous improvement.

These attributes apply to all work, not just physical work in the plant facility. By applying these attributes and the associated guiding principles, unprecedented safety records have been achieved by some organizations. The guiding principles are:

- Establishing Line Management responsibility,
- Defining clear roles and responsibilities,
- Determining competency based responsibility,
- Identifying standards and requirements,
- Balancing priorities,
- Tailoring hazards controls, and,
- Operational authorization of work.

The acronym SCWE, which stands for Safety Conscious Work Environment, is based on the principle that any employee can bring up any issue without fear of retribution and with full confidence the issue will be addressed on its own merit without ascribing motive. It is the pedestal upon which all other attributes rely. A SCWE, in turn, requires as many venues as possible for employees to express a concern or raise an issue. Those venues at NFS include an Employee Concerns Program, viable Human Resources and Legal departments, and an Ombudsman program.

The bridge across the ISMS and the SCWE pillars is 'Conduct of Operations' (CONOPS) or as it referred to at NFS, 'Conduct of Business' because the CONOPS' attributes below apply to all aspects of an endeavor, not just the operations of the facility. These attributes are:

- Personal accountability,
- Procedure compliance,
- Technical inquisitiveness, and
- A willingness to stop in the face of uncertainty.

Personal accountability is not blame but rather each individual, as a professional, taking responsibility for their contribution to the overall effort. Each person should be able to take pride in what they have accomplished at the end to the shift or the end of the day. Like a painter, they should be willing to sign their name at the end of the day indicating that they are proud that they did their very best.

Procedure compliance is what is done in the complicated business of a nuclear facility; compliance is neither blind nor malicious, but thinking. When combined with training and experience, the use of the procedure tool provides the highest probability of the desired outcome. The procedure is written by a subject matter expert and verified through review and walk down. However, as a tool a procedure should be both respected and suspected which is why a questioning attitude is necessary.

Technical inquisitiveness is a questioning attitude about everything. This approach to every situation means taking nothing for granted and double-checking everything. It means always making sure, to the maximum extent possible, that the outcome of one's actions will be what is anticipated. Most importantly, it also means asking for help when unsure of the outcome.

At NFS, stopping to get help is treated as an act of integrity. A willingness to stop is perhaps the most important attribute. It means never proceeding in the face of uncertainty.

The workplace priorities at NFS go hand and glove with all the above. These priorities in order of importance are:

- Safety
- Quality

- Schedule
- Cost

Safety is built on the principle that no one wants to get hurt or put anyone else in harm's way. Quality is the commitment made as professionals to deliver a product that meets or exceeds all the standards and requirements. From a pragmatic perspective, if these first two priorities ever suffer, schedule and cost are soon to follow. At NFS we take pride in meeting our commitments as expressed in the schedule, and we strive to accomplish our work within budget. However, we pursue these latter two priorities under the umbrella of the first two.

The Safety Culture structure described above has been developed by the Department of Energy (DOE) over the last 30 years and has resulted in significant safety culture strengthening in the facilities in which it has been introduced. The principles inherent in this approach are being introduced at NFS and will become integrated into our safety culture.

In the near future it is expected that both the NRC and the DOE will embraced eight common Safety Culture Traits. These eight traits have been already adopted by NFS and form the basis for action going forward.

THEME

Trust and respect among employees and stakeholders is characteristic of high performing organizations, and of organizations with a strong safety culture. According to the Advisory Committee on the Safety of Nuclear Installations (ACSNI), "Organizations with a positive safety culture are characterized by communications founded on mutual trust, and by shared perceptions of the importance of safety and by confidence in the efficacy of preventive measures."

Lack of trust fosters dissent, which invariably results in degraded performance that can lead (in extreme cases) to organizational collapse. Trust and respect are unstable. If one decreases slightly, the other will follow but to a greater degree, thus causing the first to decline even faster and so on until trust is lost. Restoring trust and respect requires huge expenditures of effort over a long period of time; an effort that is easily a thousand times greater than the lack of effort which allowed the decline. *It is easy to scatter black sand grains onto a white sandy beach. It is almost impossible to pick them back out.*

Most employees treat other employees with respect most of the time; some employees treat other employees with disrespect some of the time. Most employees do the right thing most of the time; some employees do the wrong thing some of the time. The challenge of any safety culture improvement effort boils down to:

- Treat others with respect, not just some or most of the time, but all the time.

- Do the right thing, not just some or most of the time, but all the time.
- Ensure that safety is the overriding priority in any situation

Treating employees with respect is in alignment with the scientific concept of ethic reciprocity more commonly known as the Golden Rule. Examples of ethic reciprocity (or the lack thereof) go back at least as far as the story of *The Eloquent Peasant* which is dated to the Middle Kingdom (c. 2040–1650 BCE) in Egypt. Perhaps the pyramid builders were in need of a Safety Culture Improvement Plan. Respect and trust (as well as efficiency and productivity) are also influenced by inclusion.

While it is likely that most people would not have cared to be included in the work of transporting pyramid stones, many might have liked to have been part of the safety culture team had there been one. Including employees in decision making generally results in better decisions. Including employees with a variety of backgrounds, perspectives, knowledge, proximity to events, and cultural norms increases the chance that good decisions will become great ones.

Therefore, an inclusive communications plan to emphasize and illustrate the expectations of the new "norm" with regard to respect, and specific expectations regarding safety culture improvement is imperative. The communications plan must address all areas of the safety culture, including objects, language, stories, rituals and behaviors (see NFS Communications Plan 2010/2011 for further detail.)

CHARTING A NEW COURSE – THE PLAN

This Safety Culture Improvement Plan (SCIP):

- Provides a brief history of how a less than adequate safety culture developed,
- Describes the transition processes underway to improve the safety culture,
- Establishes a vision and process for continued safety culture improvement, and
- Is an adjunct to the intranet interactive version.

BACKGROUND

Nuclear Fuel Services Inc. (NFS) is an American company that has been a major supplier of fuel for the United States Navy's fleet of nuclear-powered vessels since the 1960s. NFS is a subsidiary of the Babcock & Wilcox Company. Its operations are conducted principally in a high security 65-acre gated complex in Erwin, Tennessee.

The company is also America's leader in converting surplus weapons-grade uranium from U.S. Cold War stockpiles into valuable low-enriched uranium fuel material to power commercial

nuclear power plants. Known as down blending, the proprietary NFS process is currently being used to convert about 40 metric tons of highly enriched uranium (HEU) in various forms into fuel material for a commercial client. In 2007, the company was also awarded a contract by the U.S. Department of Energy's (DOE) National Nuclear Security Administration to convert 17.4 metric tons of HEU into material for America's Reliable Fuel Supply Program.

NFS employs over 800 people, with many more contributing daily in mission essential contractor roles. Since 1957, NFS has been a leading Unicoi County employer. Today the company is the largest employer in the county and is ranked as one of the top paying companies for hourly jobs in Northeast Tennessee.

RECENT HISTORY

In 2006, NFS began developing plans for an independent safety culture assessment because of a series of issues and events, which raised questions about NFS's commitment to and effectiveness of efforts to improve its operational performance and safety. After discussion of such an assessment with the Nuclear Regulatory Commission, NFS entered into a formal agreement to conduct a series of assessments over a period of two years. In 2007, NFS contracted a team of third-party independent nuclear and safety industry experts to begin the multi-year assessment process, which involved observations, interviews, and confidential surveys. This team operated under the title Safety-Culture Board of Advisors, or SCuBA.

In 2008, the SCuBA team developed an initial report. This report was provided to both NFS and the NRC and identified a number of operational challenges and issues at the facility. NFS immediately began implementation of a number of those suggestions and initiatives. In late 2008, Babcock & Wilcox acquired NFS, with the sale becoming final in January of 2009.

In the fall of 2009, NFS experienced a series of operational upsets. These events included a fire safety device inspection violation, an unexpected chemical reaction in the downblending facility, and a fire inside a glove box in the Commercial Development Line. Following consultation and guidance from the NRC, NFS instituted a temporary shutdown of the entire facility in late December of 2009. The NRC issued NFS a Confirmatory Action Letter (CAL), which outlined a number of corrective actions for NFS to implement prior to restarting facility operations.

Concurrent with these events, a second Independent Safety Culture Assessment (ISCA) was underway by the same team who conducted the 2007/2008 assessment. The second (2009/2010) assessment was conducted principally in 2009 and the report was released in June 2010. The report concluded, much the same as the first report, that NFS's safety culture was generally deficient when compared to industry norms and generally failed to meet regulatory expectations.

The events leading up to the December 2009 shutdown, the shutdown itself, and a preview of the likely finding of the second ISCA spurred executives, managers, and the workforce to take prompt action to address the noted deficiencies. The NFS team immediately began to implement fundamental changes in conduct of operations. Actions were taken to correct the events leading up to shutdown and to correct the root causes that allowed the shutdown events to occur. Following an intensive three-month period of reflection, hard work, change, and improvement, corporate and the NRC evaluators determined that the safety culture at NFS had improved substantially and permission was received to restart Navy fuel operations. Re-start operations were successful in part because:

- There was a clear vision and mission,
- Conduct of operations enhancements were developed with significant workforce input,
- Restart actions were well defined and focused,
- People were held accountable for their actions,
- A questioning attitude permeated, and
- Communications were effective.

Members of the ICSA Team, who were present during portions of the restart effort, acknowledged that management-involvement to change culture and hold individuals accountable was apparent, effective, and successful. Increased workforce sensitivity to key attributes such as developing a questioning attitude and willingness not to proceed in the face of uncertainty was observed.

Although the restart actions were very successful, they were not the end of a change cycle but rather the beginning. In March of 2010, B&W appointed a new president who brought over 44 years of nuclear facility experience, as well as first-hand knowledge of seven nuclear facility turnarounds. Under the new President's leadership, additional actions were rapidly initiated to supplement those already underway. By May of 2010, NFS had charted and set sail on a new course leading to an improved safety culture.

Changes included:

- Improving the safety culture to ensure behaviors always support safety as the top priority,
- Increasing accountability,
- Establishing higher standards for the corrective action program,
- Implementing a resource-loaded work schedule,
- Establishing a Plan of the Day (POD) and Plan of the Week (POW) accountability meetings,
- Enhancing technical training programs,
- Increasing workforce input into decision making,
- Requiring a measurable questioning attitude, and perhaps most importantly,

- Introducing workplace priorities, conduct of operations attributes, and a new checks and balances organization realignment, and
- Establishing an intrinsic safety conscious work environment in all areas of the facility.

In May of 2010, NFS restarted the Uranium-Oxide dissolution line. The sequential, methodical restart followed both NRC and NFS review of corrective actions taken to improve performance in the areas listed above. Significant improvement in the NFS conduct of operations had been observed and tracked through a series of performance metrics implemented at the NFS facility.

In June of 2010, the 2009/2010 ISCA team presented their final report. The report is important in that it outlines areas necessary for improvement at the NFS site as captured in its High Priority Findings and Recommendations; and provides specific details on technical, cultural, and procedural changes necessary for excellent facility performance. The report represented the "Current State" of NFS circa October 2009. Defining a current state is the first stepping-stone along the path to develop a "Future State" which must be well defined and contain:

- The corporation's vision for its safety culture,
- The attributes and behaviors that characterize that culture, and
- Agreement, understanding, and a belief that the vision is achievable.

In September 2010, NFS senior executives determined what NFS's future state should look like and developed a path to support its achievement. That future state and the path to reach it, entitled "Charting a New Course – Supporting the Future State," (Figure 1) is available in an interactive format on the NFS employee intranet and is the subject of the following sections of this Safety Culture Improvement Plan.

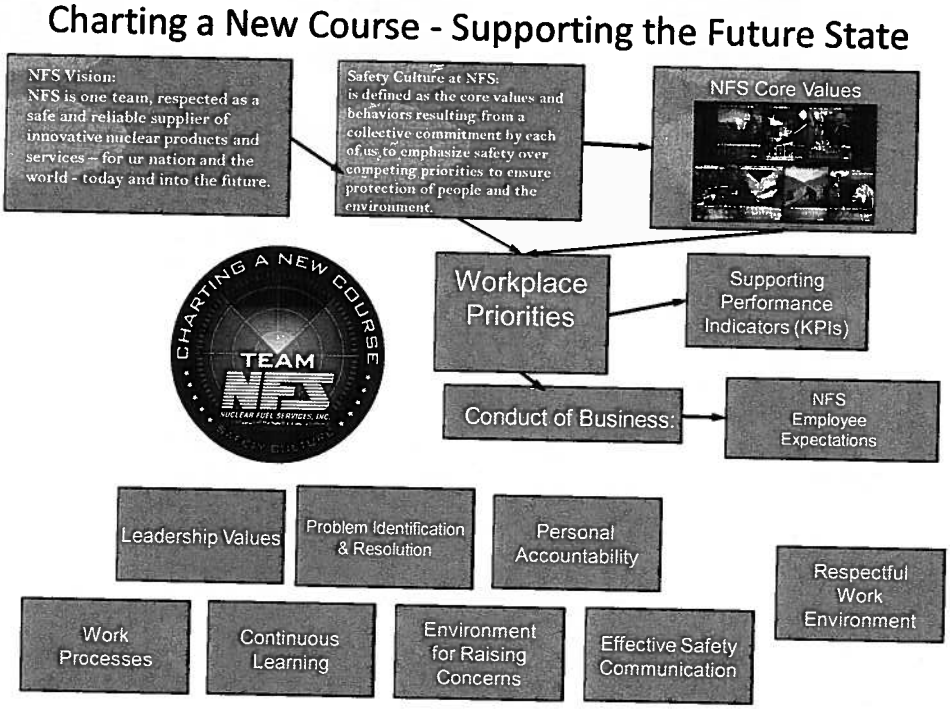

Figure 1

LETTING GO OF THE PAST

NFS has been a proud and dedicated company since its inception in 1957 and has provided invaluable service to our country and in particular to the U. S. Navy. These accomplishments must be recognized and continued; it is also necessary, however, to let go of past bad practices while retaining the lessons learned. The 2009/2010 ISCA report deficiencies must be addressed and corrected so NFS can move forward. They have been deemed "Legacy Deficiencies" and the report being prepared to describe how they are being addressed is entitled the "NFS Legacy Report 2010/2011." The Legacy Report is expected to be completed and available to stakeholders at the beginning of 2011. This report and the actions necessary to address and resolve legacy deficiencies are currently being formulated by a select group of senior managers and subject matter experts. Their objectives are to:

- Address high priority findings and recommendations first,
- Address causes of deficient conditions rather than only specific deficiencies,
- Work issues across organizational structure rather than within organizational silos,
- Create and maintain objective evidence of actions taken and their effectiveness,
- Establish realistic schedules that take resource availability into account,
- Require individual accountability from each person assigned a plan of action,

- Take credit for what has already been accomplished, and
- Do it right the first time.

NFS's response to the 2009/2010 ISCA II report is structured around the 7 High Priority Findings and Recommendations contained within the report, and the 13 Safety Culture Components as defined by the Nuclear Regulatory Commission (NRC). The 7 high priority findings, the high priority actions, and the associated accountable individuals tasked to address them are listed below:

1. Organizational and Individual Accountability:	M. Elliott
• Re-establish an Employee Evaluation System,	J. Birmingham
• Assign Single Point of Accountability for All Processes, and	K. Weir
• Develop and Execute a Safety Culture Improvement Plan.	E. Morgan
2. Corrective Action Program Effectiveness:	G. Darter
• Strengthen the PIRCS Process, and	R. Crowe
• Strengthen Root Cause Evaluations.	R. Crowe
3. Resource Management:	R. Daily
• Use the Fully-integrated, Resource-loaded Schedule to Insure Top Priorities are Worked First,	R. Moore
• Complete Work Management/Work Control Implementation,	K. Engle
• Execute the Infrastructure Improvement Implementation Plan,	R. Daily
• Strengthen Configuration Management, and	R. Storey
• Implement Equipment Reliability and Reliability Centered Maintenance Programs.	R. Crawford
4. Technical/Professional Competencies (White-Collar Workforce):	R. Barrientos
• Continue Implementation of the HuP initiative,	N. Kenner
• Provide Leadership Training for Managers	N. Kenner
• Identify Required Technical Competencies (WCW),	S. Sanders
• Develop Plans to Achieve Needed Competencies,	S. Sanders
• Establish a Senior Training Advisory Council (STAC), and	N. Kenner
• Shift Refresher Training to a Computer Based System.	S. Sanders
5. Questioning Attitude:	G Athon
• Enhance Operational Decision Making Processes,	M. McKinnon

• Set Clear, Enforceable Expectations for a Questioning Attitude and Technical Inquisitiveness. Reward those who comply, and	N. Keener
• Communicate the Bases of Significant Decisions Periodically.	M. McKinnon
6. Work Control:	J. Nagy
• Increase the Rigor, Formality, and Management Oversight Of Work Control Process, and	F. Kerns
• Post Positions once Position Descriptions are Approved and Staff the Work Control Vacancies.	K. Engle
7. Safety Conscious Work Environment:	L. Turpin
• Provide SCWE Training and Guides to all Managers, and	N. Marchioni
• Establish a Proactive Outreach Effort to Build Trust and Respect between Hourly and Salaried Employees, and	L. Turpin
• Arrange Outside Expert Training.	E. Morgan

SAFETY CULTURE IMPROVEMENT ACTIONS

Many actions have been completed, are underway, or under consideration to improve NFS's safety culture.

Completed Actions

(Less required objective evidence review and effectiveness evaluation)

Defined Eight Culture Safety Traits

- Leadership Values
- Problem Identification & Resolution
- Personal Accountability
- Work Processes
- Continuous Learning
- Environment for Raising Concerns
- Effective Safety Communications
- Respectful Work Environment

Established a New NFS Vision

NFS is one team, respected as a safe and reliable supplier of innovative nuclear products and services – for our nation and the world – today and into the future.

Established a New Safety Culture Definition

Safety Culture at NFS is defined as the core values and behaviors resulting from a collective commitment by each of us to emphasize safety over competing priorities to ensure protection of people and the environment.

Recommitted Core Values

- Integrity
- People
- Formality and discipline
- Respect for health and environment
- Technical excellence
- Accountability
- Cost consciousness

Established Work Place Priorities *(in order of importance)*

- Safety
- Quality
- Schedule
- Cost

Addressed Conduct of Business Attributes

- Personal accountability
- Procedure compliance
- Technical inquisitiveness
- A willingness to stop in the face of uncertainty

Established Employee Expectations

- Expectations of all employees:
    - Practice safety in all endeavors,
    - Treat all others with respect,
    - Support our workplace priorities, a SCWE, and good conduct of business,
    - Display a questioning attitude in a professional and courteous manner,

- Seek to understand management's direction and to follow the direction as it was intended.
- After providing input, do what management directs:
  - Unless the direction is unsafe, illegal, or immoral
  - If you believe the above is the case, elevate your concern to the next level or other avenues (e.g. EC P, ombudsman, regulators, etc.)
  - If you are union employee and you feel the instruction is in violation of the contract, follow the grievance process,
- Do what you say you'll do; take responsibility for your actions,
- Report to work areas at the scheduled time in appropriate work dress; union employees are to adhere to the provisions of the contract in this regard, and
- Communicate; keep your management informed and ask for help from others.

- Management team additional expectations:
  - As much as possible, explain "why" when you give direction,
  - Listen to feedback from employees and understand their concerns,
  - Clearly set expectations for employees,
  - Manage all employees in accordance with company rules; additionally interface with the union employees in accordance with the contract,
  - Document and advise your management and HR of problems and shortcomings,
  - Manage performance: recognize positive behavior and apply discipline within company guidelines,
  - Support the management chain especially first line leadership so that work rules and contract provisions can be consistently applied, and
  - Communicate; keep the workforce informed and call on resources when needed for advice and assistance.

Established a Nuclear Safety Review Board

A Nuclear Safety Review Board (NSRB) was established to address an on-going need for high-level expert oversight. The NSRB reports directly to the BOD and is charged with advising NFS Senior Management and the BOD on opportunities and methods to improve the strength of NFS' safety culture and programs that have a material effect on safe operations (e.g. support and production operations, safety, engineering, maintenance, decommissioning), and advocate for issues requiring attention or action of the BOD. They visit NFS on a regular basis to conduct reviews and work with the NFS management team.

Established an Executive Review Board (ERB)

The ERB is designed to provide a centralized forum for management personnel to be aware of and review employee and contractor issues. The ERB is an oversight and advisory body, rather than an investigative body. The intent of the ERB is to detect organizational challenges and to take prompt, consistent, and appropriate action.

Implemented a Senior Engineering Watch (SEW)

A SEW was established to provide additional coverage on the process floor by NFS personnel with technical knowledge of the operations. The SEW spends 80% or more of his/her time "on the floor" observing and engaging with management, supervisors and employees; readily accessible for communications on tour. This effort may be targeted based on Operations or as directed by the Engineering Director. The SEW's Primary Responsibility is providing technical oversight to operations. The SEW can actively engage in troubleshooting and other technical support of operations when needed; or can call on an appropriate resource to provide specific technical support as needed.

Established an Operating Experience Program

An Operating Experience program was created under the Assurance Director to provide a formal, systematic process for the collection, documentation, distribution, review, and retention of internal and external operating experience.

Increased Accountability

The NFS organizational structure (See figure 3) was changed to provide increased checks and balances by providing direct access to the Board of Directors by the Assurance Director and Quality, Safety, and Safeguards Director. In addition, the Engineering department was moved to report directly to the President, a Program Management group was created, and a Work Management Department, which contains among other entities, the Work Control Group, reporting to the Operations department was established.

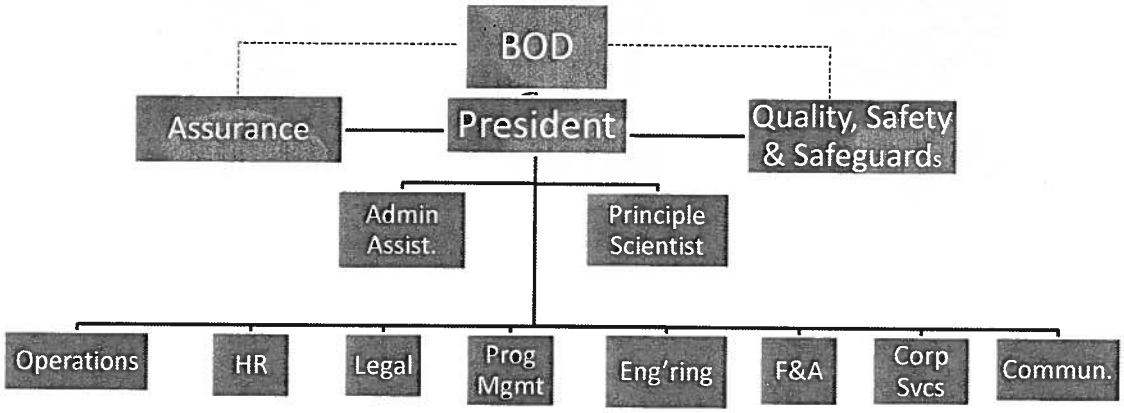

Figure 3

Established a People Team

The purpose of the People Team is to work through issues or concerns brought up by employees in a way that best addresses their issues. The People Team also serves as a support group for the Ombudsman Representatives. All issues and concerns brought to the People Team are kept strictly confidential, consistent with HR and/or Security requirements. People Team members include a representative from the Legal, Human Resources, Communications, Industrial Safety, and Human Performance departments, the four Ombudsmen, and the Employee Concerns Program manager.

Established an Ombudsman Program

The mission of the Ombudsmen is to provide informal and, if requested, confidential conflict resolution assistance to NFS employees and contractors in a manner which is separate from the normal formalized options such as the Employee Assistance Program, the Employee Concerns Program, Human Resources, and other avenues. The Ombudsmen have access to anyone in the organization, including the NFS President to resolve issues. The Ombudsman Program functions outside of the line management structure with no management decision-making power; it is independent in structure, function, and appearance. The Ombudsman holds all communications with those seeking assistance in strict confidence unless, with the individual's permission, additional resources are required.

Established a Management Advisory Council

The purpose of the Management Advisory Council is to advise the senior management team on policy changes, employee issues, employee of the month selection, and other items as determined by the members and/or senior management. Members of the council are selected by the President from the First Line Manager ranks and periodically rotated.

Established a Differing Professional Opinion program

The Differing Professional Opinion program provides an avenue to register an opinion different from a prevailing NFS technical position. It is administered as part of the corrective action program and adjudicated by the Corrective Action Review Board.

Instituted a Work Control Program

New work control program initiatives include:

- Created and staffed of a Work Control Center committed to providing improved work instructions,
- A resource loaded, fully integrated schedule,
- Plan of the Day and Plan of the Week meeting, and
- Single point of accountability for scheduled work

Strengthened Communications

Communications among employees was enhanced by a number of initiatives including:

- The existing NFS intranet was completely overhauled to provide a better communications interface between employees and management
- Executive Management communicated a top-down, face-to-face message to all managers to set clear behavioral standards i.e., do not proceed in the face of uncertainty, require personal accountability, and marshal appropriate resources to address priority problems,
- Conducted a series of "All Employee Meetings" to discuss recent incidents, core values and expectations, and point out progress milestones, and
- Improved the visibility of HuP process area teams by adding their meetings to the schedule,
- Established and communicated clear written behavior and performance expectations for Engineering management and staff,
- Enhanced the all employee News letter, and
- Established Round Tables with the President and a cross-section of employees; Q&A from these sessions are published.

Strengthened the Corrective Action Program

Numerous actions have been taken to strengthen the corrective action program. Examples include:

- Revised Corrective Action Program (CAP) procedures to include a Safety Culture Implications Review (SCIR) as a part of a full team root cause analyses,
- Revised programmatic guidance to provide specific criteria to invoke Corrective Action Review Board (CARB) review of investigations, corrective actions, and effectiveness reviews to help ensure appropriately broad investigations and effective corrective actions,
- Conducted an independent review of NFS investigation processes to ensure the tools in the suite were being properly applied and executed,
- Developed and implemented a standard operating guide and flowchart for evaluation of unusual incidents,
- Established single point accountability of CARB and CCB Chairmen by changing the Board from consensus to advisory, and
- The NFS President was made the CARB and CCB Chairman.

Initiated Documentation and Procedural Improvements

Examples of improvements include:

- Conducted a review of procedures, policies, etc. for instances of institutionalized production priorities over safety (or production pressure),
- Added a requirement to the Training and Qualification (T&Q) form originator to route the form with associated document as part of the formal review and approval process to assure accurate assignment of training,
- Developed a comprehensive Conduct of Operations document based on guidance from INPO and industry best practices which includes rules for proper communication of information with safety implications,
- Included a requirement for the Safety and Safeguards Review Council (SSRC) members to be on guard for the issue of having production priorities over safety during their routine reviews of change documents to prevent that from happening,
- Added restrictions on changes to procedures via Letter of Authorization (LOA) to require approvals by Director of Safety and Security, VP Operations or Principal Scientist.
- Improved the Quality Assurance Oversight of Technical Documents and Programs that included a technical basis review of Configuration Management, Corrective Action, and NRC Response documents,
- Reviewed T&Q to eliminate "orphan" procedures where the procedure is approved and in T&Q but has not been assigned to any individual or job to execute,
- Implemented an Engineering Work Request Record of Review to ensure appropriate engineering disciplines are engaged and work package quality is maintained, and
- Established Independent Design Reviews to ensure technical accuracy and comprehensiveness.

Implemented a Fatigue Management Policy

Activities at NFS require a high level of alertness from employees and contractors, to assure safe and compliant operations and security for everyone at NFS and the community. Excellence in safety, security, and compliance is fundamental to achieving its business objectives, and can only be maintained by employees and contractors that are not suffering from excessive fatigue. The fatigue management policy limits the number of hours an employee can work in certain circumstances.

Implemented a Safety, Engineering, and Senior Management Oversight Program and Schedule

A senior management oversight program was established to increase senior manager presence in the operating areas. The program requires that a senior manager be present in the field about 6 times a week to observe plant operations. The observations are spread over all shifts and include attending turnover shift briefings, approximately two hours of observation of plant operations, interaction with safety personnel and the Senior Engineering Watch (SEW). A report is filed by each senior manager after each observation period. The reports are reviewed weekly by the Operations VP and are trended.

Established a Resource Loaded Schedule

A fully integrated, resource loaded schedule, which feeds into the Plan of the Day (POD)/Plan of the Week (POW) meetings, has been created.

Introduced Metrics System

NFS's has developed a corporate metrics system using a common presentation format based on Institute of Nuclear Power Operations (INPO) formats. The system currently contains over 100 Key Performance Indicators (KPI) with color and trend indicating rollups at multiple levels in a variety of performance areas, culminating with top tier rollups in the area of Safety, Quality, Cost, and Conduct of Business.

Actions Underway But Not Yet Completed

Develop a Strategic Plan

A Strategic Plan that provides a vision for the future is underdevelopment. The plan will be a living document not only able to adjust to the changes in the business environment but also able to provide a sense of continuity. It starts with the principles the organization wants to embody and then uses those attributes to determine how to sustain and grow the business. The basic first principle an organization must do well with the business it has if it is to obtain

new business. To do that it must have a strong safety culture which, in turn, rests on the pedestal of a viable SCWE.

Measure Safety Culture

As part of the two recent ISCA's conducted approximately 2 years apart, employee surveys were used to determine NFS's safety culture relative to other nuclear facilities. Follow on surveys will be conducted at similar intervals to measure longer-term progress in improving safety culture. Because surveys at these interval lengths do not provide necessary short-term information about the effectiveness of newly initiated programs and processes, less lengthy and more focused surveys may be conducted at about six-month intervals.

Re- Establish a Salaried Employee Evaluation System

NFS's previous employee evaluation system fell into disuse about two years ago. Actions are underway to reinstitute a new system based on B&W's program. Essential elements of the system include individual performance goals, and competencies, quarterly feedback, training and learning goals, safety culture performance, and an annual written evaluation. Promotions and pay raises will be based in large measure on performance evaluations.

Construct a New Warehouse and Improve Parts Management

NFS has developed a plan (awaiting final approval) to build a new warehouse outside of the PA that will:

- Provide more facility support space at a lower cost per square foot;
- Improve overall warehousing efficiency and productivity;
- Make well-located space available outside of the PA for Wellness (fitness) Center use at a reduced cost compared to new construction;
- Facilitate continuation of the NR-funded decommissioning plan;
- Eliminate safety concerns with pedestrian traffic, particularly after the new government-funded Entry/Exit Control Point (EECP) is built, and
- Reduce chemical risks associated with chemical container handling.

Develop an Equipment Reliability Program and Institute Reliability Centered Maintenance

The equipment reliability program and reliability centered maintenance includes the following attributes:

- Preventative Maintenance administration,
- Common cause failure analysis (looking for common component failures across multiple pieces of equipment), and
- Risk-based failure analysis (thoroughly analyzing one piece of equipment for likely failure modes to prevent or mitigate risks).

Streamline Administrative Processes

The processes for preparation, revision, review, approval, training, and execution for Letters of Authorization (LOA), Standard Operating Procedures (SOP), and Procedures are being refined to eliminate duplication, improve quality, and to adjust the extent of administrative requirements to match the level of risk to Safety and Quality.

Improve Cleanliness of interior and Exterior Spaces

The entire plant site has been divided among the President's staff into areas of responsibility for the purpose of housekeeping inspection and improvement. Each staff member conducts a weekly inspection and corrections are generated, with the entire plant being covered every quarter. Additionally, a schedule of area organization activities (the Lean "6S" tool) has been developed and is being executed to improve and sustain organization and storage, and reduce clutter. Finally, additional painting resources have been funded and a schedule developed to improve plant preservation.

Expand Supervisory Skill Training

The NFS Training Department has partnered with Development Dimensions International (DDI) and The Ken Blanchard Companies to provide world-class training courses to develop leadership skills. Working with B&W Talent Management, Development Progression Guidelines for NFS employees were established for Emergent Leaders, Frontline Supervisors, Unit Managers and Section Managers. To date, 84% of Frontline Supervisors and 60% of their management have embarked on the development progression.

A lesson plan of NFS Frontline Supervisor specific material has been drafted with the pilot of the training plan anticipated 1Q11. In addition, Frontline Supervisors are receiving training and are implementing a Supervisor Coaching and Positive Reinforcement Observation program. This training provides Supervisors with the knowledge and tools to use to reinforce the desired behaviors of their workers and coaching to correction. Upcoming plans are to address selected topics on a quarterly basis for continuing training of the Frontline Supervisors to maintain and enhance their leadership knowledge and skills.

Developed a Testing Group

The purpose of the Joint Test Group (JTG) Program is to establish a body of stakeholders, selected from key parent organizations, with the function to formally review and approve proposed test plans and test procedures for plant component and system testing. Such stakeholder groups will include Safety, Engineering, and Management. In addition, the JTG will also review and concur with test results and any resulting equipment changes as a result of the tests, or make recommendations for further testing to achieve test objectives.

Introduction of an Integrated Safety Management System

An Integrated Safety Management System described previously is slated for introduction and will be formally introduced in 2011.

Actions Under Consideration

Reconsider Training Department Reporting Structure (Will be done by 1-31-11)
The Training Department presently reports to the Vice-President of Operations. Consideration is being given to an ISCA recommendation that reporting relationship be moved elsewhere.

Establish a Deficiency Tag Program (On hold)
Deficiency Tag programs have had success in the nuclear industry. NFS is evaluating their potential use.

Establish a Voluntary Personal Protection (VPP) STAR Program (On hold)

NFS has developed a plan to accomplish the submission of a VPP application, which includes program improvements in light of VPP application requirements, benchmarking and assessments to identify gaps, and actions to close the gaps before final application. Initial research and planning efforts will parallel the SCIP during the first two quarters of 2011, and subsequent program improvements should begin (if necessary) early Q3 2011.

Institute an Employee Health Management Program (Funded in 2011)

This initiative is currently being scoped for cost, availability of space, and compatibility with the EECP expansion project.

Improve Personnel Spaces

Many of the sites' office and workspaces are over-crowed, in poor condition, and well below industry norms. Efforts to address these conditions are in planning.

CONCLUSION

This Safety Culture Improvement Plan is a living document that will be updated periodically to incorporate new material and ideas for improvement. Actions taken as part of this Plan will strengthen our Safety Culture and support a robust SCWE which is not only integral to an

environment where individuals can raise concerns without fear of reprisal and with the full confidence that concerns will be addressed on their merits. A robust SCWE is a pillar upon which all other attributes stand.

Including employees in making decisions generates trust and respect which generally results in better decisions. Including employees with a variety of backgrounds, perspectives, knowledge, proximity to events, and cultural norms increases the chance that better decisions will become great ones.

A bullet-proof Safety Culture is 'the' essential requirement for continued operation of NFS. All employees and contractors must recognize and embrace this fundamental fact. Wishing otherwise, hoping someone else can make it happen, or denying the need for improvement are all losing positions. We make fuel for submarines. If a submarine sinks at sea everyone goes down together.

By utilizing the tools, philosophies and strategies outlined in this document, NFS will build the required, long-term safety culture to ensure future success.