



**Nuclear Fuel Services, Inc.**

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21G-07-0103  
GOV-01-55-04  
ACF-07-0243  
September 24, 2007

Dr. William D. Travers, Regional Administrator  
U.S. Nuclear Regulatory Commission  
Region II, Atlanta Federal Center  
61 Forsyth Street, SW  
Suite 23T85  
Atlanta, GA 30303

Reference: 1) Docket No. 70-143; SNM License 124  
2) NRC Confirmatory Order Modifying License, dated February 21, 2007  
3) Letter, B. M. Moore to Dr. W. D. Travers, dated May 22, 2007 (21G-07-0073)  
4) NRC Letter, D. M. Collins to D. B. Ferguson, dated August 29, 2007

**Subject: Modifications to NFS Erwin 2007 Independent Safety Culture Assessment Plan and Schedule**

Dear Sir:

As required by Reference 4 above, Nuclear Fuel Services, Inc. (NFS) hereby submits the two (2) attached responses summarizing supplemental information on personnel qualifications and experience of contractors performing the independent third party safety culture assessment, and the revised NFS Erwin 2007 Independent Safety Culture Assessment - Assessment Plan, developed by the independent third party. This transmittal includes non-classified information.

It should be noted that the revised assessment plan submitted herein includes a key change that will affect the timing of completion. This change, use of an employee survey, was determined to be needed based on comments received from NRC after review of the originally submitted plan. The inclusion of the survey is estimated to require approximately 90 additional days. Therefore, NFS request that condition V, 3. b. of the Order (Reference 2), be amended from the current requirement of 270 days to require that the assessment be completed within 360 days from the date of the Order.

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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-07-0103) in any correspondence concerning this letter.

Sincerely,

**NUCLEAR FUEL SERVICES, INC.**



B. Marie Moore  
Vice President  
Safety and Regulatory

JWN/pdj

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**Attachment 1**

**ADDITIONAL INFORMATION  
ON  
PERSONNEL QUALIFICATIONS**

**2 pages**

**ATTACHMENT 1**  
**Additional Information on Personnel Qualifications**

**Introduction**

The information provided herein supplements the information previously submitted (Attachment 1 to NFS document number 2IG-07-0073) on the qualifications and experience of the SCUBA team members.

**Assessment Team Leader – John C. Guibert**

Mr. John C. Guibert has been designated as the Assessment Team Leader for the conduct of the 2007 ISCA of the NFS-Erwin site.

Mr. Guibert has extensive experience in conducting and leading independent safety culture assessments, having participated in approximately 85 safety culture assessments and having served as Project Manager/Team Leader for more than 50 safety culture assessments. These assessments have been of both operating commercial nuclear power plants and operating gaseous diffusion plants.

Mr. Guibert co-developed SYNERGY Consulting Services Corporation's Comprehensive Cultural Assessment methodology. This methodology includes models of the Nuclear Safety Culture, the General Culture & Work Environment and Leadership, Management and Supervisory Behaviors & Practices.

Mr. Guibert is intimately familiar with the various methods available for use in conducting independent safety culture assessments, including their relative strengths and weaknesses. He has demonstrated the ability to effectively integrate and characterize the information obtained from multiple sources of assessment input to reach overall assessment conclusions and to identify areas of cultural strength and weakness. He has extensive experience in applying the following assessment methods: (1) analysis of numerical ratings obtained through survey instruments, (2) analysis of survey write-in comments, (3) personnel interviews, (4) documentation reviews, and (5) behavioral observations.

Prior to focusing on the conduct of independent safety culture assessments, Mr. Guibert led several comprehensive independent organizational assessments of commercial nuclear power plants. Mr. Guibert also served in a significant leadership and oversight role for the scope definition and for the conduct of a comprehensive, multi-year independent verification of the adequacy of the design and construction of a two-unit commercial nuclear power station.

Mr. Guibert has more than 35 years of nuclear experience. He has obtained significant operational, engineering, regulatory and managerial experience through service with the US Navy, the US Nuclear Regulatory Commission, two Engineering Consulting firms and with SYNERGY Consulting Services Corporation.

He is very familiar with the US Nuclear Regulatory Commission's Reactor Oversight Process and with NRC Inspection Procedure 95003.

**ATTACHMENT 1**  
**Additional Information on Personnel Qualifications**

**Subject Matter Expert/Advisor to the SCUBA on Matters Related to Nuclear Material Security – Mr. Patrick A. Card**

Mr. Card has over 35 years of nuclear experience. He has obtained significant experience in matters related to nuclear material security through service with Naval Nuclear Propulsion Program headquarters, a dual-agency of the National Nuclear Security Administration within the Department of Energy and the Department of the Navy within the Department of Defense. In this regard, he served as the Director of Security for 7 years and as the Deputy Director of Security for 8 years.

**Attachment 2**

**NFS ERWIN  
2007 INDEPENDENT SAFETY CULTURE ASSESSMENT  
ASSESSMENT PLAN  
(REVISION 1)**

**20 pages**

# NFS ERWIN 2007 INDEPENDENT SAFETY CULTURE ASSESSMENT ASSESSMENT PLAN (REVISION 1)

## I. INTRODUCTION AND BACKGROUND

Nuclear Fuel Services, Incorporated (NFS) is the holder of Special Nuclear Materials License Number SNM-124, which was issued by the Nuclear Regulatory Commission (NRC) pursuant to 10CFR Part 70. This license authorizes the operation of the facilities located at the NFS site in Erwin, Tennessee in accordance with specified license conditions.

On February 21, 2007, the NRC issued a Confirmatory Order modifying License Number SNM-124, which, among other things, reflected an agreement between the NRC and NFS that “NFS will conduct, via a third party, an independent safety culture assessment within the parameters described in Section V (of the Order).” The specified parameters for the conduct of this independent assessment were:

1. By May 22, 2007, NFS will:
  - a. Identify contractors for performing the independent third party safety culture assessment.
  - b. Submit to NRC the names and qualifications of the contractors, specifically the experience of the contractors in conducting a safety culture assessment.
  - c. Submit a plan and schedule for the safety culture assessment that was developed by the independent third party.
2. The assessment will include all licensed activities at the NFS-Erwin site, including nuclear material security.
3. The assessment shall include the 13 safety culture components discussed in the NRC Regulatory Issue Summary (RIS) 2006-13, dated July 31, 2006 and the commitments NFS made at the management meeting with the NRC on September 18, 2006.
4. While the NRC will inform its review of NFS’ submittal (see 1 above) using the relevant guidance contained in NRC Inspection Procedure (IP) 95003<sup>1</sup>, NFS will not be bound by any specific provision of the NRC guidance documents.
5. By November 18, 2007, the independent third party will complete its safety culture assessment.
6. Within 90 days following the third party’s issuance of the independent safety culture assessment report to NFS, NFS shall provide the third party contractor’s report documenting its findings and assessment of the safety culture at NFS and a plan and schedule for implementing assessment recommendations and actions to address identified issues<sup>2</sup>.
7. Upon request by NRC, NFS shall also make available the supporting documentation and data compiled by and/or relied upon by the third party contractor in making its assessment.
8. NFS will conduct an additional third-party culture assessment approximately 24 months following the completion of the initial assessment and provide the report to the NRC.

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<sup>1</sup> Specifically, Sections 02.07-02.09, 03.07-03.09 and Enclosures A through F.

<sup>2</sup> An acceptable safety culture implementation plan must include performance-based metrics that will be used to measure the success of the program.

By letter dated May 22, 2007 (document number 2IG-07-0073), NFS previously submitted:

1. Information on the names and qualifications of the contractors who will perform the independent third party safety culture assessment, including the experience of these contractors in conducting safety culture assessment activities. Collectively, this team of contractors is known as the NFS-Erwin Safety Culture Board of Advisors (SCUBA).
2. Revision 0 of the 2007 Independent Safety Culture Assessment (ISCA) plan, which was developed by the SCUBA.

On May 30, 2007, representatives of NFS and the SCUBA met with the NRC staff in Rockville, Maryland to discuss the information submitted on May 22, 2007.

On June 20, 2007, Mr. David Ayres of the NRC staff met with representatives of NFS senior management and with the SCUBA at the NFS-Erwin Site to provide the NRC Staff's comments on Revision 0 of the 2007 ISCA plan. These comments are summarized below:

1. The SCUBA should designate an appropriately qualified individual as the SCUBA Assessment Team Leader.
2. The SCUBA should either use a workforce survey as a source of input for the assessment or significantly increase the planned number of Phase 2 personnel interviews that were originally proposed<sup>3</sup>.

At that meeting, the SCUBA indicated that there would likely be significant schedule implications associated with accepting the second NRC staff comment. The SCUBA subsequently determined that the use of a workforce survey would be the preferable alternative and advised NFS senior management accordingly.

On June 28, 2007, NFS management informed the NRC staff of NFS/SCUBA decisions and conclusions related to the NRC comments on Revision 0 of the 2007 ISCA plan, including:

1. The decision to designate Mr. John Guibert as the SCUBA Assessment Team Leader.
2. The decision to use a comprehensive survey questionnaire as an additional method of information gathering for the safety culture assessment. In this regard, the survey questionnaire will:
  - a. Be used to survey the workforce's opinions and to solicit ideas and suggestions for continuous improvement.
  - b. Be similar to those previously developed and used by SYNERGY Consulting Services Corporation, who has extensive nuclear industry experience in using survey questionnaires to support the conduct of safety culture assessments.
  - c. Be customized to reflect the nature of the activities conducted at the NFS-Erwin Site.
  - d. Be focused on cultural attributes that are associated with each of the 13 safety culture components presented in NRC RIS 2006-13.
  - e. Include at least two opportunities for survey respondents to provide write-in comments.
3. The decision that the targeted population for participation in the survey will be all employees and long-term contractors working at the NFS Site. In this regard, long-term contractors are defined as contractor personnel who have been providing services on-site for six months or longer.

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<sup>3</sup> In Revision 0 of the ISCA, the SCUBA proposed to conduct approximately 260 Phase 2 Personnel Interviews in addition to approximately 75-150 Phase 1 Personnel Interviews.

4. The decision that the workforce survey will replace the Phase 2 personnel interviews, as originally described in Revision 0 of the 2007 ISCA plan previously submitted to the NRC on May 22, 2007, as a method of information gathering for the 2007 ISCA.
5. The decision to conduct certain specific Phase 2 personnel interviews, based on the workforce survey results, as needed to:
  - a. Ensure that the survey results for any identified low responding (i.e., low survey participation) organizations are sufficiently representative for that entire organization.
  - b. Obtain additional insights into the underlying reasons for the low numerical ratings provided by any individual organizations that are identified as significant outliers.

It should be noted that in accordance with the redefinition of Phase 2 personnel interviews as described in this Revision 1 of the 2007 ISCA plan, the SCUBA may conduct additional Phase 2 personnel interviews (beyond those specified above) as needed to support the assessment objectives. The need for such additional Phase 2 personnel interviews will be determined based upon the SCUBA's collective evaluation of the sufficiency of the information obtained from all of the methods used in the assessment process (i.e., Phase 1&2 Personnel Interviews, Behavioral Observations, Documentation Reviews and Survey Results) to develop findings, to reach conclusions and to provide suggestions and/or recommendations for improvement.

6. The conclusion that the 2007 ISCA schedule will be significantly affected by the decision to expand the scope and nature of the originally planned assessment activities, and that the projected schedule for submittal of the 2007 ISCA Final Report to NFS-Erwin is now mid-February 2008.

On August 29, 2007, the NRC issued a letter to NFS on the subject of "Upgrades to the Safety Culture Implementation Plan for Nuclear Fuel Services, Inc". This letter:

1. Documented the NRC Staff's understanding of the above-mentioned NFS/SCUBA plans to modify the 2007 ISCA plan.
2. Requested NFS to confirm the above-mentioned modifications to the 2007 ISCA plan and to resubmit the plan for NRC review within 30 days of the date of the issuance of its letter.
3. Provided, as an enclosure to its letter, a list of additional comments provided by the NRC staff based on its review of Revision 0 of the 2007 ISCA plan and the above-mentioned modifications to the plan. These comments were provided for consideration by NFS/SCUBA and were characterized as not representing requirements.

## **II. PURPOSE OF THIS DOCUMENT**

The purpose of this document is to provide Revision 1 of the 2007 ISCA plan, including the schedule for its implementation.

As noted above, by letter dated May 22, 2007 (document number 2IG-07-0073), NFS previously provided information on the names and qualifications of the contractors who will perform the independent third party safety culture assessment, including the experience of these contractors in conducting safety culture assessment activities.

Attachment 1 to this document provides supplementary information on Mr. John Guibert's qualifications to serve as the SCUBA Assessment Team Leader and Mr. Patrick Card's qualifications to serve as a Subject Matter Expert/Technical Advisor to the SCUBA on matters related to nuclear material security.

## **III. 2007 ISCA OBJECTIVES**

The 2007 ISCA is designed to obtain sufficient information to objectively and accurately characterize the current safety culture at the NFS-Erwin site, to determine areas of relative strength and weakness, to identify, characterize and prioritize any needs for improvement in organizational safety culture and to identify additional opportunities for continued improvement in organizational safety culture.

The 2007 ISCA will also establish an initial baseline of information on the NFS-Erwin organizational safety culture that can be used to support trending activities in the future.

## **IV. 2007 ISCA SCOPE**

### **A. COVERAGE OF ACTIVITIES AT NFS-ERWIN**

The 2007 ISCA assessment scope will include all safety-related activities authorized or required at the NFS-Erwin site by License Number SNM-124, including nuclear material security and the activities at the BLEU Complex managed by AREVA.

### **B. COVERAGE OF SAFETY CULTURE COMPONENTS AND ATTRIBUTES**

The 2007 ISCA will utilize the safety culture component framework set forth in NRC RIS 2006-13 both for the conduct of the assessment and for the reporting of assessment results.

The primary emphasis of the 2007 ISCA will be on organizational safety culture and the influence of organizational safety culture on nuclear safety performance, including the adequacy of the structure and implementation of nuclear safety culture-related policies, programs & processes and associated performance areas. The 2007 ISCA will evaluate NFS-Erwin nuclear safety performance to the extent necessary to identify inter-dependent relationships and effects on organization safety culture.

## C. ADDITIONAL AREAS OF COVERAGE

The 2007 ISCA scope will also include specific coverage of the following additional assessment areas:

1. Assessment of the adequacy of the corrective actions taken (or planned) by NFS-Erwin in response to the issues identified in Sections V.1 and V.2 of the NRC Confirmatory Order for Program Improvements dated February 21, 2007.
2. Assessment of the adequacy of the actions taken (or planned) by NFS-Erwin with respect to the commitments made by NFS at the management meeting with the NRC on September 18, 2006.
3. Assessment of the adequacy of the NFS internal self-assessment of NFS-Erwin's current status with respect to the safety culture components and associated attributes set forth in NRC RIS 2006-13.

## D. ADDITIONAL SCOPE-RELATED CONSIDERATIONS

The scope of the 2007 ISCA will include all functional groups working at the NFS-Erwin Site and will include all levels of management with line responsibility for licensed facility operations, up to and including NFS corporate management personnel.

All NFS and AREVA employees and all long-term contractors (i.e., greater than 6 months service) working at the NFS-Erwin Site are included in the targeted population for the assessment and will be provided the opportunity to participate in the safety culture survey described in Section V.B.4 below.

As described in Section V, the 2007 ISCA will utilize a phased approach to information gathering. Accordingly, information obtained and evaluated during the initial phases of implementation of the 2007 ISCA may influence the scope of information gathering during subsequent phases of implementation. For example:

- If an Area for Improvement is identified and adequately characterized during the initial phases of information gathering, previously-planned information gathering activities related to that area may be truncated or suspended.
- If an area is identified that warrants more information gathering activities than originally planned, the previously-planned information gathering activities related to that area may be increased or augmented.

Accordingly, the 2007 ISCA implementation plan should be considered as a "living plan" that may be modified to the extent that these or similar situations are identified during the course of its implementation.

## V. ASSESSMENT APPROACH AND METHODOLOGY

### A. GENERAL CONSIDERATIONS

In conducting the 2007 ISCA, the SCUBA will be informed by the relevant guidance contained in NRC Inspection Procedure 95003 and its Enclosures<sup>4</sup>, but will not be bound by any specific provision of these NRC guidance documents.

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<sup>4</sup> Specifically, Sections 02.07-02.09, 03.07-03.09 and Enclosures A through F.

The NFS-Erwin Safety Culture Leadership Team has requested the SCUBA to evaluate the safety culture at the NFS-Erwin site using industry best practices as the evaluation standard. The SCUBA will use best practices from the commercial nuclear power plant industry, where applicable.

The SCUBA will inform the NFS-Erwin Safety Culture Leadership Team of potentially significant issues identified through the 2007 ISCA on a real time basis, including key findings and conclusions. To the extent practicable, the SCUBA will also provide recommendations and suggestions to address identified issues on a real time basis. Any such real-time recommendations and suggestions will be documented in an attachment to the 2007 ISCA Final Report.

## B. SOURCES OF INPUT FOR THE 2007 ISCA

There will be four sources of input for the 2007 ISCA.

1. Personnel Interviews
2. Behavioral Observations
3. Documentation Reviews
4. A Workforce Survey

The SCUBA will gather an extensive amount of information through Phase 1 Personnel Interviews, Behavioral Observations and Documentation Reviews. It is anticipated that most of the Phase 1 Personnel Interviews, the Behavioral Observations and the Documentation Reviews will be completed prior to the availability of the workforce survey results. Accordingly, the SCUBA will develop preliminary findings and conclusions based on those sources of assessment input prior to evaluating the survey results.

The survey results will be used to:

- Validate preliminary findings and conclusions
- Identify potential additional findings and/or conclusions
- Identify potential additional areas in need of further assessment
- Provide supporting quantitative numerical information on safety culture components and associated attributes that can be used both for benchmarking purposes and for future trending purposes.

### 1. Personnel Interviews

All personnel interviews will be conducted either by members of the SCUBA or by the independent SCUBA Advisor on matters related to nuclear material security. It is anticipated that most, if not all, personnel interviews will be individual interviews as opposed to group interviews.

The information obtained from personnel interviews will be treated as confidential information with respect to attribution of the source of such information. To provide further protection of the confidentiality of interview information sources, the information obtained from personnel interviews will be reported collectively with other pertinent information obtained from other sources of assessment input.

The SCUBA has developed a document that establishes guidance for the conduct of personnel interviews, including a requirement for the use of interview checklists; i.e., a listing of potential questions or areas to be covered in the interviews. The questions selected for use will be “fit for

purpose” for the type and nature of each interview. These checklists incorporate information derived from the SCUBA’s review of several sources of information on safety culture attributes, including but not limited to NRC RIS 2006-13 and NRC Inspection Procedure 95003 (including Enclosure 95003-B).

Personnel interviews will be conducted in two sequenced phases. A Table providing demographic information on all of the individuals interviewed during Phase 1 and Phase 2 will be developed for subsequent auditing by the NRC. This Table will also indicate the purpose for each interview. The information presented in this Table will be considered as confidential information in order to ensure protection of individual identities.

Information obtained from interviews that provides a basis for reaching conclusions will be included in the applicable sections of the 2007 ISCA Final Report.

Phase 1 Personnel Interviews will consist of “targeted interviews” with personnel most knowledgeable of and/or most directly involved in the design and implementation of:

- NFS-Erwin policies, programs and processes that support each of the 13 safety culture components identified in RIS 2006-13;
- NFS-Erwin corrective actions taken (or planned) in response to the issues identified in Sections V.1 and V.2 of the Confirmatory Order for Program Improvements;
- NFS-Erwin actions taken (or planned) with respect to the commitments made by NFS at the management meeting with the NRC on September 18, 2006; and
- The NFS internal self-assessment of its current status with respect to the safety culture components and associated attributes set forth in NRC RIS 2006-13.

Approximately 200 Phase 1 personnel interviews will be conducted. These interviews will include NFS corporate management personnel.

For the Phase 1 personnel interviews, the SCUBA Lead and Deputy Evaluators assigned primary responsibility for the initial evaluation of each 2007 ISCA scope component<sup>5</sup> will be responsible for the selection of the specific NFS-Erwin personnel to be interviewed in their respective areas of responsibility. Other SCUBA members may suggest personnel to be interviewed as part of the assessment of any 2007 ISCA scope component and may conduct or participate in personnel interviews related to any ISCA scope component.

The Phase 1 personnel interviews will predominantly use unstructured interview methods.

Phase 2 Personnel Interviews will consist of interviews that:

- Are based on the results of the survey of the workforce; or
- The SCUBA determines to be necessary to meet overall 2007 ISCA objectives.

Based on the survey results, the SCUBA may determine that additional personnel interviews are necessary either due to low survey participation rates by individual functional organizations or due to the need to obtain additional information related to any “organizational outliers” identified through the analysis of the survey results.

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<sup>5</sup> These assignments are presented in Section VIII.

- (a) If the survey participation level by an individual functional organization is particularly low (i.e., < 40%), there will be a need to conduct post-survey interviews to determine whether the survey-based numerical ratings provided by the survey participants from that organization are sufficiently representative of that entire organization.

For individual Functional Organizations that have survey participation rates < 40%:

- The minimum number of interviews will be 4 or a % of the organizational headcount sufficient to achieve 40% participation in the assessment, whichever is higher<sup>6</sup>.
- The maximum number of interviews will be 10 or 50% of the organizational headcount, whichever is lower.

The specific individuals to be interviewed will be selected using random sampling methods.

Interviews of personnel from low-responding organizations will be structured in nature and will use a specific set of pre-established core interview questions, which may be augmented with a selection of questions from a specific set of additional pre-established generic interview questions.

- (b) Some NFS-Erwin Individual Functional Organizations may provide survey numerical ratings of key cultural metrics (e.g., the Overall Safety Culture rating) that are particularly low. As a result, such organizations may be identified as significant “outlier organizations”. In that event, the SCUBA may determine that there is a need to conduct post-survey interviews with personnel from those specific organizations to determine the underlying reasons for those lower ratings.

For individual Functional Organizations identified as significant outliers:

- The minimum number of interviews will be 4 or 10% of the organizational headcount, whichever is higher<sup>7</sup>.
- The maximum number of interviews will be 10 or 50% of the organizational headcount, whichever is lower.

The specific individuals to be interviewed will be selected using random sampling methods.

Interviews of personnel from “outlier organizations” will use a combination of structured and unstructured interview methods. Interviews of personnel from such organizations will be “fit for purpose” based on the information obtained through the survey on the potential reasons for the lower ratings provided by personnel from those organizations. The SCUBA will develop interview checklists based upon the analysis of the survey results, including the analysis of the write-in comments, for each identified “outlier organization”.

Independent of the survey results, the SCUBA may elect to conduct additional Phase 2 personnel interviews if such additional interviews are found to be necessary to support overall 2007 ISCA objectives.

- The need for such additional personnel interviews will be determined based upon the SCUBA’s collective evaluation of the sufficiency of the information obtained from all of the methods used in the assessment process (i.e., Phase 1&2 Personnel Interviews,

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<sup>6</sup> Unless otherwise limited by the criteria for the maximum number of interviews.

<sup>7</sup> Unless otherwise limited by the criteria for the maximum number of interviews.

Behavioral Observations, Documentation Reviews and Survey Results) to develop findings, to reach conclusions and to provide suggestions and/or recommendations for improvement.

- If such needs are identified, the SCUBA will determine the appropriate interview sample and the appropriate interview methods to be used based on the situation-specific nature of the identified need.

## 2. Behavioral Observations

All behavioral observation will be conducted either by members of the SCUBA or by the independent SCUBA Advisor on matters related to nuclear material security.

The SCUBA has developed guidance documents for the conduct of behavioral observations: one for each of the 3 Types of Behavioral Observations that will be conducted as part of the 2007 ISCA.

- Observations of Meetings
- Observations of Field Work Activities
- Observations of Training Activities

These guidance documents provide behavioral observation checklists that are “fit for purpose” for the type and nature of each type of activity to be observed. These checklists incorporate information derived from the SCUBA’s review of several sources of information on conducting behavioral observations, including but not limited to NRC Inspection Procedure 95003 (including Enclosure 95003-D).

Information obtained from behavioral observations that provides a basis for reaching conclusions will be documented in the applicable sections of the 2007 ISCA Final Report.

Type 1 Behavioral Observations will be focused on management meetings and associated activities. Such meetings will include, but are not limited to, the following:

- NFS Board of Directors meetings
- NFS President & CEO Staff meetings
- NFS Executive Vice-President of Operations/General Manager Staff meetings
- NFS Engineering Director Staff meetings
- NFS Safety Culture Leadership Team meetings
- Daily Facility Operations meetings
- Operational Readiness Review (ORR) Board meetings
- Safety and Safeguards Review Council (SSRC) meetings
- Corrective Action Program (PIRCS) Oversight Committee meetings
- Corrective Action Program (PIRCS) Screening Committee meetings
- Work Planning & Scheduling meetings
- Project Engineering “Portfolio Management” meetings

The primary purpose of the Type 1 Behavioral Observations is to observe management actions and behaviors in the conduct of daily business both in terms of how they reflect proper standards of safety culture performance and how they influence peoples’ values, attitudes, perceptions, behaviors and practices. There will be multiple observations of each meeting. At least two SCUBA members will independently observe each type of meeting. Approximately 50 Type 1 Behavioral Observations will be conducted.

Type 2 Behavioral Observations will be focused on the conduct of day-to-day work activities. Examples of such work activities include, but are not limited to, the following:

- Performance of facility operations work
- Performance of facility maintenance work
- Operations shift turnovers
- Performance of security-related work
- Performance of waste processing activities
- Performance of waste management and transportation activities
- Performance of product packaging and transportation activities

The purpose of observing work in the field is to acquire first-hand information about the performance of workers, supervisors, and managers at NFS-Erwin. The behaviors displayed and the results achieved reflect on attitudes toward safety and compliance practices and will be viewed from that perspective. These behavioral observations will include, as applicable, activities and attributes such as effective communications, configuration control, pre-job briefings, procedural adherence and other human performance elements.

Field observations will be conducted across the spectrum of activities at NFS-Erwin. There will be observations conducted in each department (e.g., operations, maintenance, construction, waste processing, security), on each shift and over weekends, and at each facility (e.g., Navy Fuel, BPF/RFS, BLEU, Wastewater, Decommissioning) in order to accurately compare and contrast the culture. Typically, field observations will be a one-man task. However, two SCUBA members may monitor complex evolutions. On other occasions, two members may observe the same evolution at separate times. The intent is to collect enough information across a representative number of activities to draw conclusions and to test them for accuracy.

There will be multiple observations of each type of work activity identified above. At least two SCUBA members and/or the SCUBA Advisor on matters related to nuclear material security will independently observe each type of work activity.

Approximately 75 Type 2 Behavioral Observations will be conducted.

Type 3 Behavioral Observations will be focused on the conduct of training activities. Examples of such activities include, but are not limited to, the following:

- Employee re-indoctrination Training
- General employee training
- Radiation worker training
- Craft technical training
- Reactive training
- Security training

Training observations will be conducted during classroom activities where formal training practices can be observed and during field activities where lessons learned and operating experience are applied to work activities at NFS-Erwin. The behaviors displayed and the results achieved will reflect on attitudes toward safety and compliance practices and will be viewed from that perspective.

There will be multiple observations of each type of training activity identified above. At least two SCUBA members and/or the SCUBA Advisor on matters related to nuclear material security will independently observe each of the above-mentioned training activities.

Approximately 20 Type 3 Behavioral Observations will be conducted.

### 3. Documentation Reviews

All documentation interviews will be conducted either by members of the SCUBA or by the independent SCUBA Advisor on matters related to nuclear material security.

The SCUBA has developed guidance documents for the conduct of documentation reviews: one for each of the 5 Types of Documentation Reviews that will be conducted as part of the 2007 ISCA.

- Review of documents related to NFS-Erwin policies, programs, processes and procedures
- Review of documents that provide evidence of policy/program/process implementation
- Review of documents related to NFS-Erwin actions and/or plans that address specific provisions of the Confirmatory Order for Program Improvements dated February 21, 2007.
- Review of documents related to the NFS-Erwin internal self-assessment of its status with respect to the safety culture components and associated attributes set forth in NRC RIS 2006-13.
- Review of documents related to other areas of interest to the SCUBA.

These guidance documents establish record-keeping requirements associated with the various types of documentation reviews.

Information obtained from documentation reviews that provides a basis for reaching conclusions will be documented in the applicable sections of the 2007 ISCA Final Report.

Classified information will not be included in the 2007 ISCA Final Report. Potentially classified information will be cleared through the SCUBA's Derivative Classification Authority.

A Table listing the documents that were reviewed by the SCUBA will be developed for subsequent auditing by the NRC. This Table will also indicate the purpose for each document review and, if applicable, the related safety culture component.

Type 1 Documentation Reviews are focused on NFS-Erwin policies, programs and major crosscutting processes and procedures related to nuclear safety, including nuclear material security. Type 1 documentation reviews will be conducted (1) to familiarize the SCUBA with the first principles established for the conduct of activities at the NFS-Erwin Site, and (2) to determine if any significant policy/program inadequacies or coverage gaps exist.

Individual SCUBA members will review policy documents applicable to their assigned areas of responsibility. This review will be expanded to include documentation of implementing programs, processes and procedures as needed.

Type 2 Documentation Reviews are focused on documentation that demonstrates that activities are being implemented in a manner that is consistent with the guidance found in approved NFS-Erwin policies, programs and major crosscutting processes and procedures related to nuclear safety, including nuclear material security (i.e., Type 1 documentation).

The extent and scope of the Type 2 documentation reviews will be fully determined after the conduct of the Phase 1 interviews and the Type 1 documentation reviews. Individual SCUBA members will focus on their particular areas of responsibility, but will also review documentation associated with crosscutting component areas, such as the implementation of the Corrective Action Program.

Documentation associated with the use of safety-related performance indicators and metrics at NFS-Erwin will also be evaluated as part of the Type 2 documentation reviews.

Type 3 Documentation Reviews are focused on documented evidence of actions taken or planned by NFS in response to several specific provisions of the Confirmatory Order for Program Improvements dated February 21, 2007. These specific provisions are:

1. Section V.1 of the Order: Corrective actions for the apparent violations identified in Section II of the Order.
2. Section V.2 of the Order: Corrective actions to improve the Configuration Management program.
3. Section V.3.a of the Order: Commitments made by NFS at the management meeting with the NRC on September 18, 2006.

Type 3 documentation reviews will be conducted for the purpose of determining the adequacy and effectiveness of the actions taken by NFS to address the specific issues identified above. In the event that actions have been planned but not yet implemented, the review will focus on the adequacy of the action plan and the timeliness of its associated schedule.

Type 4 Documentation Reviews are focused on assessing the adequacy of the NFS-Erwin internal self-assessment of its status with respect to the safety culture components and associated attributes set forth in NRC RIS 2006-13.

SCUBA members will review the documentation associated with the recent NFS self-assessment of each safety culture component and will provide their comments/questions/suggestions to (1) the SCUBA members assigned as the lead evaluators for each safety culture component, and (2) the SCUBA members assigned to perform the SCUBA's collective evaluation of the adequacy of the NFS Self-Assessment.

The assigned safety culture component leads will use these inputs to further guide their assessment activities.

Type 5 Documentation Reviews include documentation related to "other areas of interest" to the SCUBA, such as:

1. Documentation of prior external assessments of various elements of NFS-Erwin safety culture or safety performance. Such assessments will include, but will not be limited to, NRC inspection activity reports.
2. Documentation associated with the design and implementation of previous NFS-Erwin safety-related performance improvement initiatives.

The primary purpose of the Type 5 documentation reviews is to obtain a historical perspective on organizational effectiveness in responding to previously-identified areas of weakness.

Type 5 documentation reviews will be conducted primarily by the SCUBA members assigned responsibility for the “Self-Assessment and Independent Assessment” safety culture component. Since this is a historical review, the timeframe of interest has been specified as 2005-2007.

#### 4. Workforce Survey

NFS has obtained the services of SYNERGY Consulting Services Corporation (SYNERGY) to conduct a survey of the NFS-Erwin workforce to obtain information to support the 2007 ISCA. SYNERGY has extensive experience in conducting safety culture assessments for the commercial nuclear industry. In this regard, SYNERGY has conducted more than 100 survey based safety culture assessments; including assessments of 45 nuclear power plant Sites, 61 nuclear power plants and 2 gaseous diffusion plants.

The survey results will serve as an additional source of information that will be used by the SCUBA to:

- Validate and/or clarify preliminary SCUBA findings and conclusions based on the SCUBA’s collective evaluation of information obtained through the Phase 1 Personnel Interviews, the Behavioral Observations and the Documentation Reviews
- Identify potential additional areas for further assessment
- Identify potential additional findings and/or conclusions
- Identify individual NFS-Erwin Functional Organizations that may be significant outliers
- Provide supporting quantitative numerical information on safety culture components and associated attributes that can be used both for benchmarking purposes and for future trending purposes

A comprehensive survey questionnaire will be used to confidentially survey the workforce’s opinions related to the safety culture at NFS-Erwin and to solicit suggestions for continuous improvement of the safety culture and safety-related performance. The survey questions will be designed to address cultural attributes associated with each of the RIS 2006-13 safety culture components as they apply to licensed activities at the NFS-Erwin Site<sup>8</sup>.

The survey will also include several opportunities for respondents to provide write-in comments. Write-in comments serve to obtain information that:

- Validates the numerical survey results
- Provides insights into the underlying reasons for the numerical survey ratings
- Identifies potential issues that were not specifically addressed by the survey questions
- Provides insights into the underlying reasons for the lower numerical survey ratings provided by “outlier organizations”

The targeted population for participation in the survey will be all employees (including AREVA employees) and long-term contractors working at the NFS-Erwin Site. Long-term contractors are defined as contractor personnel that have been providing services for six (6) months or longer.

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<sup>8</sup> It should be noted that a few of the attributes identified in NRC RIS 2006-13 are not amenable to being addressed through an “all hands” survey due to the fact that only a relatively small set of the targeted population may be sufficiently informed to provide a meaningful response to survey questions designed to evaluate such attributes. In these cases, the SCUBA will evaluate the attributes through other means (e.g., personnel interviews, behavioral observations and documentation reviews).

Participation in the survey will be voluntary, but will be highly encouraged by NFS-Erwin Site management. The survey will be administered by workforce personnel trained by SYNERGY to serve as survey administrators. NFS-Erwin Site management will provide opportunities for personnel to take the survey in small group sessions scheduled during normal working hours.

In light of the fact that NFS-Erwin is a fuel cycle facility and that some of SYNERGY's standard cultural survey questions (used at commercial nuclear power plants) have been customized to reflect the nature of the activities conducted at the NFS-Erwin Site, SYNERGY has sub-contracted with Westat, a recognized leader in statistical survey research, to perform psychometric analyses of the survey questions used in the NFS-Erwin workforce survey. The Westat analyses will include an assessment of:

- The internal consistency reliability of the survey questions within the survey model.
- The factor structure of the survey questions within the survey model.
- Differences between the NFS-Erwin Functional Organizations using a banding approach.

SYNERGY will provide numerical rating information in formats that will support the SCUBA in its assessment of each of the 13 safety culture components.

SYNERGY will:

- Characterize each individual survey write-in comment and allocate it to one of the 13 safety culture components or to other applicable categories.
- Identify any significant recurring themes that are identified through the write in comments and allocate those themes to one or more of 13 safety culture components or to other applicable categories.

SYNERGY will redact any individual write-in comment that either "self-identifies" the commenter or that represents an "allegation of improper behavior by a specifically-named individual". SYNERGY will confidentially discuss any such allegations with the NFS-Erwin Vice President of Safety and Regulatory who will be responsible for further investigation of any such allegations.

Only SYNERGY and the SCUBA members will have access to the non-redacted survey write-in comments<sup>9</sup>. The redacted write-in comments will be made available to NFS-Erwin senior managers on a confidential, need to know basis.

## C. ASSESSMENT AND PROCESSING OF 2007 ISCA RESULTS

The process described in this Section is presented in the context of the 13 safety culture components. The same process will be utilized for the assessment and processing of results for each of the additional 2007 ISCA scope areas identified in Section IV.C.

### 1. Significant Preliminary Findings/Significant Preliminary Conclusions

Significant preliminary findings and/or significant preliminary conclusions are defined as involving issues that will likely be characterized as "Areas for Improvement" (refer to Section V.D for issue categorization categories). Such significant preliminary findings and/or significant preliminary

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<sup>9</sup> It should be noted that Mr. Pat Card, who is serving as the independent SCUBA Advisor on matters related to nuclear material security and who is an authorized derivative classifier, will screen the write-in comments to ensure that they do not contain classified information.

conclusions will be reported by the assigned SCUBA Lead Evaluator for individual safety culture components to all SCUBA members on a real-time basis. After such findings have been reviewed by the SCUBA, they will also be provided to the NFS-Erwin Safety Culture Leadership Team as preliminary information warranting NFS-Erwin management attention.

## 2. Significant Information and/or Preliminary Findings Related to Safety Culture Components

Significant information and/or preliminary findings related to individual safety culture components will be reported to all SCUBA members on a real-time basis. Similarly, significant information and/or preliminary findings that may cut across several safety culture components will also be reported to all SCUBA members on a real-time basis. Significant information and any associated significant preliminary findings will be collectively reviewed and discussed in SCUBA meetings.

## 3. Preliminary Assessment of Results for Safety Culture Components (Phase 1)

A Phase 1 preliminary assessment of 2007 ISCA results for each of the 13 safety culture components (based on the integration of information obtained from the Phase 1 Personnel Interviews, the Behavioral Observations and the Documentation Reviews) will be conducted by the SCUBA members assigned as Lead and Deputy Evaluators for each such safety culture component.

After this preliminary assessment has been completed (including the identification of preliminary findings and preliminary conclusions), the results of the Phase 1 preliminary assessment will be reported to all SCUBA members and then collectively reviewed and discussed during SCUBA meetings scheduled for that specific purpose. Potential findings and conclusions that cut across several safety culture components will also be collectively reviewed and discussed during these meetings.

## 4. Assessment of Results for Safety Culture Components (Phase 2)

A Phase 2 assessment of 2007 ISCA results for each of the 13 safety culture components (based on the integration of information obtained from the Phase 1 & 2 Personnel Interviews, the Behavioral Observations, the Documentation Reviews and the Workforce Survey results) will be conducted by the SCUBA members assigned as Lead and Deputy Evaluators for each such safety culture component.

After this assessment has been completed (including the identification of preliminary findings and preliminary conclusions), the results of the Phase 2 assessment will be reported to all SCUBA members and then collectively reviewed and discussed during SCUBA meetings scheduled for that specific purpose. Potential findings and conclusions that cut across several safety culture components will also be collectively reviewed and discussed during these meetings.

After the completion of the Phase 2 assessment activities, the key findings and conclusions endorsed by the SCUBA will be documented in the appropriate sections of a working version of the draft 2007 ISCA Report.

## 5. Integrated Assessment of Results (Phase 3)

After the completion of the Phase 2 assessment activities, the SCUBA will meet to perform a final integrated assessment of the assessment results, findings and conclusions. The SCUBA will collectively (1) characterize identified areas of strength and weakness in accordance with the criteria set forth in Section V.D and (2) develop recommendations on the relative priority and/or sequence

in which any identified Areas for Improvement or Areas in Need of Attention should be addressed by the NFS-Erwin Safety Culture Leadership Team.

The culmination of the Phase 3 integrated assessment of results will be the finalization of the draft 2007 ISCA Report.

The SCUBA will inform the NFS-Erwin Safety Culture Leadership Team of significant findings and conclusions as they are developed.

#### D. CHARACTERIZATION OF 2007 ISCA RESULTS

Areas of strength and weakness in the NFS-Erwin safety culture will be identified through the assessment and processing of results as described in Section V.C. In this regard, the SCUBA will use the following characterizations:

1. Area of Strength: A component or attribute of the NFS-Erwin safety culture that is considered to conform with (or to surpass) industry best practices.
2. Area for Improvement: A component or attribute of the NFS-Erwin safety culture that is considered to be deficient when compared to industry standards. Such components or attributes require corrective action.
3. Area in Need of Attention: A component or attribute of the NFS-Erwin safety culture that is considered to be marginally effective when compared to industry standards. Such components or attributes are significant candidates for continuous improvement.
4. Other Opportunities for Improvement: A component or attribute of the NFS-Erwin safety culture that is considered to be acceptable when compared to industry best standards, but that is a noteworthy candidate for continuous improvement.

## **VI. REPORTING OF 2007 ISCA RESULTS**

The SCUBA will develop a 2007 ISCA Final Report that documents the results of its assessment of the safety culture at the NFS-Erwin Site. This Report will include the following Sections:

- An Executive Summary that provides overall conclusions and a summary of key findings, including the identification of safety culture components and attributes that are considered to represent Areas of Strength, Areas for Improvement, Areas in Need of Attention and Other Opportunities for Improvement.
- An Introductory Section that summarizes the 2007 ISCA objectives, scope and assessment methodology.
- Individual Sections that present supporting information for the conclusions reached for each of the 13 safety culture components and for each of the additional 2007 ISCA Scope areas identified in Section IV.C.
- Attachments that provide information on the sources of input used by the SCUBA during the conduct of the 2007 ISCA. For example, the Tables discussed in Section V of this plan.
- An attachment that documents recommendations and suggestions, including references where applicable, for consideration by the NFS-Erwin Safety Culture Leadership Team in the development of plans to address identified Areas for Improvement, Areas in Need of Attention and Other Opportunities for Improvement.

The draft 2007 ISCA Report will be provided to NFS-Erwin management at least one week before a scheduled presentation of the 2007 ISCA results to NFS-Erwin management by the SCUBA.

The 2007 ISCA Final Report will be provided to NFS-Erwin management approximately one week after the presentation of the 2007 ISCA results.

In developing the 2007 ISCA Final Report, the SCUBA will address requests for clarification (if any) provided by NFS-Erwin management based on their review of the draft 2007 ISCA Report and/or any additional information provided during the SCUBA's presentation of the 2007 ISCA results.

## **VII. SCHEDULE FOR IMPLEMENTATION OF THE 2007 ISCA**

- 5/22/2007 Submittal of Revision 0 of the 2007 ISCA Plan to the NRC
- 5/30/2007 Meeting with NRC Staff at NRC Headquarters to discuss the 2007 ISCA Plan
- 6/4/2007 The SCUBA's 2007 ISCA activities commence (i.e., Phase 1 Personnel Interviews, Behavioral Observations and Documentation Reviews)
- 6/20/2007 NFS/SCUBA receive initial NRC Staff comments on Revision 0 of the 2007 ISCA Plan in a meeting with Mr. David Ayres of NRC Region II
- 6/28/2007 Responses to initial NRC Staff comments on Revision 0 of the 2007 ISCA Plan provided by SCUBA/NFS to NRC Region II management.
- 8/19-31/2007 Administration of the 2007 NFS-Erwin Workforce Survey
- 8/29/2007 NRC Region II letter to NFS seeking formal confirmation of the planned changes to the 2007 ISCA Plan and providing additional NRC Staff comments for consideration.
- 9/24/2007 Submittal of Revision 1 of the 2007 ISCA Plan to the NRC
- 10/26/2007 SCUBA Phase 1 Preliminary Assessment of Results for Safety Culture Components Completed
- 10/26/2007 2007 NFS-Erwin Workforce Survey results provided to the SCUBA
- 11/20/2007 Phase 2 Personnel Interviews completed
- 12/21/2007 SCUBA Phase 2 Assessment of Results for Safety Culture Components Completed
- 1/25/2008 SCUBA Phase 3 Integrated Assessment of Results Completed
- 2/4/2008 Draft 2007 ISCA Report Submitted to NFS-Erwin Management
- Week of 2/11/2008  
SCUBA Presentation of 2007 ISCA Results to NFS-Erwin Management
- Week of 2/18/2008  
2007 ISCA Final Report Submitted to NFS-Erwin Management

## VIII. INDIVIDUAL SCUBA ASSIGNMENTS

Mr. John Guibert is the SCUBA Assessment Team Leader for the 2007 ISCA.

The other members of the SCUBA are:

- Mr. Carey Foy
- Mr. Jim McConnell
- Mr. Sam McDonald
- Dr. Carl Paperiello
- Mr. Jim von Suskil

Mr. Patrick Card is the independent Subject Matter Expert/Advisor to the SCUBA on matters related to nuclear material security.

Individual SCUBA members have been assigned as Lead Evaluator or as Deputy Evaluator for each of the 13 safety culture components set forth in NRC RIS 2006-13. These assignments are identified in Table 1 below.

**TABLE 1**  
**SCUBA ASSIGNMENTS**

<b>RIS 2006-13 SAFETY CULTURE COMPONENT</b>	<b>LEAD EVALUATOR</b>	<b>DEPUTY EVALUATOR</b>
Decision Making	Jim von Suskil	Carey Foy
Resources	John Guibert	Sam McDonald
Work Control	Sam McDonald	Jim McConnell
Work Practices	Jim McConnell	Jim von Suskil
Corrective Action Program	Jim von Suskil	Sam McDonald
Operating Experience	Carl Paperiello	John Guibert
Self and Independent Assessments	Carl Paperiello	Jim von Suskil
Environment for Raising Concerns	Carey Foy	Carl Paperiello
Prevent, Detect, Mitigate Perceived Retaliation	Carey Foy	Carl Paperiello
Accountability	Sam McDonald	Jim McConnell
Continuous Learning Environment	Jim von Suskil	John Guibert
Organizational Change Management	Jim McConnell	Carey Foy
Safety Policies	John Guibert	Sam McDonald

Individual SCUBA members have been assigned as Lead Evaluator or as Deputy Evaluator for each of the additional 2007 ISCA Scope areas identified in Section IV.C. These assignments are identified in Table 2 below.

**TABLE 2  
SCUBA ASSIGNMENTS**

<b>ASSESSMENT AREA</b>	<b>LEAD EVALUATOR</b>	<b>DEPUTY EVALUATOR</b>
Assessment of the adequacy of the corrective actions taken (or planned) by NFS-Erwin in response to the issues identified in Sections V.1 and V.2 of the NRC Confirmatory Order for Program Improvements dated February 21, 2007.	Carey Foy	Carl Paperiello
Assessment of the adequacy of the corrective actions taken (or planned) by NFS-Erwin in response to the issues identified in Section V.2 of the NRC Confirmatory Order for Program Improvements dated February 21, 2007.	Jim von Suskil	Jim McConnell
Assessment of the adequacy of the actions taken (or planned) by NFS-Erwin with respect to the commitments made by NFS at the management meeting with the NRC on September 18, 2006.	Carey Foy	Sam McDonald
Assessment of the adequacy of NFS-Erwin's internal self-assessment of its current status with respect to the NRC RIS 2006-13 Safety Culture Components and associated attributes.	Carl Paperiello	Jim von Suskil
Nuclear Material Security	Carl Paperiello	Patrick Card