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Docket Number 50-346
License Number NPF-3
Serial Number 1-1449

January 27, 2006

Mr. James L. Caldwell, Administrator
United States Nuclear Regulatory Commission
Region III
2443 Warrenville Road, Suite 210
Lisle, IL 60532-4352

Subject: Submittal of the Organizational Safety Culture and Safety Conscious Work Environment Independent Assessment Report and Action Plans for the Davis-Besse Nuclear Power Station

Dear Mr. Caldwell:

The purpose of this letter is to submit the assessment report and action plans resulting from the 2005 Organizational Safety Culture and Safety Conscious Work Environment (SC/SCWE) independent assessment of the Davis-Besse Nuclear Power Station (DBNPS). The Nuclear Regulatory Commission (NRC) letter dated March 8, 2004, "Approval to Restart the Davis-Besse Nuclear Power Station, Closure of Confirmatory Action Letter, and Issuance of Confirmatory Order" requires submittal of the assessment results and action plans necessary to address issues raised by the assessment within forty-five (45) days of the completion of the assessment.

In accordance with the Confirmatory Order, the FirstEnergy Nuclear Operating Company (FENOC) is submitting the 2005 Organizational SC/SCWE Assessment Report and the action plans. The SC/SCWE Independent Assessment data gathering and interviews were conducted from November 1 to November 18, 2005. The information was analyzed and the results presented to the DBNPS management on December 14, 2005, marking the end of the assessment. The Assessment was performed in accordance with the Assessment Plan submitted via letter Serial Number 1-1444, dated November 4, 2005. The enclosed report contains the results of the Independent Assessment as well as action plans to address the Areas For Improvement (AFI) identified by the assessment.

If you have any questions or require additional information, please contact Mr. Clark A. Price, Manager - Regulatory Compliance at (419) 321-8585.

Sincerely yours,

By S. Allen
for Mark B. Bezilla

LJS

Attachment 1 - Commitment List

Enclosure 1 - 2005 Independent Assessment of the Davis-Besse Organizational Safety Culture (Including Safety Conscious Work Environment)

Enclosure 2 – Action Plans to Address Areas for Improvement 2005 Independent Assessment of the Organizational Safety Culture (Including Safety Conscious Work Environment) at the Davis-Besse Nuclear Power Station

cc: USNRC Document Control Desk
DB-1 NRC/NRR Project Manager
DB-1 Senior Resident Inspector
Utility Radiological Safety Board

COMMITMENT LIST

The following list identifies those actions committed to by the Davis-Besse Nuclear Power Station (DBNPS) in this document. Any other actions discussed in the submittal represent intended or planned actions by the DBNPS. They are described only for information and are not regulatory commitments. Please notify the Manager - Regulatory Compliance at (419) 321-8585 at the DBNPS with any questions regarding this document or associated regulatory commitments.

COMMITMENTS	DUE DATE
1. Consistent with the action taken on the 2004 COIA and Davis-Besse's commitment for consistent and open communications with all levels of the organization, Davis-Besse will provide the opportunity for employees to hear a direct presentation of the results of the 2005 COIA on Organizational Safety Culture and SCWE. This presentation will be made by the Independent Assessment Team Lead, providing the opportunity for direct employee interaction with the Team Lead for questions and answers.	February 15, 2006
2. Following the 14th refueling outage which begins in March 2006, Davis-Besse will begin a transition out of the recovery phase and the initiatives and actions of the Cycle 14 Operational Improvement Plan into a corporate objective to transform Davis-Besse into a top industry performer. The FENOC Business Plan and the FENOC vision of "People with a strong safety focus delivering top fleet operating performance" will be the foundation for future improvements at Davis-Besse. This vision relies upon a strong and sustained Safety Culture and a robust SCWE, and is based on adherence to corporate policy level safety commitments, and individual and management commitments to safety when performing each and every task. To set the course, Davis-Besse will include actions in the 2006 Davis-Besse site excellence plan, developed under the FENOC Business Plan, to further enhance and drive long-term safety performance improvement.	June 30, 2006

COMMITMENTS	DUE DATE
3. During the extended 13th refueling outage and the post-outage recovery period of Cycle 14, Davis-Besse senior leadership maintained a steady focus on day-to-day operations. Following Cycle 14 and completion of the 14th refueling outage, the Davis-Besse senior leadership team will begin a transition that will dedicate more of their time to the development and execution of longer-term initiatives focused and designed to achieve the transition of Davis-Besse from recovery to sustained operational excellence. This transition is intended to drive authority, accountability, and ownership to the appropriate levels within the Davis-Besse organization. Actions will be included in the 2006 Davis-Besse site excellence plan, which will be consistent with and implement the FENOC leadership style embraced in the FENOC Business Plan.	December 31, 2006
4. Reinforce with section Operating Experience coordinators their role and responsibility to champion the use of Operating Experience internally within their sections.	May 31, 2006
5. Enhance discussion of Operating Experience in the morning Management Alignment and Ownership Meetings by periodically addressing relevant Operating Experience.	April 30, 2006
6. Reiterate the standards and expectations for rigor and criticality in the performance of self-assessments and section Integrated Performance Assessments, including the identification of any areas for improvement or negative trends and the initiation of Condition Reports to address such items.	April 30, 2006
7. FENOC and Davis-Besse will assess the Safety Culture and SCWE monitoring and assessment tools contained in the quarterly monitoring and annual assessment Business Practices to identify opportunities to enhance their effectiveness. This initiative will include utilization of the industry principles document defining essential attributes of a healthy nuclear safety culture. Results will be incorporated into the FENOC Safety Culture Monitoring and Assessment Business Practices.	September 30, 2006

Docket Number 50-346
License Number NPF-3
Serial Number 1-1449
Enclosure 1

2005 INDEPENDENT ASSESSMENT OF THE DAVIS-BESSE ORGANIZATIONAL SAFETY CULTURE (INCLUDING SAFETY CONSCIOUS WORK ENVIRONMENT)

(40 pages follow)

Independent Assessment of the Davis-Besse Organizational Safety Culture (Including Safety Conscious Work Environment)

Assessment Number:

COIA-SC-2005

December 23, 2005

Team Members:

Dr. Sonja B. Haber, Human Performance Analysis, Corp., Team Lead
Dr. Deborah A. Shurberg, Independent Consultant (Human Performance Analysis)
Michael E. Stein, Independent Consultant (Sonalysts, Inc.)
Aldo Capristo, Business Services Manager, Point Beach Nuclear Station, NMC

Submitted by:

Sonja B. Haber
Independent Assessment Team Lead

Reviewed and Accepted By:

1/4/06
DBNPS Vice President - Nuclear

1/5/06
FENOC Vice President - Oversight

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EXECUTIVE SUMMARY

In March of 2002, the FirstEnergy Nuclear Operating Company (FENOC) discovered a significant degradation of the Davis-Besse Nuclear Power Station (the Station) reactor pressure vessel head and entered an extended shutdown. The Station was placed under the U.S. Nuclear Regulatory Commission's (NRC) Inspection Manual Chapter 0350 process for restart. As part of the FENOC Restart Plan, the Station committed to perform an independent evaluation of the safety culture at Davis-Besse. That evaluation was conducted during February 2003. On March 8, 2004 Confirmatory Order Modifying License No. NPF-3 was issued by the U.S. NRC requiring FENOC to conduct independent assessments of four different performance areas at the Station. One of the identified areas is Organizational Safety Culture, including Safety Conscious Work Environment. The first Confirmatory Order Independent Assessment of Organizational Safety Culture, including Safety Conscious Work Environment, was conducted in November 2004 with the final report submitted on December 21, 2004.

This report describes the results of the second independent assessment of the status of the existing Organizational Safety Culture, including the Safety Conscious Work Environment (SCWE), required by the March 8, 2004 Confirmatory Order Modifying License No. NPF-3 at the Davis-Besse Nuclear Power Station. The assessment was conducted during November 2005. The primary objective of the assessment was to provide information regarding the presence or absence of safety culture characteristics at Davis-Besse. Observations regarding the Station's safety culture characteristics and areas in need of attention with respect to those characteristics are presented. In addition, comparisons to the information collected during the assessments conducted in February 2003 and November 2004 are made. The assessment also examined the rigor, criticality, and overall quality of Davis-Besse internal self-assessment activities in this performance area.

Safety culture characteristics that are important for the existence of a positive safety culture within a nuclear facility have been identified to include:

- **Safety is a clearly recognized value in the organization.**
- **Accountability for safety in the organization is clear.**
- **Safety is integrated into all activities in the organization.**
- **A safety leadership process exists in the organization.**
- **Safety culture is learning driven in the organization.**
- **A process for establishing a strong and effective SCWE is in place.**

Measurable performance objectives associated with each of the safety culture characteristics and particular behaviors and attitudes have been identified to evaluate these objectives.

Using a methodology originally developed with the support of the U.S. Nuclear Regulatory Commission, and the same one that was applied at the Station during February 2003 and November 2004, an assessment of selected organizational behaviors and attitudes was conducted to evaluate the Station in terms of these safety culture characteristics and their associated performance objectives. The methodology involves obtaining a variety of quantitative and qualitative information, using multiple data-gathering methods. The information collected is

largely based upon the perceptions of the individuals in the organization. The evaluation is a 'point in time' snapshot of the Davis-Besse Station, but cultural beliefs and assumptions do not change quickly.

Overall, the Team found that the Davis-Besse Organizational Safety Culture and Safety Conscious Work Environment had improved since the last independent assessment conducted in November 2004. While several initiatives designed to facilitate and promote the behaviors important to a positive safety culture and safety conscious work environment were observed in the course of the evaluation, the results of the assessment also indicated that three of the six safety culture characteristics were not yet fully effective at the Station.

The results from this assessment were evaluated against the six characteristics identified to be important for the promotion of a positive safety culture and the following conclusions were identified. Based on the definitions in Davis-Besse Business Practice procedure DBBP-VP-0009, "Management Plan for Confirmatory Order Independent Assessment," Revision 2, dated April 26, 2005, the Team gave an overall rating for the 2005 Independent Assessment of the Davis-Besse Organizational Safety Culture (including Safety Conscious Work Environment) of **Marginally Effective** and improving.

Davis-Besse Business Practice procedure DBBP-VP-0009 defines:

Effective - Assessment results identified one or several Areas for Improvement and no or a few Areas in Need of Attention. **Performance, programs and processes are sufficient to obtain the desired results with consistency and effectiveness.**

Marginally Effective - Assessment results identified more than several Areas for Improvement and several more Areas in Need of Attention. **The basic intent of the program or process is achieved, however, the performance, program or process is challenged to obtain the desired results with consistency and effectiveness. Prompt management action is required.**

1. Safety is a clearly recognized value in the organization. Rated: Effective

Safety is a clearly recognized value in the organization as demonstrated by its presence in documentation, communication, conservative decision-making and the allocation of resources. Challenges still exist primarily in the internalization of the behaviors necessary to ensure consistency in safety performance.

2. Accountability for safety in the organization is clear. Rated: Marginally Effective

Management's actions concerning safety issues are generally driven from the top down limiting accountability and ownership at lower organizational levels. Activities are often perceived to be initiated as reactions to external requirements and standards are primarily imparted and driven from outside the organization.

3. Safety is integrated into all activities in the organization. Rated: Effective

Continued improvements in the quality of documentation and processes, in the coordination of work management, and in the knowledge and understanding of work processes have contributed to the integration of safety into more activities in the organization.

4. A safety leadership process exists in the organization. Rated: Marginally Effective

While improvements in values and attitudes were observed since the 2004 Independent Assessment, they are generally back to the levels obtained in the 2003 Independent Assessment. Multiple differences were identified within and between groups in much of the data collected indicating a non-alignment among the leadership team with respect to their effectiveness in implementing the desired behavioral changes.

5. Safety culture is learning driven in the organization. Rated: Marginally Effective

Efforts to improve performance through organizational learning behaviors are still not effectively implemented nor recognized to be of high value throughout all levels of the organization. The lack of self-criticality and acceptance of externally driven standards and expectations are not indicators of a learning organization.

6. A process for establishing a strong and effective SCWE is in place. Rated: Effective

Overall the responses on the Davis-Besse October 2005 Survey and the survey used in this Independent Assessment have significantly increased in a positive direction from the data obtained in 2004. Efforts by the ECP to communicate its role and provide increased presence in the field have been effective. Issues remain with the ECP around anonymity and concerns about retaliation still exist in some organizational groups.

OVERALL CONCLUSION

The overall rating for the 2005 Independent Assessment of the Davis-Besse Organizational Safety Culture (including Safety Conscious Work Environment) is **Marginally Effective and improving.**

In evaluating the effectiveness of the Annual Safety Culture Assessment of the Davis-Besse Nuclear Power Station, Draft Document, November 2005, the Team rated the results of this process as **Marginally Effective**. The overall rating provided by the Davis-Besse Assessment process was evaluated to be less critical than the results of this Independent Assessment.

SECTION 1: Scope, Methodology and Conclusions

1.1 Introduction

In March of 2002, the FirstEnergy Nuclear Operating Company (FENOC) discovered a significant degradation of the Davis-Besse Nuclear Power Station (the Station) reactor pressure vessel head and entered an extended shutdown. The Station was placed under the U.S. Nuclear Regulatory Commission's (NRC) Inspection Manual Chapter 0350 process for restart. As part of the FENOC Restart Plan, the Station committed to perform an independent evaluation of the safety culture at Davis-Besse. That evaluation was conducted during February 2003. On March 8, 2004 Confirmatory Order Modifying License No. NPF-3 was issued by the U.S. NRC requiring FENOC to conduct independent assessments of four different performance areas at the Station. One of the identified areas is Organizational Safety Culture, including Safety Conscious Work Environment. The first independent assessment of Organizational Safety Culture, including Safety Conscious Work Environment, was conducted in November 2004 with the final report submitted on December 21, 2004.

This report describes the results of the second independent and comprehensive assessment of the status of the existing Organizational Safety Culture, including the Safety Conscious Work Environment (SCWE), under the Confirmatory Order and was performed during November 2005. The assessment was performed in accordance with the requirements of the March 8, 2004, Confirmatory Order Modifying License No. NPF-3 at the Davis-Besse Nuclear Power Station, and Davis-Besse Business Practice DBBP-VP-0009, Management Plan for Confirmatory Order Independent Assessments. The primary objective of the report is to provide information regarding the presence or absence of safety culture characteristics at the Station. Observations regarding the Station's safety culture that should be sustained are presented. Areas in need of attention and management focus to improve the Station's safety culture are also presented. In addition, comparisons to the information collected during the assessments conducted in February 2003 and November 2004 are made. The report also describes the assessment of the rigor, criticality, and overall quality of the Station's internal self-assessment activities in this performance area.

1.2 Background

Evaluating the safety culture of a particular organization poses some challenges. Cultural assumptions, which influence behavior and, therefore, safety performance, are not always clearly observable. Schein (1992) presents a model of culture that helps in understanding how the concept can be assessed. In Schein's model, culture is assumed to be a pattern of shared basic assumptions, which are invented, discovered or developed by an organization as it learns to cope with problems of survival and cohesiveness.

According to Schein's three-level model, an organization's safety culture can be assessed by evaluating the organization's artifacts, claimed values, and basic assumptions. On the first level of the model are the organization's artifacts. Artifacts are the visible signs and behaviors of the

organization, such as its written mission, vision, and policy statements. The second level consists of the organization's claimed or espoused values. Examples of claimed values might include mottos such as, "safety first" or "maintaining an open reporting work environment." The third level is comprised of the basic assumptions of the individuals within the organization. Basic assumptions are the beliefs and attitudes that individuals bring into the organization or that are developed because of experience within the organization. Examples of basic assumptions may include, "safety can always be improved" or "everyone can contribute to safety." The organization's basic assumptions regarding safety culture are less tangible than the artifacts and claimed values. They are often taken for granted within the organization that shares the culture.

Artifacts, claimed values, and basic assumptions can be used to identify the presence or absence of characteristics that have been identified to be important for the existence of a positive safety culture within a nuclear facility (INSAG-15, 2002, IAEA Draft Guidelines for Safety Culture Assessment). Some of these characteristics include:

- **Safety is a clearly recognized value in the organization.**
- **Accountability for safety in the organization is clear.**
- **Safety is integrated into all activities in the organization.**
- **A safety leadership process exists in the organization.**
- **Safety culture is learning driven in the organization.**

Performance objectives are associated with each of the safety culture characteristics. Particular behaviors and attitudes have been identified to evaluate the extent to which the organization has attained these objectives. The relationship between the characteristics identified as important for promoting a positive safety culture, the performance objectives associated with each characteristic, and the organizational behaviors that can be measured to assess the safety culture characteristics is depicted in Figure 1. This framework provides the basis for the evaluation of safety culture that was conducted.

A sixth characteristic was added to the framework to specifically evaluate the absence or presence of a Safety Conscious Work Environment (SCWE):

- **A process for establishing a strong and effective SCWE is in place.**

The performance objectives associated with this characteristic are based directly upon the U.S. NRC Policy Statement issued in the Federal Register, Vol. 61 #94 dated May 14, 1996, and the U.S. NRC March 26, 2003 Staff Requirements Memorandum on Safety Conscious Work Environment:

- Employees at all levels in the organization understand and perceive the SCWE Program to be effective.
- Responsibility for raising concerns is not avoided because of fear of retaliation.
- The SCWE Program is clearly supported by management.
- An effective process is available for employees to raise their concerns.

This methodology was originally developed with the support of the U.S. Nuclear Regulatory Commission (1991) to assess the influence of organization and management on safety performance. The methodology entails collecting a variety of information that is largely based upon the perceptions of the individuals in an organization, as well as conducting structured observations of individuals performing work activities. Perceptions are often reality when it comes to influencing behavior and understanding basic assumptions. Therefore, the data collected regarding individuals' perceptions are critical to this type of evaluation.

1.3 Scope of Safety Culture Evaluation

The scope of this safety culture evaluation was defined to include all of the functional areas at the Davis-Besse Nuclear Power Station, the FirstEnergy Nuclear Operating Company (FENOC) and some corporate functions of FirstEnergy Corporation (FE). In addition, long-term on-site located contractor personnel were included as part of this evaluation. The evaluation team was on site at the Davis-Besse Nuclear Power Station from November 1 – 3, 2005 to administer an Organizational and Safety Culture Survey and again from November 7 – 18, 2005 to conduct the interviews and observations.

The evaluation team was comprised of three independent consultants, two from Human Performance Analysis, Corp. (HPA) and one from Sonalysts, Inc. One additional team member was an industry peer representative from the Nuclear Management Company. Abbreviated biographies of the team members are presented at the end of this report.

The evaluation team also reviewed the corrective actions initiated by Davis-Besse to address the Areas for Improvement identified during the November 2004 Independent Assessment. Also assessed were the rigor, criticality, and overall quality of Davis-Besse's 2005 Annual Assessment of Safety Culture and Safety Conscious Work Environment.

This Safety Culture Evaluation is a 'point in time' snapshot of the Davis-Besse Nuclear Power Station. Although the team recognizes that FE, FENOC and Davis-Besse may have made organizational and process changes to continue improving the Station's safety culture since the point in time at which the evaluation was conducted, the team has not assessed the impact of those actions. Therefore, changes that have occurred subsequent to the time of the evaluation are not discussed in this report.

1.4 Methodology

The complete details of the methodology used in this evaluation are presented elsewhere (Haber and Barriere, 1998), but are briefly described in this section. Five methods are used to collect information on the organizational behaviors identified in Figure 1. These methods are:

- Functional Analysis
- Structured Interviews
- Behavioral Anchored Rating Scales (BARS)
- Behavioral Checklists
- Organizational and Safety Culture Survey

The use of multiple methods to assess any organizational behavior assures adequate depth and richness in the results obtained. In addition, confirming the results obtained through the use of one method with results obtained through the use of another method provides convergent validity for the results. A brief description of each method is provided below.

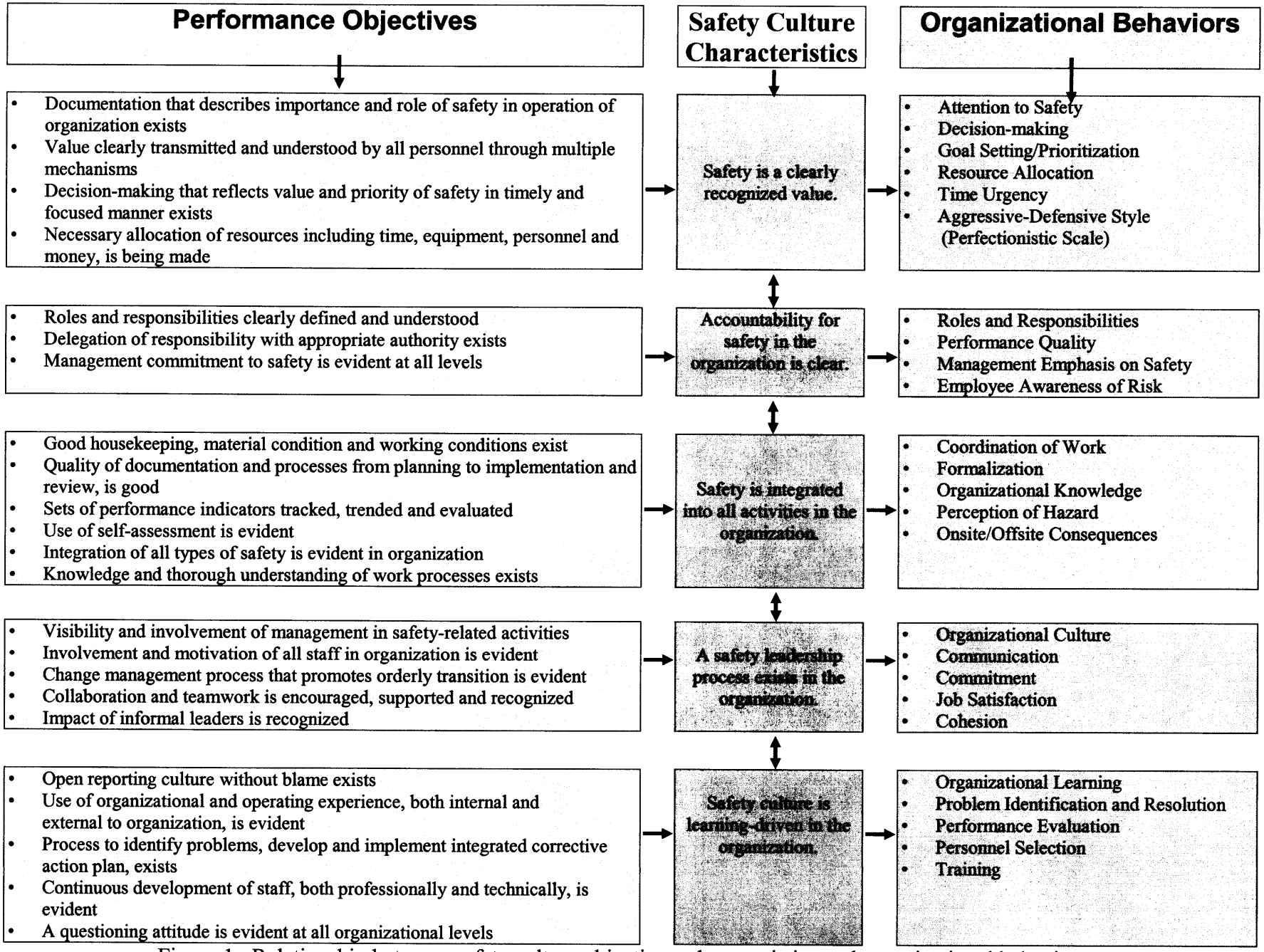

Figure 1. Relationship between safety culture objectives, characteristics and organizational behaviors

1.4.1 Functional Analysis

The purposes of the Functional Analysis were to: (1) clearly identify the organizational units of FE, FENOC, and the Davis-Besse Nuclear Power Station, (2) gain an understanding of each organizational unit's functions and interfaces, (3) examine the way in which information flows among and within units, and (4) identify the key supervisory and managerial positions of each organizational unit. Information to support this activity was obtained primarily through the review of the documentation identified below, some semi-structured interviews, and some observations of organizational activities. The organizational behaviors to be evaluated were identified from the information collected during this analysis.

Documentation Review

Prior to the team's activities on site, the following documents were reviewed:

Condition Reports generated as a function of 2004 Safety Culture Independent Assessment
Davis-Besse Nuclear Power Station NRC Special Inspection – Management and Human Performance Corrective Action Effectiveness – Report No. 05000346/2004013 (DRP)
Davis-Besse Nuclear Oversight Quarterly Assessment Reports:
- DB-C-04-04
- DB-C-05-01
- DB-C-05-02

Davis-Besse Nuclear Power Station Operational Improvement Plan Operating Cycle 14, Rev. 8, 3/05
Davis-Besse Safety Conscious Work Environment 2nd Quarter 2005 Collective Assessment Report – 8/5/05
Employee Concerns Program – 2005 Results
Draft Organizational Charts for DB – June 2005
Minutes from recent 4C's meetings
NOBP-LP-2013, Rev 1, Safety Conscious Work Environment Review Team Charter
NOBP-LP-2501, Rev 1, Safety Culture Assessment
NOBP-LP-2502, Rev. 0, Safety Culture Monitoring
NOBP-LP-3004, Rev. 0, Safety Committee Charter
NOPL-LP-2004, Rev 1, Nuclear Safety
NOPL-LP-2003, Rev. 1, Policy for Maintaining a Safety Conscious Work Environment
Safety Conscious Work Environment Review Team Briefing Sheet
Safety Culture Performance – People Development and Effectiveness – September 2005

Various other documents were requested and reviewed while the team was on site.

MAOM Packages
DB-0443-1 "Pre-job Checklist November 12, 205 – PORV Block Valve Fuse Replacement
Conduct of Operations – pocket guide
PRJ-99-013 FW piping replacement Project Challenge Review
NOBP-OP-007 "Conduct of IPTE"
INPO OE 12810 – mis-labeled fuse replacement

CR 05-05619
CR 05-05605
CR 05-05650
CR 05-0557
HU toolbox pocket guide
Performance Planning Guide Form 216.1
Daily online radiological report(s) – various
DB-13 Pre-job inspection checklist for energized equipment
ED-7828-12 FENOC prejob checklist form – management observations
Operability Recommendation – DRAFT – tracer gas testing
058-01 Equipment Problem solving database
October 2005 SCWE report
EA-04-0224 "Apparent Violation of Employee Protected Rights (OI Report)
Annual Safety Culture Assessment of the Davis-Besse Nuclear Power Station, Draft Document, November 2005
NRC Safety Culture/Safety Conscious Work Environment Exit Notes, October 19, 2005
Post Steam Generator/Mid-Cycle Outage Individuals Survey Results
Nuclear Oversight Safety Culture and Safety Conscious Work Environment Interviews/Survey, October 2005

The team also had access to the Station's intranet system which included the Condition Reporting System (CREST).

Organizational Behaviors

Based upon the results obtained from the Functional Analysis, the following organizational behaviors were identified for evaluation:

Attention to Safety – Attention to safety refers to the characteristics of the work environment, such as norms, rules, and common understandings that influence personnel's perceptions of the importance that the organization places on safety. It includes the degree to which a critical, questioning attitude exists that is directed toward organizational improvement.

Communication – Communication refers to the exchange of information, both formally and informally, primarily between different departments or units. It includes both the top-down (management to staff) and bottom-up (staff to management) communication networks.

Coordination of Work – Coordination of work refers to the planning, integration, and implementation of work activities of individuals and groups.

Formalization - Formalization refers to the extent to which there are well-identified rules, procedures, and/or standardized methods for routine activities as well as unusual occurrences.

Goal Setting/Prioritization – Goal setting/prioritization refers to the extent to which facility personnel understand, accept, and agree with the purpose and relevance of goals.

Organizational Learning – Organizational learning refers to the degree to which individual personnel and the organization, as whole, use knowledge gained from past experiences to improve future performance.

Performance Evaluation – Performance evaluation refers to the degree to which facility personnel are provided with fair assessments of their work-related behaviors. It includes regular feedback with an emphasis on improvement of future performance.

Performance Quality – Performance quality refers to the degree to which facility personnel take personal responsibility for their actions and the consequences of the actions. It also includes commitment to and pride in the organization.

Problem Identification and Resolution – Problem identification and resolution refers to the extent to which the organization encourages facility personnel to draw upon knowledge, experience, and current information to identify and resolve problems.

Roles and Responsibilities – Roles and responsibilities refer to the degree to which facility personnel's job positions and departmental work activities are clearly defined and carried out.

Training – Training refers to the degree to which personnel are provided with the knowledge and skills required to perform tasks safely and effectively. It includes personnel's perceptions regarding the general usefulness of the training program.

1.4.2 Structured Interview Protocol and Behavioral Anchored Rating Scales (BARS)

The Structured Interview Protocol was derived from a database of interview questions. A particular subset of questions can be selected to provide a predefined focus to an interview session. The evaluation team members selected a set of questions to gather information related to the safety culture characteristics and to assess the organizational behaviors identified from the Functional Analysis.

A total of 101 interviews were requested and 97 were actually conducted as part of the evaluation. Each interview lasted approximately one hour and a few less formal follow-up interviews were conducted to provide further clarification when necessary.

The Behavioral Anchored Rating Scales (BARS) were administered to those individuals who participated in the structured interviews. Each interviewee was administered the BARS belonging to four organizational behaviors. The BARS provided the opportunity to quantitatively summarize qualitative data associated with the interviewee's perceptions of the organization. Approximately 376 BARS were collected representing 11 organizational behaviors.

Job positions were placed in categories labeled as Directorates, based upon the Director to whom the functional group reports. The Strategic Level was defined as the FE Chairman and CEO, the Corporate Officers of FENOC, and the Site Vice President of the Davis-Besse Station. Senior Management was defined as the Site Vice President and the Station Directors.

1.4.3 Behavioral Checklists

The use of behavioral checklists provides an unobtrusive assessment of particular organizational behaviors and structures observations of critical processes including shift turnovers, work planning, management meetings, work unit meetings, and responses to planned or unplanned events. The appropriate behavioral checklists to be implemented were selected based upon the type of meeting or activity being observed.

During the course of the evaluation, over 70 Station observations were made. The data represent observations of Control Room Turnovers, Operations Shift Turnover Meetings, Management Alignment and Ownership Meetings (MAOM), Duty Calls, Work Scheduling Meetings, Shop Morning Briefings, Corrective Action Review Board Meetings, Senior Leadership Team Meetings, Executive Leadership Team Meeting, 4Cs Meeting, Supervisors' Briefing, Managers' Council, Pre-Job Briefings, Maintenance First Line Supervision Meeting, Operations Training Board Meeting, Problem Solving and Decision Making Team Meeting, Fleet Call, Outage Management Meeting, CNRB Review Meeting, TOP Team Meeting, Shift Managers' Meeting, Operations Crew Stand Down, and field trouble shooting of RPS Channel 4.

1.4.4 Organizational and Safety Culture Survey

The primary purpose of administering a paper-and-pencil survey is to measure, in a quantitative and objective way, topics related to organizational culture, safety culture, coordination of work, job satisfaction, communications, work group cohesion, organizational commitment, perceived hazardous nature of work, environment, safety and health issues, and attention to safety. By conducting a survey, a broad sample of the individuals in the organization can be obtained and it is possible to gather information from a larger number of personnel than can be reached through the interview process alone.

The total population of 803 full-time, permanent and Station and long-term contractor personnel were invited to participate in the survey. A total of 571 individuals actually completed the survey, which represents a 71.1% response rate. This response rate is acceptable for the purpose of drawing accurate conclusions regarding the perceptions of Davis-Besse personnel.

1.5 Conclusions

The conclusions presented below summarize the insights gained from the evaluation team's analyses of the structured interviews, BARS, checklists and survey data. The conclusions are presented in terms of the six Safety Culture Characteristics and their associated Performance Objectives. Strengths and Areas in Need of Attention related to each Performance Objective and where indicated, Areas for Improvement for each Characteristic, are presented.

Based on definitions from Davis-Besse Business Practice procedure DBBP-VP-0009, each of the six Safety Culture characteristics was assigned a rating of:

Highly Effective – Assessment results identified no Areas for Improvement and no or few Areas in Need of Attention. Performance, programs and processes are more than sufficient to obtain the desired results with consistency and effectiveness.

Effective - Assessment results identified one or several Areas for Improvement and no or a few Areas in Need of Attention. Performance, programs and processes are sufficient to obtain the desired results with consistency and effectiveness.

Marginally Effective - Assessment results identified more than several Areas for Improvement and several more Areas in Need of Attention. The basic intent of the program or process is achieved, however, the performance, program or process is challenged to obtain the desired results with consistency and effectiveness. Prompt management action is required.

Not Effective – Assessment results identified significant shortcomings such that the basic intent of the program or process is not being achieved. Areas for Improvement require immediate management action.

1.5.1 Safety is a clearly recognized value in the organization.

This characteristic is rated EFFECTIVE.

Performance Objective 1.1: Documentation that describes the importance and role of safety in the operation of the organization exists.

Strengths

- Documentation exists and continues to be updated and revised that demonstrates the clear and high priority the organization places on safety, e.g., FENOC Safety, Safety Culture and SCWE Policies, Safety Culture Assessment Process.
- Functional groups have documentation describing expectations and standards with respect to safety that have been updated and revised, such as the Conduct of Operations, the Conduct of Maintenance, and Engineering Principles.
- Industrial safety messages and human performance strategies are documented and communicated daily during the shift turnovers and Management Alignment and Ownership Meetings (MAOM).

Areas in Need of Attention

- The concepts of Safety Culture and Safety Conscious Work Environment (SCWE) are still confusing to many individuals. While the definitions and differences have been communicated in various venues, e.g., postings, training, daily packages, they need to be consistently and explicitly identified in more day to day activities, e.g., how a particular decision or behavior is part of Safety Culture or SCWE.

Performance Objective 1.2: The value of safety is being clearly transmitted and understood by personnel through multiple mechanisms.

Strengths

- Multiple mechanisms continue to exist to communicate the value of safety throughout the organization. Interviewees most consistently identified the daily morning and afternoon plant status e-mails as very useful.
- Survey and interview data indicates that a more consistent safety message is being communicated by management.
  This area was identified as an Area for Improvement in the 2004 Independent Safety Culture and SCWE Assessment. Corrective actions in response to this AFI were the successful mid-cycle outage areas of focus.
- Some behaviors are occurring which continue to indicate that the value of safety is understood.
  - Personnel continue to write Condition Reports (CRs) to raise issues related to safety.
  - Some Operators are questioning and challenging important safety issues, e.g., procedure for resetting feed regulator, where to hang tags so work could be performed safely.
  - Recognition of additional information required for safety, e.g., identification of need for energized area briefing sheet for RPS-4 work.
  - Many individuals continue to indicate that it is not a problem to raise safety concerns to supervision.
- The overall score on the Attention to Safety Scale in the survey indicates that the general employee and long-term contractor population at the Station believes that the organization highly values attention to safety in its work activities. In particular, behaviors identified as 'not being treated like a child', 'doing one's job well', 'learning from mistakes', and 'not cutting corners' were perceived to be highly valued. The results also indicated that there was alignment across all work groups on this value.

Areas in Need of Attention

- Some behaviors still indicate that the value of safety is not consistently demonstrated and internalized by all members of the organization and need to be improved.
  - Some attention to detail issues suggests that individuals are making their own decisions with regards to safety, e.g., procedural use and adherence errors, tagging errors, valve mispositionings.
  - Informality and inconsistency is evident in the use of three way communication at all levels in the organization and in the announcing of unexpected alarms in the control room.
  - The communication of the daily safety message is still not highly effective since it is often not emphasized or made relevant to the day's planned work activities and is not given the same level of priority across all meetings, e.g., in shift turnover meetings and morning shop briefs it does not occur until the middle or end of the meeting, while in the MAOM and Fleet Call it is one of the first topics discussed.
  - Significant differences were obtained on the Attention to Safety Scale on the survey between Managers and Non-Managers. Behaviors which were identified to

be most different between the two groups were, 'reporting problems', 'owning a problem until it is resolved', and 'staying with a problem until it is resolved'. For all of these behaviors, Managers believed them to be more valued by the organization than Non-Managers did.

- Management and supervision continue to miss opportunities to communicate and internalize the value of safety message.
  - Observations during this evaluation indicated either poor or no discussions of the tagging and mispositioning errors in the morning shop briefs, MAOMs, or shift turnover meetings immediately following those events.
  - Discussion of reduced leakage rates during the MAOM and shift turnover meetings were not used to reinforce the safety and reliability purpose of the recently completed mini-outage.

Performance Objective 1.3: Decision making that clearly reflects the value and priority of safety in a timely and focused manner exists.

Strengths

- The most consistently identified example of conservative decision-making with respect to safety during this evaluation was the mini-outage conducted in late October 2005. Within the outage particular conservative decisions were noted:
  - An additional operations individual was stationed in the Control Room during the up and down power transients to monitor reactivity; and
  - Additional tests were added when emergent issues were identified, e.g., control rod testing, grounding issue on secondary side.
- Some examples of conservative decision making with respect to safety identified during this evaluation, included:
  - The use of the Duty Teams to support operational decision-making.
  - The use of a Problem Solving and Decision Making Team to resolve the RPS Channel 4 trip.
  - Addition of a pre-job briefing to the task of adding water to the make up tank because of reactivity considerations.
  - The formation of a screening committee to ensure the transition of NCAQs to SAP does not result in any missed CAQs.
- The implementation and consistent use of the Nuclear Operating Procedure (NOP) on Problem Solving and Decision Making was consistently identified by most interviewees as an effective mechanism to facilitate the decision making process.

Areas in Need of Attention

- Decision making in the organization is still a very top-down process and is primarily based upon the perception reported to the team by Senior Management that this behavior is necessary in a plant going through recovery. In order to ensure sustainability of the recovery efforts, some transition in decision making behavior needs to be considered.
  - Almost all meetings observed in which representatives of multiple organizational levels were present were conducted in a very top-down manner. Most of the communication that occurred in those meetings was initiated by the more senior members present. Resolution on identified issues was primarily decided by senior

personnel. Less senior personnel typically did not volunteer additional information, raise alternatives, or challenge assumptions underlying the decisions.

- Several examples of decision making that do not clearly reflect the value and priority of safety were identified and need to be addressed.
  - Long standing (3 years) equipment issue of leaking valve that Chemistry must operate to take a sample that has resulted in increased personnel dose and subsequent change in dose goals.
  - The delay in resolving the problem with the disengaged float in the Borated Water Storage Tank.
  - The lack of involvement by Operations in the Problem Solving and Decision Making Teams and their demonstrated ownership for some of the problems.
  - The absence of Independent Oversight in the observation of emergent high and medium risk activities, e.g., RPS Channel 4, PORV block valve indication.
  - Identification of several operator work arounds that have been in place for extended periods of time, e.g., weekly header pressure check, ventilation supply damper.
  - The prioritization of safety on the project review attribute list is ninth, while commercial value is identified first.

Performance Objective 1.4: The necessary allocation of resources, including time, equipment, personnel and money, is being made.

Strengths

- FENOC has continued to allocate additional monies to Davis-Besse to assist efforts in the reduction of the backlog and the backlog has been reduced.
- Workforce replenishment activities this past year have included an SRO/RO graduating class and the hiring of additional maintenance craft.
- The impact of the August 2004 FENOC Reorganization is perceived to have stabilized and most transitional assignments are complete. At Davis-Besse 8 individuals are still on transitional assignment and have been for over one year.
- The implementation of the FENOC Policy on resource sharing is perceived to be less of an issue than it was last year. Some concerns about upcoming resource sharing were expressed because of the overlap between Davis-Besse's and Beaver Valley's spring outages.

Areas in Need of Attention

- Station personnel expressed a number of concerns, about money, time and resources, in meeting significant milestones for RFO 14. Issues that need additional attention include the disposition of over 300 work orders that were taken out of the outage scope and remain unscheduled and the lack of craft oversight for projects such as the RCP replacement which will be performed by contractor personnel.
- While backlog reduction efforts continue, many individuals still believe that the appropriate resources have not been allocated to accomplish the reduction in a timely manner and that this continues to impact the completion of ongoing work.

- Data on the Behavioral Anchored Rating Scales indicates that there is a lot of variability in the perceptions of interviewees about the clarity of goal setting and prioritization in the organization.

Areas for Improvement for Safety Culture Characteristic 1

None

1.5.2 Accountability for safety in the organization is clear.

This characteristic is rated MARGINALLY EFFECTIVE.

Performance Objective 2.1: Roles and responsibilities are clearly defined and understood.

Strengths

- Personnel in the Operations, Maintenance, and Engineering Directorates have the clearest perception of their roles and responsibilities.
- The promotion of the Emergency Response Manager is perceived to reflect the importance of that organization to the Station.
- The organizational changes that have been made in Maintenance Management have been perceived positively by most employees.
- Efforts to obtain common processes across all three FENOC sites to streamline and improve overall performance continue. In several instances, Davis-Besse is perceived to be ahead of the other stations because the long outage gave them an advantage in preparing the processes.

Areas in Need of Attention

- The difference in the roles and responsibilities of the Site Vice President and the Director of Operations still needs to be more clearly defined, communicated, and implemented.
- The role of Human Resources is sometimes unclear with respect to its responsibilities in training supervision and management in areas like coaching and discipline when there is a FENOC Leadership and Development Group.
- The TOP Team still does not convey a sense of clarity of purpose and may be confounding the issue of who is actually driving resolution of safety culture issues. To date this group has been limited in effecting change at the Station.
  Corrective actions in response to the 2004 Independent Assessment of Safety Culture and SCWE in using the TOP Team to engage the workforce have not been effective.

Performance Objective 2.2: Delegation of responsibility with appropriate authority exists in the organization.

Strengths

- Many of the individuals surveyed believe that taking responsibility is not something to be avoided. The Site Projects Work Group believed this to be true more than the other work groups did.

Areas in Need of Attention

- Efforts to push accountability and responsibility down into the organization have not yet been successful. Senior Management still needs to disengage itself more from the day to day activities of the plant and provide the appropriate authority and trust that will make delegation efforts successful.
    - Employees still describe that the Site Vice President needs to review and approve all overtime, task authorizations, and purchase orders over $100.
    - Employees stated that the roles and responsibilities of the Directors and Managers are unclear since everyone always talks about going to the Site Vice-President for decisions and resolutions.
    - Individuals identified that the Site Vice President was very quick to get involved in resolving issues within a group that doesn't directly report to him.
    - Executive Leadership Team members expressed some concern with Davis-Besse's Senior Leadership Team's ability to demonstrate ownership for the upcoming outage to ensure its success.
- Mixed messages given by management with regard to taking responsibility have resulted in uncertainty within some groups in the workforce as to the true expectations of management in this area. These messages need to be clarified.
    - Individuals in the Security and Maintenance Work Groups believe that avoiding responsibility is a more valued behavior than individuals in the other work groups believe. This also true, although to a lesser extent, with individuals in the Plant & Equipment Reliability Engineering and Operations Work Groups.
    - Individuals in the Union/Represented job category believe that avoiding responsibility is a more valued behavior than individuals in other job categories believe.
    - Several individuals still expressed the opinion that they would rather not step up to supervisory positions or take on new or additional responsibilities, e.g., Equipment Operators into Reactor Operator positions and Reactor Operators into Senior Reactor Operator positions.

Performance Objective 2.3: A management commitment to safety is evident at all levels in the organization.

Strengths

- In general, personnel perceive that management is placing an emphasis on issues related to environment, safety and health and that the Station's employees generally have a good awareness of the risks in their work environment.
- Most individuals interviewed indicated that they believe that everyone intends to do things safely.
- All medium and high risk jobs are observed by at least a supervisor and often a member of the Duty Team.

Areas in Need of Attention

- Expectations and standards still need to be communicated and implemented in a more rigorous and consistent manner.
  - DBBP- VP-0010, 'What One Can Expect to Occur When a Mistake/Error Occurs' is under revision, and while it will now apply to individuals working in the Station, there is still uncertainty as to how it will be implemented, e.g., actions with little or no consequence, wrong decisions by management, subjectivity by supervision. Questions have also been raised about the standards to be applied to those who commit errors outside the Station, e.g., engineering.
  - Management presence in the field is perceived to have decreased except in those situations when required, e.g., medium and high risk jobs.
    Corrective actions taken in response to the 2004 Independent Assessment of Safety Culture and SCWE to increase management and supervision in the field, e.g., meeting-free Thursdays, have not been effective.
  - Use of event free tools, e.g., peer checking, pre and post job briefs, 3 way communications, are not applied in a consistently rigorous manner.
  - Standards need to be equally challenging across all areas, e.g., relaxation of ALARA goals mid-year (radiation dose and personnel contaminations), while the threshold for human performance errors in resetting section and station clocks was lowered and made more stringent.
- Enhanced foresight and planning efforts are necessary in implementing common processes if they are to have the intended impact on safety performance.
  - Fleet Managers have not always allowed sufficient time to roll out new processes within the procedural requirements and with a feasible change management plan, e.g., Corrective Action Program into SAP.
  - Applicability of some common processes to Davis-Besse's current practices still needs additional review and evaluation, e.g., Conduct of Maintenance.
- There is still an absence of a 'we' mentality within the organization, particularly among some Senior Managers.

Areas for Improvement for Safety Culture Characteristic 2

- A long-term strategy to ensure the organization's continued and sustainable commitment to safety still needs additional focus and development.
  - Management's actions concerning safety issues are generally being driven from the top down resulting in a lack of accountability and ownership.
  - Activities are perceived to be initiated as reactions to externally driven requirements.
  - Performance standards are largely externally driven and being imparted, not developed or internalized from all levels within the organization.

1.5.3 Safety is integrated into all activities in the organization.

This characteristic is rated as EFFECTIVE.

Performance Objective 3.1: Good housekeeping, material condition, and working conditions exist in the organization.

Strengths

- The volume of radioactive waste stored in the Radwaste Building has been reduced.
- The SRO surveillance reviews have been modified so that individuals do not have to come in on their time off.
- Most individuals do not describe working an excessive amount of overtime, but many still cite work life balance issues.

Areas in Need of Attention

- Housekeeping and material condition still present some issues for the Davis-Besse Station.
    - While the volume of radioactive waste stored in the Radwaste Building has been reduced, contaminated turbine rotors, scheduled to be removed from site, has been postponed.
    - Insufficient storage space presents some safety concerns for individuals working in the Warehouse.
- Shift scheduling in Operations was frequently identified as problematic for several reasons including, manning and work completion. Efforts to resolve this issue were under consideration during this evaluation.

Performance Objective 3.2: The quality of documentation and processes, from planning to implementation and review, is good.

Strengths

- Overall perceptions of the coordination of work at Davis-Besse continue to improve. This area represents the largest positive change since the 2003 and 2004 Independent Assessments. All work groups were aligned in this belief. Several initiatives may be contributing to the perception, the increased use of craft walk-downs, the use of a checklist for the pre-job briefing, attendance at the T+ meetings, the broader scope of the Fix It Now Team, and the involvement of the Duty Team in the earlier mitigation of events.
- Overall perceptions of the formalization process at Davis-Besse were very positive and improved from the 2004 Independent Assessment.
- Procedures in Operations and Maintenance are generally perceived to be good and improving.

Areas in Need of Attention

- Many individuals still indicated that the existence of a dedicated Procedures Group would be very helpful. Currently, there is a project on procedures supported by contractors which has been addressing much of the procedures backlog in Operations, Maintenance and Engineering. The project has been extended but is scheduled to end after RFO14.
- Although the perception of the coordination of work across the Davis-Besse Station has improved, many individuals still identified areas in need of improvement.
    - The work schedule is still lacking in detail, in particular, with respect to manning, e.g., HPI quarterly test did not include the 6 hours that it took I&C to put the gauges on and yet this test is done repeatedly.
    - Operations Work Support often does not have enough resources to get all things done, e.g., hanging clearances for boric acid pump work.
    - The credibility of the schedule, especially at T+2, is questionable.
    - Work planning does not include FIN work, project planning, outage scheduling, surveillances, and planning resources.

Performance Objective 3.3: Sets of performance indicators that are tracked, trended, and evaluated exist.

Strengths

- Performance indicators continue to be used and updated for almost all groups and processes.
- The Management Team periodically reviews the performance indicators in their Operational Improvement Plan meetings.
- Databases exist for many performance measures, e.g., supervisory observations.

Areas in Need of Attention

- Performance indicators need to be more effective for improving performance. Within one work group, supervision was unaware of where or what the department performance indicators were.
- Databases for performance measures are still not consistently used to obtain information, only to enter the required data. For example, no clear examples could be provided of how information obtained from the observation program has been trended or tracked. The only time the information appears to be used is by the Training Coordinators and in the MAOM Duty Team observations.

Performance Objective 3.4: The use of self-assessment is evident.

Strengths

- A self-assessment process exists at the Davis-Besse Station.
- The use of Fleet Assessments was identified as very useful by many interviewees.
- Business practices are used to monitor and assess Safety Culture and Safety Conscious Work Environment across the FENOC Fleet.
- The need to conduct systematic self-assessment activities is recognized.

Areas in Need of Attention

- Executive and Senior Leadership Team individuals identified the need for Fleet expectations regarding the use of self-assessment to be established and communicated.
- Self-assessment was often described as not being critical enough and therefore not always useful. Few groups perceive that they have the time or resources needed to conduct systematic self-assessment activities.
- The results of the 'Annual Safety Culture Assessment of the Davis-Besse Nuclear Power Station' are discussed in Section 1.6 of this report.

Performance Objective 3.5: The integration of all types of safety is evident in the organization.

Strengths

- Each work group continues to document and report on their daily radiological dose and contaminations.
- A risk based inspection/observation system continues to be conducted by Station management and supervision.

Areas in Need of Attention

- An integrated conception of and approach to all types of safety is one of the key attributes of an effective safety culture. This concept needs to be internalized by most management and staff at the Station.
    - Attitudes towards nuclear and industrial safety continue to differ at all levels of the organization.
    - The reporting line for the Station industrial safety specialists and human performance advocate is in the training organization.
    - Safety representatives were not observed attending the shift turnover meetings and only occasionally attend the MAOM.
- Industrial safety statistics this past year across the FENOC Fleet were higher than in past years. Senior Management indicated the need for a behavioral change initiative.

Performance Objective 3.6: A knowledge and understanding of the work processes exists.

Strengths

- In general, most of the work groups indicate that they have a good understanding of and familiarity with the work processes at the Station.
- Results from the survey data indicate that work groups in the Operations and Maintenance Directorates, and the Security Work Group understand the hazardous nature of their work and the need to pay attention to potential danger more so than other groups.
- The field and duty observation programs continue to facilitate an understanding of many of the work processes.

Areas in Need of Attention

- Individuals from various work groups indicated that the transition to some common work processes e.g., Corrective Action Program into SAP, has not been planned or implemented well.

Areas for Improvement for Safety Culture Characteristic 3

None

1.5.4 A safety leadership process exists in the organization.

This characteristic is rated as MARGINALLY EFFECTIVE.

Performance Objective 4.1: There is visibility and involvement of management in safety-related activities.

Strengths

- The Duty Team field observation program is perceived by most individuals as a valuable activity. Observations during this evaluation indicated that the Station is doing a better job in coordinating the management observations with the work management schedule.
- The increased use of the Problem Solving and Decision Making Teams is perceived by many individuals as a positive reflection of management's involvement and support for safety-related activities.
- Overall, satisfaction with communication increased significantly at Davis-Besse compared to the 2003 and 2004 Independent Assessments.
- The Managers' Council is a positive effort by Station Department Managers to communicate unencumbered with their peers on all issues relevant to Station performance. The effectiveness of their efforts will depend upon the receptivity of Senior Management to consider and support the implementation of their suggestions.

Areas in Need of Attention

- The field and duty observation programs need to be more effective in demonstrating their role and involvement in improving performance.
    - Problems with the coding categories still have not been resolved and have resulted in limited value to some of the data collected. The Executive Leadership Team has recently discussed this and changes are anticipated shortly.
    - Reporting and trending of the observation data has not been available. Efforts are underway to move the database into more a user friendly application.
    - The increased incidence of human performance errors in some groups in the last few months would seem to indicate a weakness of the observation program in detecting precursors to such events.
    - Standards and expectations observed during field observations are not being challenged by management, e.g., during discussions of duty team observations in the MAOM, there is inconsistent behavior on the part of the observer in acknowledging the initiation of CRs for identified deficiencies and on the part of the management team to challenge them if they did not.

- Management presence in the field, outside of the required observations, was perceived by a number of individuals to have decreased.
- Many individuals identified that it appeared that the KIP program was not being used.
- The effectiveness of management involvement in all safety-related activities depends on communications. Results from this evaluation indicate that there are still some significant issues regarding communication that need to be addressed:
    - Significant differences still exist between work groups on several aspects of communication. These differences include trust in communications from the individuals with whom they interact; perceived accuracy of the communications from individuals with whom they interact; the desire for interaction; and overall satisfaction with their communications. The Maintenance and Security Work Groups generally had the lowest perceptions within the organization regarding these aspects of communication. The Maintenance Work Group, however, demonstrated a significant improvement in Satisfaction with Communication since the 2004 Independent Assessment.
    - While multiple mechanisms exist for communication, several missed opportunities for using these mechanisms to reinforce expectations and standards were identified during this evaluation.
        - The Maintenance FLS Meeting was absent of any significant discussion or dialogue. The Maintenance Manager was talking at his supervisors, not with them.
        - The Supervisor's Briefing was poorly attended, although it was noted that the attendance was better than previous sessions, and the topics did not seem to engage the audience. There is an expectation that this information will be communicated out, but there are no follow up activities to evaluate if the expectation is being met.
        - Several opportunities in shift turnover meetings, MAOMs, and morning shop briefs to communicate key points, e.g., purposes of the mini-outage, are being missed.
        - Issues identified during the 4Cs meeting seemed to reflect so many of the same issues that had been identified in previous years. Is the repetitiveness due to non-resolution of the issues, barriers in communication in getting out the resolution of the issue, or are there no other new issues?
    - As previously noted, communications are still most typically initiated by individuals at higher organizational levels in the activities observed as part of this evaluation. Their ownership of communication may be inhibiting the communication mechanisms from being effective and allowing lower level managers to actively participate in more of these activities. Senior managers need to promote and reinforce others in the organization to communicate their message.

Performance Objective 4.2: The involvement and motivation of all staff in the organization is evident.

Strengths

- In general, while not all were necessarily statistically significant, the trend of many of the responses on the Organizational and Safety Culture Survey was in an upward direction from the results obtained on the same survey administered at Davis-Besse in November 2004.
- A predominantly constructive cultural style that promotes behaviors related to teamwork, sensitivity to the needs of others, and professional achievement continues to exist in the Davis-Besse organization. These behaviors are perceived to be valued to a greater extent than they were in the 2004 Independent Assessment and specifically, by individuals within the work groups of Site Projects, Design Engineering, and Other Site Matrixed Organizations.
- Perceptions regarding organizational commitment, and job satisfaction were generally higher than they were in the 2004 Independent Assessment. The Radiation Protection, Site Projects, Design Engineering, Regulatory Compliance and Fleet Oversight Work Groups had higher scores on these behaviors than other work groups did.
- Across job position categories, the greatest increase from the 2004 Independent Assessment in the perception of many of the behaviors evaluated on the survey was in the Specialists Job Position Category.

Areas in Need of Attention

- While not all necessarily statistically significant, the scores obtained on many of the scales on the November 2005 Organizational and Safety Culture Survey were equivalent to those obtained on the same survey administered at Davis-Besse in February 2003.
- Several work groups are not aligned with the rest of the organization on many of the behaviors important to a positive safety culture. Several of these groups had been previously identified to the organization. The consistency of the results for these groups suggests that management attention and oversight has not been effective in changing the perceptions of these groups and that additional efforts are required to achieve a more homogenous organization and to better promote these behaviors.
    - In particular, the work groups of Operations and Security tended to believe the organization places less value on constructive behaviors.
    - To a lesser extent the Chemistry, Maintenance, Training, and Plant & Equipment Reliability Engineering Work Groups also had lower scores on the more positive behaviors, but among those groups Maintenance showed the most significant improvement in their perceptions since the 2004 Independent Assessment.
    - Survey results also indicated that these same groups perceived lower levels of organizational commitment and job satisfaction than others.

- Differences between management and non-management personnel on the variables measured by the survey scales were still largely in the same direction they had been in the 2004 Independent Assessment, with managers typically having higher scores on the more positive type behaviors than non-managers. Results based on job position categories were generally consistent with the Management/Non-Management profiles obtained. That is, Directors/Managers and Superintendents/Supervisors had higher scores on the more positive type behaviors than Specialists or Union/Represented personnel.

Performance Objective 4.3: A change management process that promotes an orderly transition is evident.

Strengths

- Efforts to implement the change management process at Davis-Besse to manage programmatic changes are perceived by many individuals to be more formal and consistent.
- The most recent example of change management involves the transition of the NCQAs from CAP into SAP. Results to date indicate that NCAQs and not CAQs are being placed appropriately into the notification tracking system.

Areas in Need of Attention

- Fleet Management needs to be timelier and better prepared in its efforts to implement common processes across the sites. Adherence to a more formal and rigorous change management process will effect more successful implementation, e.g., training and communication for the CAP transition was identified as problematic.

Areas for Improvement for Safety Culture Characteristic 4

- While improvements in values and attitudes have been observed since the 2004 Independent Assessment they are generally back to the levels obtained in the 2003 Independent Assessment during the long outage. Davis-Besse leadership behaviors need to demonstrate continuing improvement and sustainability across all levels of the organization to ensure the desired outcomes. The top down style of management, previously identified, while effective for short-term results, will not result in long-term sustained success.
    - The large number of differences identified within and between groups in much of the data collected in this evaluation indicates that a consistent message with respect to desired behavioral changes is still not being effectively communicated, understood or accepted throughout several parts of the organization.

1.5.5 Safety Culture is learning driven in the organization.

This characteristic is rated as MARGINALLY EFFECTIVE.

Performance Objective 5.1: An open reporting culture without blame exists in the organization.

Strengths

- In general, personnel feel that avoiding responsibility for fear of being punished is not a desired behavior within the Davis-Besse organization.
- Most employees report that they feel they can and do write CRs on any issue.
- Employees generally receive feedback on the status of the CRs they submit.

Areas in Need of Attention

- The Business Practice, 'What One Can Expect to Occur When a Mistake/Error Occurs" (DBBP-VP-0010) is currently under revision but many individuals still expressed some concerns about the consistency with which it will be implemented and that may impact perceptions about open-reporting.
- The Station has stopped reporting department level self-reporting ratios and only provides an overall station roll up. The potential consequence of this action is that there are no longer any Corrective Action Program indicators that could provide early changes in SCWE for a particular department.
- Some skepticism still remains with respect to having a truly open reporting environment. Individuals from two different work groups indicated a reluctance to identify problems for fear of retaliation. Details of this issue are presented under Safety Culture Characteristic 6 on SCWE.

Performance Objective 5.2: The use of organizational and operating experience (OE), both internal and external to the organization, is evident.

Strengths

- OE information, both internal and external to the Station, continues to be distributed and communicated throughout the organization by various mechanisms, e.g., turnovers, e-mails, pre-job briefs, work orders, DB TV, and training lesson plans.
- Some individuals have demonstrated their appreciation of OE and provided useful information for the Station and the industry, e.g., non-conservative equations used for engineering HVAC calculations.
- FENOC continues to conduct benchmarking in several different areas across the nuclear industry.

Areas in Need of Attention

- The effectiveness of OE as part of a learning process at the Davis-Besse Station still needs to be improved.
    - OE information is still not effectively used in meetings and turnovers as it is not typically relevant to the day or station activities.

- OE is not presented as part of the MAOM agenda because it is not required by the formal administrative process.
- Individuals are provided with OE information but there are no clear expectations about what to do with it.
- Individuals are responsible to self-identify which information is applicable to them. Many individuals acknowledge a backlog of information which reduces the timeliness and effectiveness of the process.
- OE is sometimes just defined as the personal experience of the individuals conducting a task.
- OE is not consistently integrated into pre-job briefings, e.g., no formal OE covered in PORV block valve fuse replacement, or in the I&C pre-job brief for field troubleshooting of RPS 4. Some individuals describe that the use of OE depends upon the task.
- The identification of a good catch on a pre job brief, e.g., RPS Channel 4 – use of Ziploc bags because of potential electricity conduction, was not discussed as OE to be shared with others.
- The use of post job briefs was described as infrequent and often informal if they did occur.
- There is no effort to integrate the information between OE, Human Performance Strategies, and the Safety Message.

- Individuals from all directorates were highly varied in their perceptions of how effectively organizational learning takes place at the Station.
- Tracking and trending of information and feedback still needs to be provided from several programs that can contribute to the learning process, e.g., observations.
- Many individuals, including members of the Executive Leadership Team, identified the need for increased benchmarking outside of FENOC.

Performance Objective 5.3: A process that identifies problems and develops and implements an integrated corrective action plan exists.

Strengths

- Most individuals expressed the belief that Davis-Besse is still very good at identifying problems.
- The CR process is still perceived by most of the individuals interviewed to be an effective way to report problems.
- Multiple opportunities continue to exist to report problems, e.g., supervision, CRs, notifications, ECRs, grievances, meetings.
- The Corrective Action Review Board (CARB) is still perceived as an effective assessment of the corrective action process.
- The Corrective Action backlog has been declining.

Areas in Need of Attention

- The timeliness of the resolution of identified issues is still problematic for the Station. Some work groups, e.g., Chemistry, have developed 'burdens list' that they use to elevate the overdue corrective actions to management's attention.

- The Oversight Group, while now visibly present at senior management meetings, is still not consistently accommodating emergent work and lower level personnel activities in their routine.
- Assessment results are often described as not critical enough and appear to result in the acceptance of lower standards and expectations as demonstrated by incomplete or ineffective corrective actions (see examples identified in this report).
- Multiple assessments continue to provide similar information in several areas, e.g., internal and external evaluations of safety culture and SCWE, operations, engineering, corrective action process. The integration of this information could still be improved to facilitate the development of an overall strategy for developing comprehensive corrective actions as soon as possible. This would also facilitate the perception of moving forward in response to these assessments. Independent itemized corrective actions to each of these assessments are often not an effective way to enhance and sustain long term performance improvement and have created the perception that the organization is always looking backward in trying to respond to these issues.

Performance Objective 5.4: The continuous development of staff, both professionally and technically, is evident.

Strengths

- Training programs across almost all areas of the Station have been identified by many individuals as improved. The role of the Curriculum Review Committees for each department was most often identified as a primary reason for the improvement.
- Efforts continue to promote staff development, e.g., INPO assignments, visits to other stations, job rotational assignments, returning to school.
- Training attendance continues to be monitored and reinforced.
- The Leadership Academy for new supervisors was successfully piloted this year and received very positive reviews.
- Supervisory continuing training is now consistently implemented on a trimester schedule.
- Technical Training Programs received INPO Accreditation and the Operations Training Program had been reviewed but not yet officially informed of the results at the time of this evaluation.
- Operations Training was perceived to be greatly improved because of the quality of the instructors and the training presentations. Rotational assignments for some active licensed personnel as instructors and crew mentors were contributing to these perceptions.
- The Points System for Engineering training was identified by many interviewees as an excellent way of obtaining more technical training, often off-site, in highly relevant environments, e.g., other plants, vendor locations.
- The Fleet is preparing to put together a 4 day Human Performance Nuclear Worker Camp for all new employees. Existing employees will receive Human Performance training in their continuing training courses.

Areas in Need of Attention

- Although training activities have been described as greatly improved there are still some areas that require additional management attention.
  - Individuals describe a lengthy process to obtain OJT and TPE qualifications in some of the crafts. This is a line function and it is often difficult to balance work schedule and completions of these qualifications.
  - Concerns have been identified about the transition to a Fleet wide process for the qualifications of contractors. Currently, Davis-Besse has a lengthy, but more rigorous process than Beaver Valley or Perry, and since this is a line function, without any oversight from Training, several individuals described this shorter process as potentially problematic.
- Although some staff development efforts do occur, they are still not part of a systematic program of professional development. In fact, individuals are identified for FE TALENT Coaching and Development courses specifically outside the performance management process.
- Performance evaluations still need to be conducted consistently across the organization. Some personnel describe an annual, or more frequent, evaluation while others describe still not having had an evaluation. Some individuals cannot identify the criteria that they are evaluated on, e.g., safety.
- In order to be effective, the evaluation process needs to be tied to a professional development plan that will be implemented over a defined period of time. Activities may include additional training or oversight as a function of the evaluation.
- Overall, perceptions regarding the implementation of the performance evaluation process at the Station were still uniformly low.

Performance Objective 5.5: A questioning attitude at all organizational levels exists.

Observations

- Employees at the Davis-Besse Station generally are not inhibited in raising safety concerns.
- Behaviors associated with a questioning attitudes are perceived more positively now than they were in the 2004 Independent Assessment.
- Individuals in the Site Projects, Radiation Protection, Design Engineering and Regulatory Compliance Work Groups believed that they could openly challenge decisions made by management to a greater extent than individuals in the other work groups

Areas in Need of Attention

- The behaviors associated with a questioning attitude still need to be more consistently performed at the Davis-Besse Station.
  - A general reluctance to pushback and challenge Senior Management was still not observed during this evaluation.
  - Individuals tend to be reluctant to initiate communication and often are not engaged in meetings with individuals from higher organizational levels.
  - Seeking out and incorporating information from OE in other organizations and industries was not generally observed to occur.

Areas for Improvement for Safety Culture Characteristic 5

- Efforts to improve Davis-Besse's performance by learning from its past performance, from industry performance, from internal and external assessments, and from the day-to-day implementation of its own programs and processes, still are not effectively implemented nor recognized to be of high value to the organization.
    - The lack of self-criticality and the acceptance of low standards and expectations are generally believed to be behavioral indicators of a non-learning organization. Efforts at Davis-Besse are needed to increase the awareness of all levels of the organization as to the importance and value of these behaviors and to initiate efforts to develop more internally driven standards.

1.5.6 A process for establishing a strong and effective SCWE is in place.

This characteristic was rated as EFFECTIVE.

Strengths

- Activities, this past year, to communicate the role of the ECP have been effective. All individuals interviewed were aware of the Employee Concerns Program (ECP). *This was an Area for Improvement identified in the 2004 Independent Assessment for Safety Culture and SCWE. Corrective actions to increase awareness and information about the ECP have been effective.*
- The site ECP Representative has had an increased presence in the field.
- The collateral duties of the ECP Representatives have been removed.
- Overall the responses on the SCWE Survey questions have significantly increased in a positive direction from the data obtained in 2004. The results of the most recent SCWE Survey conducted by Davis-Besse in October 2005 reflect the same directionality of results that were obtained in this evaluation.
- Most individuals interviewed expressed the belief that they could raise safety concerns without fear of retaliation.
- Almost all Davis-Besse employees (94%) understand that they are responsible for identifying problems.

Areas in Need of Attention

- Several individuals continue to express concerns about the ECP that may reduce its effectiveness:
    - Anonymity when using the program;
    - Timeliness of response to issues by the program; and
    - The perceived lack of authority of the program to influence change.
- Efforts by the ECP to work with the line in resolving concerns are positive, but the Program needs some guidance, maturity and experience to enhance its effectiveness.
- Concerns about retaliation still exist in some organizational groups and in particular seem problematic in Operations and Security.

- The FENOC Corporate Office does not currently have an ECP Representative. The individuals in this part of the organization are responsible for driving and overseeing many of the programs and processes being implemented across the FENOC sites.
- The independence of the SCWERT may be compromised by the involvement of line management in the review of individuals within their own organization.
- Many individuals still believe that the establishment of a strong and effective SCWE at Davis-Besse is challenged because of several factors, e.g., negative corporate memory of operations events, trust issues related to significant events of the past, lack of management accountability, inconsistent implementation of policies, and a lack of responsiveness to identified issues.
- The process for ensuring and sustaining a strong and effective SCWE at Davis-Besse needs to be enhanced.
    - The organizational stature, visibility, and authority of the ECP reduce its effectiveness not only in perception but by hierarchical barriers for communication and interaction on the part of staff.
      This area was identified as an Area in Need of Attention in the 2004 Independent Safety Culture and SCWE Assessment. Corrective actions as evaluated by the Independent Assessment Team appeared to be limited and incomplete in scope.
    - The Executive and Senior Leadership Teams need to be more receptive to alternative ideas concerning the non-alignment of the Security and Operations Groups on several issues significant for SCWE.

Areas for Improvement for Safety Culture Characteristic 6

None

1.6 Effectiveness of FENOC Internal Assessment Process for Safety Culture and Safety Conscious Work Environment

The monitoring and assessment of Safety Culture at FENOC facilities is primarily governed by two Nuclear Operating Business Practices: Safety Culture Monitoring (NOBP-LP-2502, 3/2/04) and Safety Culture Assessment (NOBP-LP-2501, Rev. 2). Davis-Besse also monitors the health of the Safety Conscious Work Environment (SCWE) through an annual survey and on a quarterly basis through Performance Indicators. Data from the SCWE monitoring is used as input to the overall Safety Culture Monitoring and Assessment at the facility. The Safety Culture Monitoring Business Practice is intended to be performed on a quarterly basis, while the Safety Culture Assessment Business Practice is intended to be performed nominally every two years. Over this assessment period, Davis-Besse has performed these monthly and annually, respectively, in accordance with the site's Operational Improvement Plan.

Additionally, the Nuclear Quality Assurance organization conducts an annual assessment of Davis-Besse's Safety Culture.

This is an evaluation of the 'Annual Safety Culture Assessment of the Davis-Besse Nuclear Power Station' Draft Document, November 2005.

This area was rated as MARGINALLY EFFECTIVE.

Strengths

- Overall the process considers a wide variety of data sources, with the aim of establishing convergent validity among those sources. Multiple attributes are considered in the assessment of each criterion. Such an approach ensures that the results are complete and more accurate than an approach that only considers single sources of information or attributes.
- Safety culture is assessed via multiple mechanisms within the organization and is assessed and monitored on a continuing basis, e.g., NOBP-LP-2501 and 2502, Oversight Assessment of Safety Culture, SCWE employee surveys.
- The results of the Davis-Besse SCWE Survey conducted in October 2005 were very similar to the SCWE results obtained in this Independent Assessment. Both surveys indicated improvement from the results obtained in 2004.

Areas in Need of Attention

- The results of the Davis-Besse Safety Culture Assessment are described as convergent with results of the 2005 Oversight Assessment, the October 2005 SCWE Survey, surveys of employees and overall management discussions. However, those other sources of information were used in the Assessment and so it is not remarkable that they are convergent.
- NOBP-LP-2501, Rev. 02 identifies the use of the Oversight Assessment for the Davis-Besse Safety Culture Assessment. It is unclear then how the Oversight Group can perform its role and provide an independent evaluation of the site's assessment.
- The attributes and the standards for their ratings of red, yellow, white, and green need to be re-evaluated. Examples include:
    - Understanding that safety is the highest priority was assessed as green. The data indicated that 74% of the employees believe that Station Management does not put cost above safety. While an improvement from previous assessments, there is still more than 25% of the population that does not agree with the statement.
    - Individual error rate was assessed as green. While it may conform to the way the attribute is measured, given the human performance issues that have been identified in the recent months what value does the rating have in helping to improve performance?
    - The number of CRs per person per group was assessed as green. Given the issues that have been identified within the Security and Operations Groups how can this be useful information?
- The approach is an elaborate, fairly mechanical and quantitative assessment of safety culture which lends itself to a 'tick mark' mentality, e.g., observations completed, benchmarking visits conducted, performance appraisals completed. A more concerted focus on what is done with the information collected from the observations, visits, etc, through the assessment of behaviors and attitudes, two critical indicators of safety culture, will facilitate the recognition of improvement opportunities.

- In cases where less objective measures are used to assess the attributes, it is not clear what mechanisms are in place to validate the information obtained, e.g., personal initiative, organizational commitment and shared success criteria, cross-cultural teamwork. For these measures, it is important that multiple sources of information e.g., employee interview/surveys, observations, management input, are considered.

Areas for Improvement for Internal Assessment

- The overall rating of White on Davis-Besse's Annual Safety Culture Assessment is noted to be a conservative one as their actual numerical calculation was equivalent to a Green rating. While the team recognizes this as a positive step, the results of the 2005 Independent Assessment are more critical of the current status of Davis-Besse's Safety Culture and Safety Conscious Work Environment and have provided an overall assessment as Marginally Effective.

1.7 Summary

Overall, the Team found that the Davis-Besse Organizational Safety Culture and Safety Conscious Work Environment had improved since the last independent assessment conducted in November 2004. While several initiatives designed to facilitate and promote the behaviors important to a positive safety culture and safety conscious work environment were observed in the course of the evaluation, the results of the assessment also indicated that three of the six safety culture characteristics were not yet fully effective at the Station.

The results from this assessment were evaluated against the six characteristics identified to be important for the promotion of a positive safety culture and the following conclusions were identified. Based on the definitions in Davis-Besse Business Practice procedure DBBP-VP-0009, "Management Plan for Confirmatory Order Independent Assessment," Revision 2, dated April 26, 2005, the Team gave an overall rating for the 2005 Independent Assessment of the Davis-Besse Organizational Safety Culture (including Safety Conscious Work Environment) of **Marginally Effective** and improving.

Davis-Besse Business Practice procedure DBBP-VP-0009 defines:

Effective - Assessment results identified one or several Areas for Improvement and no or a few Areas in Need of Attention. **Performance, programs and processes are sufficient to obtain the desired results with consistency and effectiveness.**

Marginally Effective - Assessment results identified more than several Areas for Improvement and several more Areas in Need of Attention. **The basic intent of the program or process is achieved, however, the performance, program or process is challenged to obtain the desired results with consistency and effectiveness. Prompt management action is required.**

1. Safety is a clearly recognized value in the organization. Rated: Effective

Safety is a clearly recognized value in the organization as demonstrated by its presence in documentation, communication, conservative decision-making and the allocation of resources. Challenges still exist primarily in the internalization of the behaviors necessary to ensure consistency in safety performance.

2. Accountability for safety in the organization is clear. Rated: Marginally Effective

Management's actions concerning safety issues are generally driven from the top down limiting accountability and ownership at lower organizational levels. Activities are often perceived to be initiated as reactions to external requirements and standards are primarily imparted and driven from outside the organization.

3. Safety is integrated into all activities in the organization. Rated: Effective

Continued improvements in the quality of documentation and processes, in the coordination of work management, and in the knowledge and understanding of work processes have contributed to the integration of safety into more activities in the organization.

4. A safety leadership process exists in the organization. Rated: Marginally Effective

While improvements in values and attitudes were observed since the 2004 Independent Assessment, they are generally back to the levels obtained in the 2003 Independent Assessment. Multiple differences were identified within and between groups in much of the data collected indicating a non-alignment among the leadership team with respect to their effectiveness in implementing the desired behavioral changes.

5. Safety culture is learning driven in the organization. Rated: Marginally Effective

Efforts to improve performance through organizational learning behaviors are still not effectively implemented nor recognized to be of high value throughout all levels of the organization. The lack of self-criticality and acceptance of externally driven standards and expectations are not indicators of a learning organization.

6. A process for establishing a strong and effective SCWE is in place. Rated: Effective

Overall the responses on the Davis-Besse October 2005 Survey and the survey used in this Independent Assessment have significantly increased in a positive direction from the data obtained in 2004. Efforts by the ECP to communicate its role and provide increased presence in the field have been effective. Issues remain with the ECP around anonymity and concerns about retaliation still exist in some organizational groups.

OVERALL CONCLUSION

The overall rating for the 2005 Independent Assessment of the Davis-Besse Organizational Safety Culture (including Safety Conscious Work Environment) is **Marginally Effective and improving.**

In evaluating the effectiveness of the Annual Safety Culture Assessment of the Davis-Besse Nuclear Power Station, Draft Document, November 2005, the Team rated the results of this process as **Marginally Effective**. The overall rating provided by the Davis-Besse Assessment process was evaluated to be less critical than the results of this Independent Assessment.

1.8 References

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International Nuclear Safety Advisory Group, Safety Series No. 75-INSAG- 4 (1991). "Safety Culture", International Atomic Energy Agency, Vienna, Austria.

International Nuclear Safety Advisory Group, INSAG-15 (2002). "Key Practical Issues in Strengthening Safety Culture", International Atomic Energy Agency, Vienna, Austria.

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1.9 Team Member Biographies

Following are brief biographies of the team members.

Sonja B. Haber, Ph.D., Psychology, Team Leader (President, Human Performance Analysis, Corp.)

Dr. Haber has been conducting work in the area of human performance analysis for over 30 years. She has been involved in the evaluation and intervention of human performance in various applications. For the last 18 years, Dr. Haber's work has been primarily in the nuclear industry, with an emphasis on the assessment and evaluation of safety culture. She has been extensively involved in conducting fieldwork for the U.S. Nuclear Regulatory Commission, the U.S. Department of Energy, the Canadian Nuclear Safety Commission, and the International Atomic Energy Agency. From 1992 - 1998 she managed and was significantly involved in work related to the organizational and programmatic aspects of training of nuclear power plant personnel in countries of the Former Soviet Union, specifically in the development and transfer of technology related to the Systematic Approach to Training. This work also included cross-cultural analysis of organizational issues in the areas of safety culture and management and supervisory skills. Most recently she has been conducting safety culture evaluations in various nuclear facilities, providing consultation in organizational interventions including leadership and management training, enhanced communication skills, and developing performance measures for organization and management processes critical to safety culture.

Michael Stein (Sonalysts, Inc.)

Mr. Stein has over 35 years experience in the nuclear industry, including 20 years supervising power station operations in the U. S nuclear submarine program and almost 20 years supporting the U. S. commercial nuclear industry, DOE production reactor operations, power reactor operations in Countries of the Former Soviet Union, and international nuclear material safeguards. Mr. Stein's work experience has been focused on evaluation and performance improvement. As a DOE team member for assessing Savannah River Site (SRS) control room operators' readiness for restart, he evaluated control room crew team skills, technical knowledge, ability to diagnose failures, and use of procedures, assessed training and evaluation methodologies, and then mentored SRS staff as they implemented the SRS Peer Evaluator Program. For 15 years Mr. Stein assisted the U.S. NRC as a team member for evaluating licensee annual exercises and as a certified license examiner for operators of Westinghouse pressurized water reactors. Mr. Stein continues to support the DOE's International Nuclear Safety Program (INSP), with ongoing management consulting projects at the Armenia Nuclear Power Station and at VVER power stations in Ukraine. Mr. Stein works extensively with the International Atomic Energy Agency (IAEA), assisting with performance improvement projects for members of the Department of Safeguards.

Deborah A. Shurberg, Ph.D., Psychology (Human Performance Analysis, Corp.)

Dr. Shurberg has been working within the nuclear industry for over 17 years, focusing on human and organizational issues which impact facility safety performance. Dr. Shurberg's primary areas of expertise lie in the development and implementation of methodological tools useful for the evaluation and improvement of organizational functioning and in the assessment and evaluation of human resource practices critical to effective organizational performance. Dr. Shurberg also has significant work experience assisting in the transfer of training technologies and techniques proven effective in organizations that place a high degree of emphasis on safety. She has worked in nuclear organizations in North America, Europe, and countries of the Former Soviet Union. Her work in this area includes cross-cultural analysis of organizational issues, specifically in the area of organizational and safety culture and management and supervisory skills.

Aldo Capristo (Nuclear Management Company)

Aldo (Al) Capristo possesses 24 years of U.S. Nuclear Navy and Commercial Nuclear experience in varying increasing positions of responsibility. Mr. Capristo has expertise in the area of Employee Concerns Program elements, Regulatory Affairs, Quality Assurance / Assessment Program Improvement, Corrective Action Program, Organizational Development, and training experience. Mr. Capristo currently is the Business Services Manager for the Point Beach Nuclear Power Station. Mr. Capristo's nuclear employment and consulting experience includes: US Navy Submarine Service, Shoreham; Maine Yankee; Point Beach, Prairie Island, Monticello, Palisades, Duane Arnold, Cooper; Kewaunee, Vermont Yankee, San Onofre, Yucca Mountain project and Salem / Hope Creek .Mr. Capristo holds a BS degree in General Technology and a MBA from New Hampshire College. Mr. Capristo served for three years as co-chairman of the National Employee Concerns Program Forum and where he was active in the areas of employee protections, alternative dispute resolution and mediation.

Docket Number 50-346
License Number NPF-3
Serial Number 1-1449
Enclosure 2

ACTION PLANS TO ADDRESS AREAS FOR IMPROVEMENT
2005 INDEPENDENT ASEESSMENT
OF THE
ORGANIZATIONAL SAFETY CULTURE
(INCLUDING SAFETY CONSCIOUS WORK ENVIRONMENT)
AT THE
DAVIS-BESSE NUCLEAR POWER STATION

(6 pages follow)

ACTION PLANS TO ADDRESS AREAS FOR IMPROVEMENT (AFI)

2005 Independent Assessment of the
Davis-Besse Nuclear Power Station
Organizational Safety Culture (Including Safety
Conscious Work Environment)

COIA-SC-2005

Action Plans Reviewed and Approved by:

Barry S. Allen for M. B. Bezilla

DBNPS Vice President - Nuclear

2005 Safety Culture COIA Integrated Action Plan

The Action Plans contained in this enclosure were developed by the Davis-Besse Nuclear Power Station (DBNPS) to address the Areas for Improvement (AFIs) identified in the 2005 Independent Assessment of Safety Culture, including Safety Conscious Work Environment (SCWE).

The Confirmatory Order Independent Assessment (COIA) provided an independent and comprehensive review of the Organizational Safety Culture, including SCWE at the DBNPS. The Assessment Report identifies four (4) AFIs. These AFIs have been entered into the Corrective Action Program.

Overall, the COIA Team found that the Davis-Besse Organizational Safety Culture and SCWE has continued to improve since the last independent assessment. The results of the assessment also identified some areas where additional attention is needed to fully achieve ownership and accountability at all levels of the organization to sustain long term performance.

Recognizing that Safety Culture behavior and attitudes are not something changed in the short term, the COIA confirmed that actions which have been taken are continuing to show improvement. The 2005 assessment helps provide additional independent feedback on the effectiveness of the many short- and longer-term initiatives implemented over the last several years at Davis-Besse, including the specific actions taken in response to the 2004 COIA AFIs.

For the purposes of this Integrated Action Plan, the 2005 AFIs are placed into three categories. The first category focuses on the independent assessor's safety culture characteristics "Accountability for safety in the organization is clear" and "A safety leadership process exists in the organization" and includes the following two AFIs:

AFI COIA-SC-05-01 (CR 06-00109)

- A long-term strategy to ensure the organization's continued and sustainable commitment to safety still needs additional focus and development.
  - Management's actions concerning safety issues are generally being driven from the top down resulting in a lack of accountability and ownership.
  - Activities are perceived to be initiated as reactions to externally driven requirements.
  - Performance standards are largely externally driven and being imparted, not developed or internalized from within the organization.

AFI COIA-SC-05-02 (CR 06-00109)

- While improvements in values and attitudes have been observed since the 2004 Independent Assessment they are generally back to the levels obtained in the 2003 Independent Assessment during the long outage. Davis-Besse leadership behaviors

need to demonstrate continuing improvement and sustainability across all levels of the organization to ensure the desired outcomes. The top down style of management, previously identified, while effective for short-term results, will not result in long-term sustained success.

- The large number of differences identified within and between groups in much of the data collected in this evaluation indicates that a consistent message with respect to desired behavioral changes is still not being effectively communicated, understood or accepted throughout several parts of the organization.

Action Plan for AFIs COIA-SC-05-01 & 02

Prior to plant restart from the extended plant outage, Davis-Besse developed a comprehensive Cycle 14 Operational Improvement Plan to demonstrate its commitment to continue driving actions for continuous improvement and to anchor sustained performance in nuclear safety and plant operations during Cycle 14. One of the ten initiative areas in this plan is Continuous Safety Culture Improvement. Davis-Besse continues to implement the actions of the Operational Improvement Plan and this key initiative area, which includes periodic assessments of Safety Culture and SCWE. Through these assessments, Davis-Besse management maintains a watchful eye for early indications of potential areas needing attention.

Some of the more noteworthy Strengths identified in the 2005 COIA provide indication that a strong foundation for Safety Culture is being firmly established at Davis-Besse:

- Documentation exists and continues to be updated and revised that demonstrates the clear and high priority the organization places on safety, e.g., FENOC Safety, Safety Culture and SCWE Policies, Safety Culture Assessment Process.
- In general, personnel feel that avoiding responsibility for fear of being punished is not a desired behavior with the Davis-Besse organization.
- Almost all Davis-Besse employees understand that they are responsible for identifying problems, most individuals expressed the belief that they could raise safety concerns without fear of retaliation.
- Multiple mechanisms continue to exist to communicate the value of safety throughout the organization.
- A more consistent safety message is being communicated by management and understood and valued by the organization.
- Good examples of conservative decision making with respect to safety.
- Industrial safety messages and human performance strategies are documented and communicated daily during shift turnovers and Management Alignment and Ownership Meetings.
- Operating Experience information, both internal and external to the Station, continues to be distributed and communicated throughout the organization by various mechanisms, eg., turnovers, e-mails, pre-job briefs, work orders, DB TV, and training lesson plans.

Davis-Besse believes this feedback from the COIA, in most cases, is very consistent with the internal monitoring, surveys, and assessments performed by the Davis-Besse staff and provides positive feedback as to the effectiveness of the improvement initiatives over the past several years. Davis-Besse further believes there continues to be strong indications of a healthy Safety Culture and SCWE; however, FENOC and Davis-Besse management also recognize that there will always remain opportunities for continued improvement in these important contributors to sustained performance in nuclear, industrial, radiological, and environmental safety.

To address the areas for sustained safety performance improvement identified in the COIA report and other internal survey and assessment results, Davis-Besse is implementing the following actions to further enhance and drive long-term improvement:

1. Consistent with the action taken on the 2004 COIA and Davis-Besse's commitment for consistent and open communications with all levels of the organization, Davis-Besse will provide the opportunity for employees to hear a direct presentation of the results of the 2005 COIA on Organizational Safety Culture and SCWE. This presentation will be made by the Independent Assessment Team Lead, providing the opportunity for direct employee interaction with the Team Lead for questions and answers.
   (Action to be completed by February 15, 2006)
2. Following the 14th refueling outage, which begins in March 2006, Davis-Besse will begin a transition out of the recovery phase and the initiatives and actions of the Cycle 14 Operational Improvement Plan into a corporate objective to transform Davis-Besse into a top industry performer. The FENOC Business Plan and the FENOC vision of "People with a strong safety focus delivering top fleet operating performance" will be the foundation for future improvements at Davis-Besse. This vision relies upon a strong and sustained Safety Culture and a robust SCWE, and is based on adherence to corporate policy level safety commitments, and individual and management commitments to safety when performing each and every task. To set the course, Davis-Besse will include actions in the 2006 Davis-Besse site excellence plan, developed under the FENOC Business Plan, to further enhance and drive long-term safety performance improvement.
   (Action to be completed by June 30, 2006)
3. During the extended 13th refueling outage and the post-outage recovery period of Cycle 14, Davis-Besse senior leadership maintained a steady focus on day-to-day operations. Following Cycle 14 and completion of the 14th refueling outage, the Davis-Besse senior leadership team will begin a transition that will dedicate more of their time to the development and execution of longer-term initiatives focused and designed to achieve the transition of Davis-Besse from recovery to sustained operational excellence. This transition is intended to drive authority, accountability, and ownership to the appropriate levels within the Davis-Besse organization. Actions will be included in the 2006 Davis-Besse site excellence plan, which will be consistent with and implement the FENOC leadership style embraced in the FENOC Business Plan.
   (Action to be completed by December 31, 2006)

The second category of the Integrated Action Plan focuses on the independent assessor's safety culture characteristic of "Safety culture is learning driven in the organization." This category addresses the third AFI identified in the COIA:

AFI COIA-SC-05-03 (CR 06-00109)

- Efforts to improve Davis-Besse's performance by learning from its past performance, from industry performance, from internal and external assessments, and from the day-to-day implementation of its own programs and processes, still are not effectively implemented nor recognized to be of high value to the organization.
  - The lack of self-criticality and the acceptance of low standards and expectations are generally believed to be behavioral indicators of a non-learning organization. Efforts at Davis-Besse are needed to increase the awareness of all levels of the organization as to the importance and value of these behaviors and to initiate efforts to develop more internally driven standards.

Action Plan for AFI COIA-SC-05-03

Davis-Besse understands the importance of enhancing performance through a learning organization strategy and culture; one aspect of which is learning from both internal and external operating experience. To that end, Davis-Besse, along with FENOC, implements an Operating Experience program which gathers both internal and industry events and lessons-learned and disseminates that information to the appropriate organizations and individuals for evaluation of applicability and assessment of needed actions to address potential similar vulnerabilities.

Davis-Besse implements the FENOC Business Practice for self-assessments and benchmarking. To be effective and add value, self-assessments must be objective and critical, identifying improvement opportunities in both programs and program implementation. Benchmarking is a recognized method for the identification of gaps to industry top performers and is a fundamental component of performance improvement. Davis-Besse performed a significant amount of industry benchmarking in 2005.

Since restart, Davis-Besse has had a number of industry evaluations and also requested a number of on-site industry assessments to evaluate performance in several areas. These on-site assessments have provided valuable input into a number of performance areas and provided insight into establishing higher levels of standards and performance expectations. Davis-Besse recognizes the value and evaluates the information from many forms of industry benchmarking and assessment and implements change as part of a continuous improvement process. Further, Davis-Besse implements a self-assessment process that many times utilizes the experience of individuals from other FENOC locations and other utilities. To achieve the greatest value, Davis-Besse understands that assessments must be self-critical, identify instances where standards and expectations are not being met, and initiate actions to improve performance.

To further enhance the benefits of robust Operating Experience and Self-Assessment programs, Davis-Besse will implement actions for 2006 to:

1. Reinforce with section Operating Experience coordinators their role and responsibility to champion the use of Operating Experience internally within their sections. (Action to be completed by May 31, 2006)
2. Enhance discussion of Operating Experience in the morning Management Alignment and Ownership Meetings by periodically addressing relevant Operating Experience. (Action to be completed by April 30, 2006)
3. Reiterate the standards and expectations for rigor and criticality in the performance of self-assessments and section Integrated Performance Assessments, including the identification of any areas for improvement or negative trends and the initiation of Condition Reports to address such items. (Action to be completed by April 30, 2006)

The third category of the Integrated Action Plan focuses on the Davis-Besse annual safety culture tool used by Davis-Besse and on the implementation of the tool to critically assess the condition of the safety culture and SCWE at the facility. This category addresses the fourth and final AFI:

AFI COIA-SC-05-04 (CR 06-00110)

- The overall rating of White on Davis-Besse's Annual Safety Culture Assessment is noted to be a conservative one as their actual numerical calculation was equivalent to a Green rating. While the team recognizes this as a positive step, the results of the 2005 Independent Assessment are more critical of the current status of Davis-Besse's Safety Culture and Safety Conscious Work Environment and have provided an overall assessment as Marginally Effective.

Action Plan for AFI COIA-SC-05-04

The COIA questioned the effectiveness of the current tool being used to annually assess safety culture. This tool utilizes both qualitative and quantitative inputs to evaluate the strengths of attributes that contribute to a healthy safety culture. Employee behaviors, opinions and performance weigh into a number of the attributes that roll up to assess the overall health of safety culture at the plant.

1. FENOC and Davis-Besse will assess the Safety Culture and SCWE monitoring and assessment tools contained in the quarterly monitoring and annual assessment Business Practices to identify opportunities to enhance their effectiveness. This initiative will include utilization of the industry principles document defining essential attributes of a healthy nuclear safety culture. Results will be incorporated into the FENOC Safety Culture Monitoring and Assessment Business Practices. (Action to be completed by September 30, 2006)