Focused Area Self-Assessment (FASA) Template For The Inservice Testing (IST) Program

Rev 2

Station Name

Date of Assessment

Prepared By:_____
Name
Station IST Program Engineer

Approved By:_____
Name
Station Program Manager

Focused Area Assessment Plan for IST Program

Introduction and Assessment Period

This Plan provides guidance regarding the identification of objectives, methodologies, and evaluation criteria for a Focused Area Self-Assessment (FASA) of an IST Program, prepared in accordance with LS-AA-126-1001. This IST Program Assessment Plan is in support of the Exelon Nuclear priority of no program breakdowns.

Scope of Assessment

The purpose of an IST Program FASA is to determine if the IST Program at a given Exelon Nuclear site is being properly executed in order to provide high equipment reliability, ensure reactor safety, and comply with regulatory requirements. The IST Program implements the requirements of 10CFR 50.55a and the ASME OM code through ER-AA-321 and sub-tier T&RMs for all safety related pumps and valves. The IST Program FASA evaluates the execution of the IST program to these requirements.
In order to do this, the FASA Plan will define specific assessment objectives and evaluation criteria in each of the following program functional focus areas:

1. Procedural Compliance / Process Technical Rigor
2. Program Implementation Effectiveness
3. Program Continuous Improvement
4. Program Organization / Interface Issues
5. Program Compliance to Regulatory Requirements

The IST Program has identified specific program assessment objectives and criteria in each of these functional areas. These are included in Sections 1 through 5 of this Plan. It is the intent of the FASA to provide both broad based and in depth coverage in each of these functional areas using a “Vertical Slice” approach.

Reference Documents

1. LS-AA-126, Self Assessment Procedure
2. LS-AA-126-1001, Focused Area Self Assessments
3. ER-AA-1100, Implementing and Managing Engineering Programs
4. ER-AA-321, Administrative Requirements for Inservice Testing
5. ER-AA-321-1001, Inservice Testing Bases Document Format and Content
6. ER-AA-321-1002, Inservice Testing Program Plan Format and Content
7. ER-AA-321-1005, Condition Monitoring for Inservice Testing of Check Valves
8. ER-AA-321-1006, Inservice Testing of Motor Operated Valves
9. ER-AA-321-1007, Inservice Testing (IST) Program Corporate Technical Positions
10. ER-AA-321-1008, Inservice Testing 10 Year Interval Update
11. ER-AA-321-1009, Inservice Testing (IST) Program Performance Indicators
12. 10 CFR 50.55a, Codes and standards
13. ASME OM Code [Station Specific Code Edition/Addenda]
14. NUREG-1482, Guidelines for the Inservice Testing at Nuclear Power Plants
15. INPO Engineering Program Guide EPG-10, Inservice Testing Program

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Organization and Responsibilities

The following table identifies the proposed makeup of the IST Program Assessment Team that will be used to conduct the assessment at each station. Primary responsibilities are also noted but can be changed based on the specific station being assessed or the background of the personnel participating in the assessment.

Team Member	Position	Function	Specific Responsibilities
[Name]	FASA Site IST Engineer	FASA Team Leader	Manage FASA logistics, coordination, conduct of meetings and report preparation
[Name]	Corporate IST Engineering	Technical Assessor	Provide Corporate perspective for assessment to align initiatives and best practices. Will provide written input for the assessment report.
[Name]	Exelon IST Program Peer	Technical Assessor	Site Peer to provide an assessment of technical and programmatic areas. Will provide written input for the assessment report.
[Name]	Industry Peer	Technical Assessor	Will provide insight into technical and programmatic aspects of IST program with respect to their station. Will provide written input for the assessment report.
[Name]	Engineering Programs Manager	Site Assessment Manager	Manage the site specific assessment including resources, entrance and exit briefings, report issuance, etc.

It is recommended that additional personnel be included on the IST Program Assessment Team as required to ensure a thorough evaluation of FASA objectives. For example, when performing a FASA to evaluate a recent 10-year IST Program update, consideration should be given to including additional Programs or Plant Engineering personnel and other Site or Industry peers.

Deficiencies identified during the assessments will be documented in Condition Reports and resolved through the corrective action process. Recommendations for improvements that are agreed to by Site Engineering and Management will be identified in the assessment report issued by each site. Assessment reports will be prepared in accordance with LS-AA-126-1001.

Section 1 Assessment of Procedural Compliance / Process Technical Rigor

Note: Assessment objectives can have either quantitative or qualitative measures and associated criteria.

Assessment Objectives

1. Program scope
2. IST tables and bases documentation
3. Regulatory and procedural compliance with evaluation of deviations
4. Record keeping and retention

Assessment Methodology

1. Review Licensing Bases documentation (UFSAR, Tech Specs/Tech Spec Bases) for required components and their functional requirements
2. Review IST Program Plan tables and IST Bases Documents for errors (typographical) or ambiguities (unclear safety function descriptions, weak justifications for testing deferrals, etc.).
3. Review selected IST Program documents and procedures for compliance with 10 CFR 50.55a and ER-AA-321.
4. Verify IST Program document retention practices meet the requirements of ER-AA-321.
5. Review a sample of test reports for accuracy and completeness.

Evaluation Criteria

1. No missed scope with respect to the systems reviewed
2. No errors associated with tables or bases documents
3. No procedural compliance issues
4. Test records are legible and complete; no non-conformance with records retention requirements.

<u>Focus on Fundamentals</u>

Procedure Adherence
Technical Rigor
Configuration and Design Basis Control

Section 2 Assessment of Program Implementation Effectiveness

Note: Assessment objectives can have either quantitative or qualitative measures and associated criteria.

Assessment Objectives

1. Implementation of Pump testing requirements
2. Implementation of general Valve testing requirements
3. Implementation of Check Valve (CV) testing requirements
4. Implementation of Relief Valve (RV) testing requirements
5. Program backlog

Assessment Methodology

1. Review selected pump testing documentation
2. Review selected documentation regarding general testing requirements for Category A and B power-operated and manual valves
3. Review documentation for implementation of check valve testing
4. Review selected relief valve program documentation
5. Assess backlog and program action plans through Program Health Reports, corrective action processes, and open issues.

Evaluation Criteria

1. No issues identified with implementing procedures for pumps
2. No issues identified with implementing procedures for Category A and B power-operated and manual valves
3. No implementation or compliance issues with check valve testing
4. No implementation or compliance issues with relief valve testing
5. Backlog is identified and actions are being completed in a timely manner.

Focus on Fundamentals

Personal Responsibility & Accountability

Section 3 Assessment of Program Continuous Improvement

Note: Assessment objectives can have either quantitative or qualitative measures and associated criteria.

Assessment Objectives

1. Continuous program improvement
2. IST Program uses the Corrective Action Program to capture deficiencies and emerging trends
3. Program ownership

Assessment Methodology

1. Review recent revision of Basis Document and Program Health Report for examples of continuing improvement and program ownership (i.e. clarifications, typographical fixes) and other program changes
2. Review IRs for the IST Program; verify effectiveness and timeliness of corrective actions.
3. Review recent IST Program OE for applicability to Site IST Program
4. Discuss with program owner how repetitive tasks (i.e. searches, problem resolution, scope control) are performed.

Evaluation Criteria

1. Program owner recognizes areas for continuous improvement and is not stagnant
2. Corrective actions identified correct the issue to prevent reoccurrence and are completed in a timely manner proportional to the safety significance of the issue
3. OE is reviewed and addressed appropriately
4. Program owner gives a sense of being aware of repetitive tasks and has command over the program in the details

<u>Focus on Fundamentals</u>

Assertive Engineering
Condition Reporting & Resolution

Section 4 Assessment of Program Organization / Human Performance / Interface Issues

Note: Assessment objectives can have either quantitative or qualitative measures and associated criteria.

Assessment Objectives

1. Organizational duties related to the IST Program are clear
2. Program interface
3. Overall strength of program

Assessment Methodology

1. Compare ER-AA-321 and T&RM duty requirements with station organization procedures/ process diagrams
2. Through IR or other documentation, assess program interface strength with operations, maintenance and engineering. Interview system engineers to evaluate IST knowledge of where to find information.
3. Evaluate Program alignment with INPO Program Excellence Guide

Evaluation Criteria

1. No gaps in program organizational duties
2. Program interface and knowledge is strong with support groups
3. No significant gaps or areas of concern when compared to the INPO Program Excellence Guide

Focus on Fundamentals

Teamwork
Sense of Urgency & Results Oriented

Section 5 Assessment of Program Compliance to Regulatory Requirements

Note: Assessment objectives can have either quantitative or qualitative measures and associated criteria.

Assessment Objectives

1. Compliance with regulatory requirements

Assessment Methodology

1. Review SER from last program update for compliance including relief requests
2. Cold shut down and Refueling outage justifications are in alignment with guidance provided in NUREG 1482
3. Determine if the NRC Resident Inspector has any concerns

Evaluation Criteria

1. No non-compliance issues with the program implementation or regulatory requirements

Focus on Fundamentals

Procedure Adherence
Technical Rigor

List of Significant Industry Issues
Associated with IST Program

- INPO Engineering Program Guide EPG-10
- NUREG 1482 Rev 1. (January 2005)
- OE22872 - Inappropriate Use of Pump Performance Data for Establishing and Maintaining ASME Code Pump Reference Values and Acceptance Criteria (Calvert Cliffs)
- OE28625 (04/20/2009) - (Byron) - Missed Inservice Testing (IST) Surveillance for the Block Valve for the Pressurizer Power Operated Relief Valve
- OE29631 - Misapplication of ASME Class 1 Pressure Relief Valve Test Frequency (Nine Mile Point)
- OE29858 - Deficiency in Warehouse Storage of Relief Valves (Harris)
- OE29869 - Check Valve Failure Discovered during Radiographic Examination (Crystal River 3)
- NER NC-09-033 Yellow, IST Program Scheduling Deficiencies for ASME Code Testing of Class 2 and 3 Relief Valves
- NER NC-09-037 Yellow, (10/27/2009) Technical Specification Required Shutdown due to Inboard Isolation Valve Packing Leak (LaSalle Unit 2)
- NER NC-09-038-Y Yellow, Fleet-wide Valve Maintenance Issues Resulting in Lost Generation and Outage Extensions
- Additional identified OE

INPO EPG Attachment A (Interview Questions)

Program Ownership

1. Who has overall responsibility for implementation of control of the Inservice Testing Program? (Ask different personnel.)
2. Describe the responsibilities of an individual or a designated team that has accountability for the overall effectiveness of the Inservice Testing Program.
3. How is the Inservice Testing Program staffed? What are the individual's qualifications? What is the depth of the backups?
4. What is your background, length of service with the current utility, length of service as the IST Program Manager?
5. Is your position considered a full time equivalent? If not, how many hours a week are expended to perform program duties? Would you describe your program work backlog as diminishing, stable or growing?
6. Does your utility participate in OM Code meetings, NMAC Pressure Relief Devices Users Group , Inservice Testing Owners Group (ISTOG), or other related groups? Who is the representative? Do you receive updates from the meetings?
7. Is there a single station document that describes all elements (administrative, engineering, operations) of the Inservice Testing program?
8. When was your last observation of a test or inspection with maintenance or operations personnel?
9. Have you detected degradation on components as the result of inservice testing activities? What was the root cause of the degradation? Do you have long-term plans to address the degradation?
10. Are there margin issues with any of the IST components…have these caused an operational impact? What are the corrective actions to address margin issues?

Management Interest/Support

1. When was the last presentation to the management team concerning the status of the Inservice Testing Program?
2. What were the major issues that were defined to the management team?
3. What performance indicators do you use to gauge the effectiveness of the IST program …how do you know that the program is “working”?
4. Do you monitor the status of program corrective actions?
5. Are there any known organizational or personnel changes in the near future that will impact your organizations ability to support the station’s IST program?
6. Do you have the support of station management or interfacing departments to resolve the major issues? If so, provide an example of a recently resolved major issue.
7. When was management observation or assessment of an IST activity last performed?

Program Issues/Status

1. Do you have program health reports? Are the last three available for review? (If they have KPIs, are any of them increasing or are they constant at high values?)
2. If other departments own maintenance or surveillance procedures relating to Inservice Testing, do changes to those procedures receive Inservice Testing engineering review?
3. What are the current open program unresolved inspection, or assessment issues? Define the date initiated, action to date, and current action party.
4. What are the top three Inservice Testing equipment challenges? Who has what action to resolve?

Engineering Documentation

1. Do you have a current IST program basis document?
2. Does your design change process ensure changes receive appropriate Inservice Testing review for those items that impact Inservice Testing?
3. Is program documentation (e.g. manual, notebook, procedures) maintained current?
4. Is documentation available that specifies equipment design basis limits?

Corrective Action Program

1. Have you reviewed the corrective action program for Inservice Testing program activities and equipment?
2. Are corrective actions timely? What is the average age? Are schedules appropriate for condition? How often and how long are actions deferred?
3. Is there a common theme among the corrective action program documents?
4. Can you retrieve all the corrective action documents or engineering analyses related to a specific issue?
5. Are issues related to Inservice Testing identified at an appropriate threshold and entered in the corrective action program? Can you provide examples?
6. Are corrective action documents initiated for degrading conditions? Failed tests?

Audits/Assessments/Benchmarking

1. When was the last time the plant had an IST self-assessment?
2. Are periodic Inservice Testing self-assessments being performed?
3. If the utility owns more than one nuclear plant, how often do Inservice Testing personnel get together to exchange ideas and information?
4. Have any members of the team been involved in recent and regular benchmarking? If so, who and when?
5. Is there a site "Continuous Improvement Team" with members from all site groups that meets regularly to discuss site issues and trends?
6. When was the last time your IST program manual was reviewed for accuracy?

Industry Issues and Operating Experience

1. Do program personnel attend meetings to stay current on industry issues?
2. Describe current program challenges and the station Inservice Testing Program approaches to those issues.
3. What is the current approach and game plan for resolving current industry issues?
4. Define two specific improvements that have been implemented in your program as a result of a recent benchmarking trip.
5. Are IST personnel receiving and reviewing OE from the station OPEX program?

INPO EPG Attachment B (Precursors to Declining Program Performance)

The following is the INPO EPG used to identify areas that may indicate overall Inservice Testing Program weaknesses and that are potential precursors to declining performance of the program.

Program Ownership/Management

- Program ownership is unclear, or owner has changed multiple times within a short period of time.
- Responsible program owners and implementing personnel have limited knowledge or experience with the program.
- Program ownership is unclear, and the Inservice Testing Program document is weak.
- Long-standing Inservice Testing issues exist.
- Personnel in engineering positions lack appropriate experience in Inservice Testing.
- Current plant and industry issues are seldom communicated to management personnel.
- Key assigned personnel do not have appropriate qualifications, training, and experience or a previous program mentor.
- The program relies on vendor or contractor input and performance, and oversight is limited and not critical (ownership, long-term station maintenance).
- The program owner is not familiar with current industry generic issues.

Program Issues/Status

- Program or system key performance indicators (KPIs) have improved little over time.
- Adverse indications have occurred (over time) in the following areas:
  - number of open inservice testing related condition reports
  - number of components on increased test frequency
  - problems frequently analyzed away as opposed to eliminated

Management Interest/Support

- Management interest and oversight is minimal and cursory.
- The program is not being challenged.
- Long-standing issues are not resolved.
- Actions to equipment with degrading trends is untimely.
- Few requests are submitted for follow-up on industry issues affecting the program.
- Interfacing station organizations and personnel provide insufficient support.

- Staffing is insufficient and inappropriately organized to support required program functions.

Current Inservice Testing System/Equipment Issues

- Adverse trends continue on known and identified equipment challenges.
- Repetitive equipment failures occur without written action plans to correct conditions.
- Results of periodic pump full flow tests are not assessed to determine pump degradation.
- Numerous Inservice Testing component corrective maintenance activities extend beyond the last refueling outage.
- Corrective actions have been ineffective at fixing the problem.
- The material condition of Inservice Testing equipment does not meet industry expectations.

Engineering Documentation

- Engineering documentation is difficult to administer or retrieve (tools).
- Documents that show compliance with regulatory requirements are incomplete.
- The program/design basis is weak or is not established.
- The scope of open issues is not well defined.
- Change processes are in place without hooks to involve Inservice Testing personnel.

Corrective Action Program

- Adverse trends continue on known and identified corrective actions.
- Corrective maintenance activities for Inservice Testing equipment are deferred repeatedly.
- Abnormal or degraded conditions associated with the program are accepted (norm).

Training

- Plant engineers are insufficiently trained and do not have the tools to recognize issues that could adversely impact the Inservice Testing Program.

Audits/Assessments/Benchmarking

- Assessment findings are frequently reversed or disregarded.
- Interaction with other organizations or peers is infrequent.

- Self-assessments are not frequently performed or do not focus on recent program challenges.
- Self-assessments lack industry involvement or review of recent industry events or related activity.

Industry Issues/OE

- Program personnel have not reviewed recent operating experience.
- There is no demonstrable evidence of industry involvement or monitoring to ensure that current and emerging issues are understood and evaluated for station impact.