

HOW AND WHEN WILL SELF-ASSESSMENT IMPROVE MAINTENANCE OF CANDU PLANTS - EVALUATOR'S VIEW.

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Abstract

Learning organizations use self-evaluation programs to compare their actual performance with their management's expectations and industry standards. In general, self-evaluations identify areas needing improvement. Self-evaluation activities in maintenance departments include self-assessments, management monitoring observations, root cause analyses, event investigations, benchmarking, use of operating experience, self-checking, and problem reporting systems. In Ontario Hydro Nuclear (OHN) we have used almost all forms of self-evaluation with mixed success. However, we did not use self-assessments. With emphasis on excellent maintenance this powerful form of self-evaluation is being introduced to all our plants. Because of its recency and relative inexperience with it, this paper is focused on self-assessment. The paper provides the author's perspective on how a self-assessment program would be evaluated by an independent internal evaluation and what attributes should be in place in order for maintenance departments to succeed in the implementation and successful continuation of the program.

Self-Assessment.

We in OHN are striving to improve our performance and achieve respectable ratings from independent internal and external evaluations. We have been adopting some new management processes and programs. One of the most significant ones is a self-assessment program. Those of you who are familiar with the OHN history know that over the years we tried to introduce many new improvement programs but the expected results almost never met the management's expectations. Naturally, our staff have developed a skeptical attitude towards any "new" management program or process. It is not the objective of this presentation to analyze why

those programs mostly failed. However, it is correct to say that the introduction, implementation and management support of those programs were not well prepared, planned and followed up on. Conditions in OHN have changed. We now have a firm leadership and a clear focus. In my presentation I want to explain the role of self-assessment programs which are being introduced in all three our plants: Bruce, Pickering and Darlington and I want to outline how an independent evaluation of these programs would establish if the program is effective and has a good potential to contribute to the excellent performance of the maintenance department.

My interest in this topic goes back to 1996. For a number of years I have been involved in Quality Assurance (QA) auditing and surveillance. I was on INPO, OHN Peer Evaluations and IIPA evaluating maintenance. The topic of self-assessment immediately raised my attention. The question was how self-assessment related to assessments done by the Station QA Department. I approached the INPO and was given names of three US plants that have been assessed excellent and having a strength in the area of self-assessment. These plants were: B.H. Robinson NPP, Surrey NPP and Palo Verde NPP. Subsequent phone conversations and information exchanges with the responsible personnel gave me a solid picture how these excellent plants deal with the self-assessment programs. That information coupled with my personal experience with QA assessments formed a basis for this presentation.

To have a common understanding of the language used in the presentation, here is a list of definitions:

Assessment: A documented activity, performed by one or more qualified individuals, which objectively evaluates the performance an activity, process, or program.

Self-Assessment: The critical evaluation of an activity, process, or program performed by the

individual or organization accountable for the work, or,

Assessment of the performance, efficiency, and/or compliance of an individual or of an organization ... for the purpose of identifying opportunities for improvement of performance, efficiency, and/or compliance.

Performance-Based Assessment: Focus on results through the evaluation of factors affecting plant/organizational performance by observing activities in progress, interviews of personnel, or review of documentation for technical content.

Compliance-Based Assessment: Focus ensuring regulatory requirements are met, primarily through review of completed documentation.

Benchmarking: A technique that compares Ontario Hydro Nuclear programs and performance with best practices. This can be conducted outside nuclear industry as well as inside. Benchmarking is accomplished through use of peer visits, WANO/INPO Good Practices, et c.

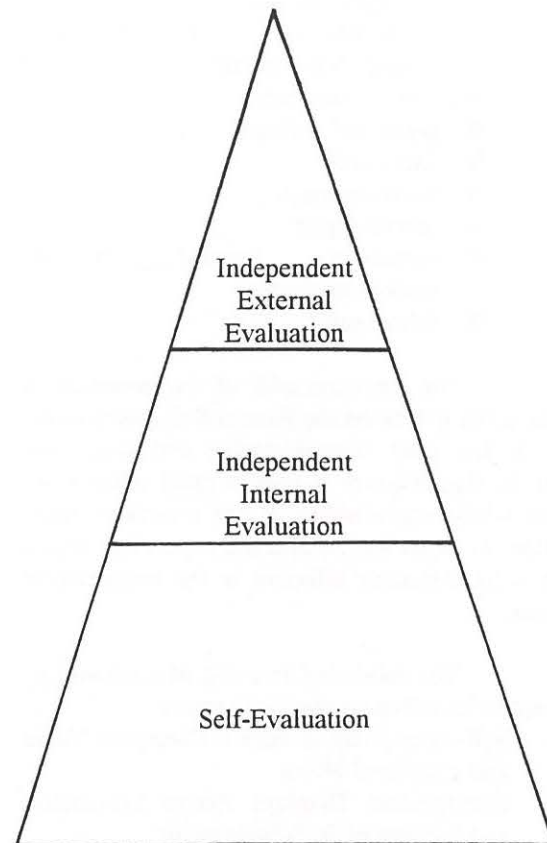
Peer Visits: A form of benchmarking where personnel from OHN visit another company to observe their programs and performance, or another company's personnel come to OHN to observe our programs and performance and then provide critical feedback. This includes exchange visits between Bruce, Pickering and Darlington Personnel.

Monitoring: The process all personnel use to compare performance and programs against expectations. This includes management observations, individual observations, self checks, logs and status reporting.

Independent Internal Assessments: Are performed by other station group independent of the group accountable for the activity or program.

Independent External Assessments: Performed by a group or organization outside the station. Examples are Atomic Energy Control Board audits, WANO evaluations et c.

A pictorial presentation of a relationship among different types of evaluation is in the following picture of so called "Evaluation Triangle".



The Triangle shows the hierarchy of evaluations and also gives a quantitative share of these evaluations. It also suggests that the bulk of weaknesses should be identified by self-evaluations before they are identified by independent internal and external evaluations.

It was mentioned before that this presentation would focus on self-assessment. Reasons given were: it is a powerful tool and it is new to OHN. In a broader sense there are four different levels of self-assessment. They are listed below along with some characteristics:

1. Individual workers
 - self-checking
 - reviewing performance and lessons learned
2. Management
 - review of work results
 - observation of activities
 - committee reviews
3. Condition Reporting/Trending

- identifying, documenting and correcting apparent problems and improvements
 - identifying and correcting underlying problems
4. Formal Self-Assessment
- plans and outlines
 - focus area
 - team approach
 - formal report
 - corrective actions/improvements tracked to closure
 - follow-ups

For the remainder of the presentation the focus will be on the Formal Self-Assessment. It is the most comprehensive and systematic mode that requires a concentrated effort from the whole organization. It has a broader scope than the other modes and the experience shows it to be extremely effective in the maintenance area.

The following is a list of attributes of successful self-assessment programs:

1. Self-Assessment Is both a Corporate Value and a Cultural Norm
2. Management Displays Active Leadership and Support of Self-Assessment
3. Assessment Plans Are Prepared, Are Proactive but Flexible Enough to Incorporate Emerging Issues
4. Assessors are provided Necessary Training and Resources to Conduct Assessments
5. Self-Assessments Findings Are Addressed in a Timely and Thorough Manner
6. Self-Assessment Results Are Shared With Others, both within the Station, with Other OHN Stations and Interested Predetermined External Organizations.
7. Follow-Up Reviews are Conducted to Verify the Effectiveness of Corrective Actions
8. Plant Events and Regulatory Problems Are Viewed and Evaluated as Failures of Self-Assessment.

In the following part the above attributes will be discussed one by one to highlight their significance. The importance of each of these attributes cannot be overemphasized. Without complete and determined adherence to these attributes, there will not be an effective self-assessment program

in our Maintenance Departments. It is safe to say that there would not be an effective self-assessment program anywhere in our stations if it does not have the above attributes.

1. Self-Assessment is Both a Corporate Value and a Cultural Norm.

If self-assessment is to become a corporate value and a cultural norm it has to be understood, internalized and practiced by all levels of station staff. Coaching and training play a significant role in achieving this attribute. INPO have realized the importance of self-assessment and the new revision of the Performance Objectives and Criteria from last year spells out the objective and the criteria for this area. A transcript of the pertinent section of this document is in the addendum to this presentation.

2. Management Displays Active Leadership and Support of Self-Assessment.

This attribute sounds like a platitude and can be made of any station activity that is to succeed. However, a new process is being introduced here which in the past belonged to the QA Department and the external auditors. There was no sense of ownership on part of the maintenance staff towards evaluations. In fact, evaluations/assessments were observed with an uneasy feeling of additional burden being added. That, in essence, negative attitude towards assessments has to be corrected. The only way to correct it is to have management at all levels visibly and convincingly supporting and leading the program. To achieve this attribute will require a concentrated effort on part of the upper management to cascade the commitment to the program down the line.

3. Assessment Plans Are Prepared, Are Proactive but Flexible Enough to Incorporate Emerging Issues.

It is essential for any management process to be planned. In this particular case it is also essential to have flexibility to change the plan when some new issues emerge. As an example, the H.B. Robinson plant, Unit No. 2 plan for 1997 has 23 self-assessments planned for their maintenance department and 150 self-assessments for the whole plant. It is a very ambitious program that will require a lot of determination and resources. The staff at H.B. Robinson are convinced it is achievable and will

help them retain their excellent ratings by INPO and SALP. The plan for the Maintenance Department should be approved by the Maintenance Manager and he should also approve changes to it.

4. Assessors Are Provided Necessary Training and Resources to Conduct Assessments.

It is the opinion of the author that this is the most important attribute. From his experience in QA it takes approximately a year to train and develop a good evaluator. The maintenance department would not have that amount of time to train a number of staff who would participate in self-assessments. However the QA experience underscores a need for some quality training and some focused experience. As a minimum, candidates from maintenance should receive training in field observations techniques, interviewing and report writing. The candidates, as much as possible, should participate in at least one evaluation done by experienced staff. Experience in self-evaluations and training should be recorded.

5. Self-Assessment Findings Are Addressed in a Timely and Thorough Manner.

Any self-assessment team or individual should produce an assessment report with clearly specified corrective actions, completion dates, and owners of the actions. An effort to complete the specified corrective actions must be a part of the work program and have allocated resources. The completion dates must be realistic and the action owners must be held accountable for timely completion of the actions same as for any other work assignment. If self-assessment and the resulting corrective actions are seen as something outside the work program, a competition for resources will be introduced which rarely results in corrective actions completion.

6. Self-Assessment Actions Are Shared with Others, both within the Station and with Other OHN Stations.

Self-assessment results have a great potential to help other station units and also other OHN Stations to focus on identified problems. It is quite common for various units within the same organization to have similar weaknesses. To a lesser degree it can be said about the same industries. That is the reason why there should be a formal system of sharing

self-assessment results within the station and within the entire organization.

7. Follow-Up Reviews Are Conducted to Verify the Effectiveness of Corrective Actions.

The author's experience from QA suggests a formal verification of effectiveness of corrective actions needs to be done. It does not suggest any ulterior motives of correction action owners, it merely proposes an independent evaluation of the results.

8. Plant Event and Regulatory Problems Are Viewed and Evaluated as Failures of Self-Assessment.

A truly effective self-assessment is a very proactive tool. This statement does not mean that there will not be any findings made by the independent internal and external assessments, but they should be minimized. A long term goal of self-assessment should, indeed, be zero findings from all other forms of assessment.

In conclusion, the author hopes, this presentation could serve beyond this Conference. Specifically, it could be useful as a standard for terminology, at least in the OHN self-assessment programs. It can be used by the internal independent evaluators when they face the task of evaluating the station self-assessment programs. Finally, the eight attributes can be used as a yard stick for measuring the success of self-evaluation programs.