PROBLEM IDENTIFICATION AND RESOLUTION

PROGRAM APPLICABILITY: 2515

CORNERSTONES: ALL

EFFECTIVE DATE: January 1, 2012

INSPECTION BASIS: A fundamental goal of the U.S. Nuclear Regulatory Commission's (NRC's) Reactor Oversight Process (ROP) is to establish confidence that each licensee is effectively detecting, correcting, and preventing problems which could impact cornerstone objectives. A key premise of the ROP is that weaknesses in licensees' problem identification and resolution (PI&R) programs will manifest themselves as performance issues which will be identified during the baseline inspection program or performance indicators (PIs) crossing predetermined thresholds. However, several aspects of PI&R are not specifically addressed by either the individual cornerstone performance indicators or other baseline inspections. These aspects are described in Section 71152-01 of this inspection procedure (IP).

LEVEL OF EFFORT: Completion of this IP is accomplished by conducting routine PI&R reviews, semiannual trend reviews, annual follow-up of selected issues, and biennial team inspections, as described in Section 71152-02 of this IP.

71152-01 INSPECTION OBJECTIVES

01.01 To provide for early warning of potential performance issues that could result in crossing thresholds in the ROP Action Matrix described in Inspection Manual Chapter (IMC) 0305, "Operating Reactor Assessment Program."

01.02 To help the NRC gauge supplemental response when ROP Action Matrix thresholds are crossed.

01.03 To provide insights into whether licensees have established a safety conscious work environment (SCWE).

01.04 To allow for follow-up of previously identified compliance issues (e.g., non-cited violations (NCVs)).

01.05 To provide additional information related to the cross-cutting areas that can be used in the assessment process.

01.06 To determine whether licensees are complying with NRC regulations regarding corrective action programs.

01.07 To verify that licensees are identifying operator workarounds at an appropriate threshold and entering them in the corrective action program.

71152-02 INSPECTION REQUIREMENTS

PI&R activities are reviewed in four locations within the baseline inspection program: routine reviews; semiannual trend reviews; follow-up of selected issues; and biennial team inspections as discussed in the following sections. Section 71152-02 provides the minimum inspection requirements. Section 71152-03 describes these requirements and their bases in more detail.

02.01 Routine Review.

The routine review of PI&R activities includes the following:

a. *Resident inspectors should screen each item entered into the corrective action program to select the best samples for follow-up. This review can be accomplished by attending daily corrective action program review board meetings; reviewing computerized corrective action program entries, or reading hard copies of corrective action program documents. The intent of this review is for inspectors to be alert to conditions such as repetitive, long-term, or latent equipment failures or cross-cutting components that might warrant additional follow-up through the semiannual trend review, annual follow-up of selected issues, biennial team inspections, or other baseline inspections. Inspectors should also be alert for adverse performance trends and risk-significant or repetitive equipment failures. Repeated failures to meet a technical specification limiting condition of operation or its associated action(s) may be an example of an adverse performance trend.* [C1]

b. Inspectors should verify that corrective actions commensurate with the significance of the issue have been identified and implemented by the licensee. An in-depth review of selected issues may be conducted in accordance with Section 02.03 of this IP.

c. Inspectors should verify that equipment, human performance, and program issues are being identified by the licensee at an appropriate threshold and entered into the PI&R program.

d. *Inspectors should review a sample of issues to verify that the licensee has appropriately classified the issue and has taken appropriate short-term corrective actions.* [C1]

e. Additionally, inspectors are expected to conduct reviews of PI&R activities during the conduct of other baseline inspection procedures.

02.02 Semiannual Trend Review.

Inspectors should perform a semiannual review to identify trends (either NRC- or licensee-identified) that might indicate the existence of a more significant safety issue. The scope of this review should include repetitive or closely-related issues that may have been documented by the licensee outside the normal corrective action program, such as: trend reports or PIs, major equipment problem lists, repetitive and/or rework maintenance lists, departmental problem/challenge lists, issues that challenge operators in performing duties (e.g., workarounds)*, system health reports, quality assurance audit/surveillance reports, self-assessment reports, maintenance rule assessments, or corrective action backlog lists.* [C1] Additionally, inspectors should also consider a review of corrective action documents which have been dispositioned to identify potential adverse trends in SSCs as evidenced by acceptance of long-standing non-conforming or degraded conditions. Such indicators could include "use-as-is" determinations, revision of engineering or operational acceptance criteria, reductions in design or operational margin, and repetitive work orders.

02.03 Annual Follow-up of Selected Issues.

The annual follow-up of selected issues ensures that the licensee has planned and/or implemented corrective actions commensurate with the significance of identified issues. Inspectors should select four to eight issues (i.e., samples) per year for an in-depth review. These samples can be reviewed throughout the annual assessment cycle. Inspectors should use the guidance contained in Section 71152-03.04 as an aid in selecting samples for review. *Inspectors should review the selected samples against the performance attributes contained in Section 03.06 of this IP.* [C1] The samples should generally be representative of multiple cornerstones of safety. Inspectors may select issues associated with safety culture components as samples. One sample shall be an in-depth review of operator workarounds (OWAs).

02.04 Biennial Team Inspection.

Inspectors shall perform a biennial team inspection of PI&R activities as described below. While performing these inspections, the inspector should be aware of any contribution that cross-cutting components make to performance deficiencies and consider insights that these issues may provide into the licensee's progress in

addressing any developing or existing cross-cutting themes.

a. *Inspectors should use risk insights to select issues that have been processed through the licensee's corrective action program since the last biennial team inspection. For a subset of the chosen samples, the scope of the review should be expanded to at least five years. Inspectors should use the guidance contained in Sections 71152-03.04b and 03.05 to select samples. To the extent available, the samples selected should include:*

   - *conditions adverse to quality that are documented in the licensee's corrective action program*
   - *cited or non-cited violations of regulatory requirements and other documented findings,*
   - *issues identified through NRC operating experience,*
   - *issues identified through industry operating experience that are documented in the licensee's corrective action program, and*
   - *licensee audits and assessments.* [C1]

b. Inspectors should review each selected issue using the performance attributes contained in Section 03.06 of this IP.

c. Inspectors should review the results of recent audits and self-assessments related to the licensee's corrective action and quality assurance programs. Inspectors should compare and contrast the indentified problems and corrective actions being taken as a result of these audits and self-assessments with the results of this inspection.

d. Inspectors should *review issues that pose challenges to the free flow of information for adequate resolution.* [C2] Employees should feel free to raise safety concerns, both to their management and to the NRC, without fear of retaliation.

e. Inspectors should perform assessments of the following items using the results developed from steps a through d:

   - the effectiveness of the licensee's corrective action program in identifying, evaluating, and correcting problems,
   - the licensee's use of operating experience information,
   - completed licensee audits and self-assessments, and
   - *the licensee's SCWE in order to identify any indications of reluctance to*

report safety issues by licensee personnel. [C2]

71152-03 INSPECTION GUIDANCE

The PI&R inspections should follow a performance-based approach to the extent possible. Inspectors should evaluate products and results of the licensee's corrective action program, including the use of operating experience, assessments, and audits. Inspectors should focus on the results associated with risk-significant issues. For the issues that are determined to be performance deficiencies, inspectors should evaluate the causes that relate to cross-cutting components for insights on performance. Inspections performed in accordance with this procedure should focus on the identification of problems and the effectiveness of corrective actions for risk-significant issues rather than the administrative aspects of the corrective action program and associated procedures. This section provides detailed guidance for the routine, semiannual, annual, and biennial PI&R reviews in addition to detailed guidance on sample selection, performance attributes, and documentation.

The following guidance should be used when reviewing a licensee's PI&R activities.

03.01 Routine Review.

One of the primary goals of the routine reviews is to verify that licensees are identifying issues at an appropriate threshold and entering issues into the corrective action program. This can be accomplished by having inspectors compare issues identified by the NRC during the conduct of the plant status and inspectable area portions of the baseline inspection program IPs with those issues identified by the licensee. The routine reviews allow for follow-up of selected issues and operational occurrences to ensure that corrective actions commensurate with the significance of the issues have been identified and implemented by the licensee.

During inspections and plant status reviews, inspectors should be alert for potential performance deficiencies as may be associated with equipment failures, inadequate maintenance work practices, personnel errors, inadequate risk assessments, management and emergent work control problems, procedure deficiencies, or non-compliances with procedures or regulatory requirements. When inspectors identify such conditions, they should examine the licensee's corrective action program records and/or attend licensee corrective action program meetings to verify that the licensee either previously identified and documented the conditions noted by the inspector or acknowledged the inspector's observations and entered those conditions into the corrective action program. Inspectors should be aware of any contribution that cross-cutting components make to these performance deficiencies and consider insights that these issues may provide into the licensee's progress in addressing any developing or existing cross-cutting themes. Inspectors should review and be aware of applicable 10 CFR 21 notifications and verify that the issues have been entered into the licensee's corrective action program for evaluation and disposition.

Degradation and failures due to aging effects, such as loss of material, loss of preload, or cracking, can occur. Plants with renewed licenses have established aging management programs (AMPs) to identify, address, and/or prevent aging effects prior to loss of intended function for those SSCs within the scope of the AMP. When degradation or failures occur that appear to be age-related, inspectors should, in addition to other routine review activities, determine whether the SSC is being managed by an AMP. If so, the inspector should also determine whether the activities in the AMP are adequate to identify the aging effect prior to loss of SSC intended function, and whether the licensee's corrective actions address the adequacy of the AMP. Consult with the regional license renewal point of contact for support in evaluating the adequacy of the AMP.

Inspectors should remain alert to problems or conditions that could have more than minor safety significance and for which the licensee's investigation, conclusions, and/or corrective actions appear to be inadequate. Inspectors should also review the circumstances associated with the licensee's investigation and disposition of the problem or condition to determine the reason(s) why the licensee's analysis and corrective actions were not adequate. Inspectors should review selected samples against the performance attributes listed in Section 71152-03.06, as applicable. Inspectors should determine if the licensee's identification, classification, or immediate and/or final disposition of a (significant) condition adverse to quality are in compliance with the licensee's procedures and/or regulatory requirements. The final disposition of conditions adverse to quality could reveal acceptance of long-standing non-conforming or degraded conditions as evidenced by "use-as-is" determinations, revision of engineering or operational acceptance criteria, reductions in design or operational margin, and repetitive work orders.

Most of the baseline IPs contain a requirement to inspect PI&R performance within the IP's subject area. The inspection of PI&R performance as part of baseline IPs is intended to ensure that over the course of an assessment cycle, a sample of PI&R performance in all cornerstones is obtained. As stated above, the primary focus of this portion of the PI&R review should be on verifying that licensees are identifying issues at an appropriate threshold and entering them into their corrective action program. However, inspectors are not precluded from routine review of corrective action documents once they have been dispositioned to identify potential areas for further inspection. Inspectors should consider PI&R insights when selecting baseline inspection samples and may follow-up on PI&R issues as part of a baseline inspection procedure's PI&R review.

03.02 Semiannual Trend Review.

Inspectors should consider emerging or existing cross-cutting themes during the semi-annual trend review to develop insights into the licensee's progress in addressing the themes. *Inspectors can perform this review by summarizing the results of the licensee's reviews and comparing those results to those identified by the NRC through the baseline or supplemental inspection program, including issues identified as a result of the daily review of corrective action program items discussed above. If a biennial team*

inspection is scheduled within six months of the semiannual review, the senior resident inspector could forward any concerns to the PI&R team. This information should be incorporated into the scope of the team inspection. [C1]

03.03 Annual Follow-up of Selected Issues.

Inspectors should choose a sample of four to eight issues per year for an in-depth review, as necessary, to verify that the licensee has taken corrective actions commensurate with the significance of the issue. These issues can be chosen from, but not limited to, information obtained from condition report reviews and reviews conducted as part of the baseline IPs. Samples may also be chosen from the guidance contained in Section 71152-03.05 of this IP. Inspectors may also select an issue that is tracked by a PI for which a threshold level change has yet to occur.

Issues Associated with Safety Culture Components. Following the issuance of a second assessment letter identifying a repetitive substantive cross-cutting issue (SCCI), the licensee's progress in addressing the issue should be evaluated as an annual sample. Inspectors should also consider one of the annual samples to be a follow-up on emerging or existing cross-cutting themes to develop insights into the licensee's progress in addressing the themes. The review should be scheduled at a time that will provide meaningful input to the assessment process.

Defects and Non-conformance. Defects and non-conforming materials, parts, or components may present a substantial safety hazard. Inspectors should consider using an annual follow-up sample to inspect defects or non-conforming conditions for compliance with 10 CFR 50, Appendix B and 10 CFR 21. Inspectors may refer to IP 36100, "10 CFR Part 21 Inspections at Nuclear Power Reactors" and IP 38703, "Commercial Grade Dedication" for additional guidance.

Maintenance Rule Issues. IP 71111.12, "Maintenance Effectiveness," instructs inspectors to evaluate corrective actions associated with equipment subject to the Maintenance Rule (10 CFR 50.65). This IP also instructs inspectors to consider applicability of 10 CFR 50, Appendix B, Criterion XVI for equipment subject to the requirements of 10 CFR 50, Appendix B, especially when the corrective action-related requirements of 10 CFR 50.65(a)(1) may not be applicable. If inspectors identify potential corrective action program weaknesses during implementation of IP 71111.12 that require additional focus beyond the expectations of IP 71111.12, inspectors may select the issue as a sample for PI&R annual follow-up.

Operator workarounds (OWAs). Action(s) taken to compensate for a degraded or non-conforming condition are considered OWAs. OWAs that can not be implemented effectively can increase the baseline core damage or large early release frequency. This review shall verify that the licensee is identifying OWA problems at an appropriate threshold, entering them in the corrective action program, and planning or taking appropriate corrective actions. The OWA sample should be evaluated considering all existing plant conditions including the cumulative effects of other OWAs.

The intention is to evaluate OWAs for mitigating systems to determine if the mitigating system function is affected or the operator's ability to implement abnormal and emergency operating procedures is affected. Inspectors should be cognizant of OWAs that (1) have not been evaluated by the licensee, (2) have been formalized or proceduralized as the long-term corrective action for a degraded or non-conforming condition (and therefore may not be tracked by the licensee), and (3) increase the potential for personnel error, including OWAs that:

- require operations that are contrary to past training or require more detailed knowledge of the system than routinely provided,
- require a change from longstanding operational practices,
- require operation of a system or component in a manner dissimilar from similar systems or components,
- create the potential for the compensatory action to be performed on equipment or under conditions for which it is not appropriate,
- impair access to required indications, increase dependence on oral communications, or require actions under adverse environmental conditions, or
- require the use of equipment and interfaces that had not been designed with consideration of the task being performed.

03.04 Biennial Team Inspection.

The biennial team inspection is intended to complement and expand upon the reviews described in Sections 03.01, 03.02, and 03.03 of this IP by:

- evaluating additional examples of licensee PI&R,
- reviewing the resolution of issues that earlier had been assessed for the licensee's identification efforts only,
- comparing the NRC's results against the licensee's assessment of performance in the PI&R area, and
- assessing whether PI&R deficiencies may indicate potential programmatic issues.

a. Planning. Inspectors should obtain licensee administrative procedures that control the identification, evaluation, and resolution of problems. Selected licensee documents needed to support the inspection may be obtained prior to the inspection. These documents should only be reviewed to provide the inspectors with sufficient knowledge of the licensee's programs and processes, as necessary, to conduct an effective and efficient inspection.

Inspectors should obtain and review documents for the in-office review, such as a list of corrective action documents issued from the time of the last biennial team inspection (e.g., a list of work orders, work requests, temporary modifications, calibration failures, condition/problem identification reports, operability evaluations and determinations, etc.). In addition, inspectors should obtain relevant licensee corrective action program assessments, program performance information, trend reports, and licensee safety culture assessments. Refer to IMC 0620, "Inspection Documents and Records" for more information on requesting documents for inspection preparation.

Inspectors should obtain and review all NRC inspection reports issued since the last biennial team inspection to determine:

- the extent to which licensee actions in response to NCVs and findings have been sampled by routine reviews of licensee PI&R activities, and

- if any trends or patterns in corrective action program or performance issues warrant additional sampling to confirm. For example, a series of issues associated with "failure to follow procedures" within one cornerstone may indicate a corrective action performance deficiency within a portion of the licensee's organization; a series of issues associated with failure to follow procedures in multiple cornerstones may indicate a broader concern. Also, a lack of licensee-identified corrective action issues within a particular organization may be indicative of a problem with the identification threshold. Consider the need to follow-up on performance trends documented as a result of the semiannual trend review.

b. Sample Selection. Based on the planning review, inspectors should identify a sample of licensee corrective actions for review. The biennial inspection team leader should choose as many issues for review as warranted to complement the routine PI&R reviews and ensure a sufficient basis for evaluating the effectiveness of the licensee's PI&R program. *Inspectors can review Institute of Nuclear Power Operations (INPO) findings, recommendations, corrective actions, and operating experience that are documented in the licensee's corrective action program.* Inspectors may refer to the NRC/INPO Memorandum of Agreement, dated November 14, 2005 (ML060060035), for guidance prior to reviewing any INPO documents. [C1]

1. *The samples chosen for review should include a range of issues selected from the list in Section 71152-03.05, including those sample types that are designated as requiring a mandatory review. For a subset of the samples chosen for review, the scope of the review should be expanded to at least five years. Among the samples chosen for this extended review should be those issues whose significance might be age-dependent, such as issues associated with erosion of piping, degradation of safety-related raw water systems, boric acid accumulations, aging of electronic components,*

environmental qualification, etc. This review can be performed by requesting the licensee to perform a corrective action program search (computerized or other) for those items designated by the team for the five-year review. [C1]

2. *If the licensee conducted any periodic self-initiated assessments of safety culture during the review period, this assessment shall be included along with other non-safety culture self-assessments selected to review. If the licensee performed several assessments that collectively addressed safety culture issues, then those assessments combined should be considered as one assessment.* [C2] Inspectors should review the adequacy of the licensee's evaluation and actions to address the issues identified by the safety culture assessment. Not all actions necessarily need to be handled within the licensee's corrective action program under 10 CFR 50, Appendix B, Criterion XVI. It may be more appropriate for some issues that are not conditions adverse to quality to be tracked to resolution through an alternate licensee program such as an employee concerns program. The inspectors review should focus mainly on the licensee's response to the assessment results or actions taken to address identified issues instead of the assessment methodology or an evaluation the assessment's adequacy. Section 03.04.c provides more guidance on reviewing the licensee's safety culture assessment from the SCWE perspective.

3. When the licensee has been requested by the NRC to perform an independent safety culture assessment, inspectors shall evaluate the licensee's assessment.

4. Inspectors should consider emerging or existing cross-cutting themes for review during the biennial team inspection to develop insights into the licensee's progress in addressing the themes.

5. Inspectors may select one or more risk-significant systems and use a "vertical slice" approach to picking the inspection sample, as long as the system(s) selected will provide adequate coverage across all cornerstones in the reactor safety strategic performance area. In such cases, additional issues may be required to be reviewed to ensure adequate coverage across cornerstones in the Radiation Safety or Safeguards Strategic Performance Areas. However, an effort should be made to maintain the total hours expended in completing this procedure to within the estimated level of resources contained in Section 71152-04. The inspection team should make every effort to walk down applicable portions of the selected systems or perform field verification of selected corrective action samples.

c. Assessment of Safety Conscious Work Environment. *When conducting interviews with or observing other activities involving licensee personnel and/or long-term contractors (i.e., those that have been working at the site for at least*

six months) during the inspection, inspectors should be sensitive to areas and issues that may represent challenges to the free flow of information, such as areas where employees may be reluctant to raise concerns or report issues in the corrective action program. [C2] Interviewing long-term contractors would allow inspectors to assess the SCWE of a group of individuals that have worked at the site for extended periods of time and impacted plant operations and safety. Inspectors should also obtain insights about the SCWE during their review of the licensee's most recent safety culture and other relevant assessments. Inspectors should be sensitive to similarities and differences between the results of their SCWE interviews with plant staff and the results of the licensee's safety culture and other relevant assessments.

Although the licensee may be implementing an employee concerns or similar program regarding the identification of safety issues, the possibility of existing underlying factors that would produce a "chilling" effect or reluctance to report such issues could exist, and inspectors should be alert for such indications. Such factors could include but not be limited to direct retaliation, inadequate staffing that results in excessive overtime, an unwillingness to raise issues that might result in further increases to an already high workload, or inadequate corrective actions for previously identified issues causing personnel to be reluctant to identify additional related issues.

Appendix 1 to this procedure provides a list of questions that can be used when discussing PI&R issues with licensee personnel to help assess whether impediments to the establishment of a SCWE exist. It is not intended that inspectors conduct formal interviews solely for the purpose of assessing the work environment; rather, inspectors may use the questions in Appendix 1 during discussions with licensee individuals concerning other attributes of the inspection. It is expected that during this inspection, discussions or interviews will be held with both licensee management and staff.

If inspectors become aware of (1) instances of employees being discouraged from raising safety or regulatory issues within the licensee's or contractor's organization or to the NRC, (2) a "chilling" effect, or (3) other general reluctance of employees to raise safety or regulatory issues unrelated to a specific event or incident, they should refer to IP 93100, "Safety Conscious Work Environment Issue Follow-up" and consult with regional management to determine appropriate follow-up actions.

d. Development of PI&R Program Performance Insights. By reviewing a sufficient number and breadth of samples, the inspection team should be able to develop insights into the licensee's ability to identify, evaluate, and resolve problems using the corrective action program, operating experience, and results of self-assessments/audits. Inspectors should compare these results with the licensee's performance reviews, including reviews of PI&R programs. Inspectors should determine whether licensee reviews are consistent with the NRC review of PI&R issues.

The intent of this IP (both the routine and biennial inspection effort) is to provide insights into licensee performance in the PI&R area based upon a performance-based review of corrective action issues, operating experience, and self assessments/audits. More detailed programmatic reviews of licensee performance in the PI&R area will be conducted during supplemental inspections if established performance thresholds are crossed.

03.05 Sample Selection Guidance.

Inspectors should seek the broadest range of examples from the cornerstones of safety when selecting inspection samples. Inspectors can obtain insights for determining appropriate samples from discussion with resident or regional inspectors who are familiar with the site's issues, PI&R process, and previously inspected areas. In selecting issues for review, inspectors should also use relevant risk insights, such as maintenance rule program basis documents, current licensee risk analysis results or insights, licensee system health reports, and significance determination process (SDP) Phase 2 worksheets for the plant.

Inspectors should consider including samples from the sources listed below (♠ – indicates mandatory samples only for biennial team inspections). Other than for the mandatory samples, inspectors are not required to select from each type of source listed. The sample-selection guidance is intended to help ensure that the NRC can obtain insights into a licensee's corrective action program throughout an assessment cycle.

- ♠Licensee-identified issues, including issues identified during audits or self-assessments, and licensee event reports. The review of licensee event reports should be coordinated with the resident inspectors to effectively utilize inspection resources during the biennial team inspection. Include a sample of corrective actions that were considered having the highest priority. The licensee's root cause analyses associated with these items should be assessed using the inspection guidance contained in IP 95001, "Supplemental Inspection for One or Two White Inputs in a Strategic Performance Area," as an aid.♠

- ♠Completed self-assessments/audits, including quality assurance program audits performed to satisfy 10 CFR 50, Appendix B, Criterion XVIII. Determine if the results are consistent with the data collected during this inspection and whether the audits and self-assessments are effectively identifying problems. Verify that any substantial differences that exist between results from the subject assessment/audit and the results of previous assessments/audits are reasonable. Review the licensee's response to the assessments/audits to determine if corrective actions were tracked, timely, and appropriate for resolving identified issues.♠ Quality assurance audits can be an important source of problem identification. When reviewing quality assurance audits inspectors should be familiar with the licensee's quality assurance topical report/ Quality Assurance Plan and the associated industry standards that the Quality Assurance Plan

commits to in order to determine if the audits are appropriately identifying problems in the Appendix B area the audit is focused on. If the inspector finds inconsistencies between the conclusions of the audit and the conclusions of the PI&R team, several cycles of audits for that area should be reviewed to determine if the audits were of sufficient depth and scope to adequately assess the appropriate Appendix B audit area. The collective result of all the Appendix B, Criterion XVIII, quality assurance audits for the two year cycle should be to "verify compliance with all aspects of the quality assurance program and to determine the effectiveness of the quality assurance program." The PI&R team should assess the identified inconsistencies to determine if the quality assurance audits are appropriately indentifying problems.

- ♠*Safety culture assessments. A licensee's evaluation of specific safety culture components, cross-cutting areas, functional departments, or levels (e.g., supervisors or non-supervisory workers) may constitute a safety culture assessment review. Licensee safety culture self-assessments may also be reviewed in accordance with Section 02.03 of this IP as an annual follow sample* [C2]♠

- ♠A sample of NRC-identified issues during baseline, supplemental, and reactive inspections. Discuss such issues with respective NRC inspectors and management as part of inspection preparations. The biennial team inspection shall review all licensee corrective actions associated with greater than green inspection findings that were not completed by the conclusion of the associated supplemental inspection and which have not been previously completed and subsequently reviewed. A review of all licensee completed corrective actions for greater than green findings provides additional assurance that the licensee's completed corrective actions for risk- significant performance issues are sufficient to address the root and contributing causes and prevent recurrence.♠

- ♠Issues related to cited and non-cited violations and documented findings. During the biennial inspection, it is mandatory to review the licensee's response to a sample of NCVs unless no NCVs were identified in the cornerstone.♠

- ♠Issues identified through NRC and industry operating experience exchange mechanisms (e.g., NRC generic communications, reports associated with 10 CFR 21, nuclear steam system supplier vendor reports, Electric Power Research Institute reports, and operating experience reports from similar facilities).♠

- Issues captured in databases operated and/or maintained by the site's corporate office. A site's corporate office may track such issues in a database(s) separate from the site's corrective action program. Inspectors may choose to view the contents of such a database(s) to ensure that issues and operating experience are communicated to affected sites owned or operated by or associated with the corporate entity. Should an issue be identified on site that warrants follow-up and that issue is captured in the corporate corrective action program, then that issue

and the licensee's handling of it should be reviewed, even though it is a corporate corrective action program issue. A review of corporate corrective actions programs can identify important information affecting multiple sites, such as those identified with bio-diesel fuel for which NRR issued Information Notice (IN 2009-02) for example.

- ♠Cause analyses and corrective action documentation associated with systems, structures, components (SSCs), or functions classified as (a)(1) status in accordance with the Maintenance Rule (10 CFR 50.65). Review the licensee's trending analysis associated with these SSCs/functions to determine whether the licensee's corrective action program should have enabled the identification and correction of the adverse trend prior to the SSC/function obtaining (a)(1) status.♠

- Cross-cutting issues and other issues identified by safety review committees or other management oversight mechanisms.

- *Issues identified through alternative avenues, such as employee concerns or similar programs.* [C2] Note that some members of the licensee staff may not have authorized access to information about issues that are captured in these programs. Inspectors should accordingly protect this information from disclosure to any unauthorized personnel. In particular, inspectors should limit any verbal and/or written discussions to only those licensee staff that have access rights to the subject records and to inspection team members that have a need-to-know. Inspectors may need to restrict access to portions of the exit or debrief meetings as appropriate.

- Issues that challenge operator performance such as OWAs, Main Control Room deficiencies, etc.

- Issues that may be age-related (e.g. due to aging effects such as loss of material, loss of preload, or cracking). Plants with renewed licenses have established aging management programs (AMPs) to identify, address, and/or prevent aging effects prior to loss of intended function for those SSCs within the scope of the AMP. When inspecting degradation or failures that appear to be age-related, inspectors should, in addition to other inspection activities, determine whether the SSC is being managed by an AMP. If so, the inspector should also determine whether the activities in the AMP are adequate to identify the aging effect prior to loss of SSC intended function, and whether the licensee's corrective actions address the adequacy of the AMP. Consult with the regional license renewal point of contact for support in evaluating the adequacy of the AMP.

- Fatigue-related issues identified through fitness for duty effectiveness reviews or licensee assessments reports, see 10 CFR 26.717(9). Refer to IP 93002, "Managing Fatigue" for additional guidance.

03.06 Performance Attributes.

When evaluating the effectiveness of a licensee's corrective actions for a particular issue, the nature and (potential) significance of the identified problem must be considered. While licensees may appropriately consider monetary, plant availability, and other factors when determining significance, the potential impact on nuclear safety and risk should be the primary factors in the licensee's classification and prioritization of corrective actions. Attributes to consider during the routine review, semiannual trend review, annual follow-up of selected issues, and biennial team inspection are listed in the table below. Inspectors are not expected to assess each attribute for every issue selected for follow-up during routine reviews, semiannual trend reviews, or during the annual follow-up of selected issues. Instead, inspectors may choose to assess licensee performance against selected attributes, as necessary, to be most effective. Inspectors can also refer to IP 95001 for additional guidance on assessing licensee evaluations of significant performance issues.

Table 1 – Performance Attributes

Performance Attributes	See Legend Below			
Complete, accurate, and timely documentation of the identified problem in the corrective action program.	R	S	A	B
Evaluation and timely disposition of operability and reportability issues. Refer to Section 4.6 of the Attachment to NRC Regulatory Issue Summary (RIS) 2005-20, Revision 1 for additional guidance related to the timing of operability determinations.	R	S	A	B
Consideration of extent of condition and cause, generic implications, common cause, and previous occurrences.	R	S	A	B
Classification and prioritization of the problem's resolution commensurate with the safety significance.	R	S	A	B
Identification of root and contributing causes of the problem. The identification of the significant condition adverse to quality, the cause of the condition, and the corrective action taken shall be documented and reported to appropriate levels of management. Inspectors may use guidance contained in IP 95001 as an aid in assessing the adequacy of licensee root cause analyses.	R♣	S♣	A	B
Identification of corrective actions that are appropriately focused to correct the problem (and to address the root and contributing causes for significant conditions adverse to quality).	R♣	S♣	A	B
Completion of corrective actions in a timely manner commensurate with the safety significance of the issue. Included within this attribute would be justifications for extending corrective action due dates. If permanent corrective actions require significant time to implement, then inspectors should verify that interim corrective actions and/or compensatory actions have been identified and implemented to minimize the problem and/or mitigate its effects until the permanent action could be implemented. Refer to Section 7.2 of the Attachment to NRC RIS 2005-20, Revision 1 for additional guidance related to the timing of corrective actions.	R♣	S♣	A	B
Action taken results in the correction of the indentified problem. In the case of significant conditions adverse to quality, the corrective action taken shall preclude repetition.	R♣	S♣	A	B
Identification of negative trends associated with human or equipment performance that can potentially impact nuclear safety.		S		B
Operating experience is adequately evaluated for applicability, and applicable lessons learned are communicated to appropriate organizations and implemented.	R	S	A	B
Self assessments and audits are effective at identifying issues, which are evaluated and resolved commensurate with their significance.				B
For NRC-identified issue(s), evaluate whether opportunities to identify the problem(s) by the licensee were missed in the past and if prior attempts by the licensee to remedy the problems were adequate.				B

R – Routine Review
S – Semi Annual Trend Review
A – Annual Follow-up of Selected Issues
B – Biennial Team Inspection

♣ – Indentified issues may be deferred and addressed with the annual follow-up of selected issues or the biennial team inspection.

03.07 Documentation Guidance.

IMC 0612, Appendix D provides additional specific and unique guidance beyond that contained in IMC 0612 for documenting PI&R inspection activities. The level of documentation for PI&R inspection activities differs from that used for other baseline inspection activities by allowing the documentation of observations and assessments.

a. Routine Review. Document the completion of routine plant status reviews and the daily screening of items entered into the corrective action program performed under Sections 02.01 and 03.01 of this inspection procedure. Typically this is documented in Section 4OA2 of the quarterly integrated inspection report.

b. Semiannual Trend Review. On a semiannual basis, a section should be added to the quarterly integrated inspection report to document the inspectors' observations and assessments of trends that might indicate the existence of a more significant safety issue as they relate to the performance attributes discussed in Section 03.06. Unlike the level of documentation for the routine reviews above, the level of documentation for the trend review should include trends that might not rise to the level of an inspection finding.

c. Annual Follow-up of Selected Issues. The basis for the selection and the scope of review of each sample should be documented in the integrated inspection report. In general, issues associated with PI&R programs should also be documented in the report. This documentation should include factual information that relates to the performance attributes discussed in Section 03.06 if that information indicates licensee performance weaknesses. This documentation standard is different from the standard used to document issues elsewhere in the quarterly integrated inspection reports. Assessments of PI&R program effectiveness will not be performed during these inspections – such assessments will be performed only during the biennial team inspection. Technical issues associated with other inspectable areas and cornerstones should also be documented in those sections of the report.

d. Biennial Team Inspection. At the completion of inspection activities, the team should develop a clear and concise discussion of the results of their review. This discussion should also be supported by the inspection activities, including those activities from the routine reviews, semiannual trend reviews, and annual follow-up of selected issues, conducted since the last biennial assessment of the licensee's PI&R program. The discussion should be documented in the inspection report for the biennial team inspection.

   Inspectors should also document their conclusions regarding (1) the effectiveness of the licensee's corrective action program, (2) the licensee's use of operating experience, and (3) the results of self-assessments/audits. Any issues associated with SCWE and *any prohibition of the free flow of information that may have been detected during the inspection* should also be documented.

[C2] The assessment of the licensee's SCWE should be based on the results of the biennial inspection interviews of plant staff and any relevant insights obtained from the review of the licensee's most recent safety culture and other relevant assessments.

71152-04 RESOURCE ESTIMATE

04.01 Routine Review.

The effort for daily review of corrective action items is estimated at just over 30, 40, and 50 minutes for single-, dual-, and triple-unit sites, respectively. This equates to an annual effort of 129 hours, 178 hours, and 225 hours for single-, dual-, and triple-unit sites, respectively. Time spent performing these daily reviews should be charged to IP 71152.

It is expected that routine reviews of PI&R activities should equate to approximately 10 to 15 percent of the resources estimated for the associated baseline cornerstone procedures, this is a general estimate only based on the overall effort expected to be expended in each strategic performance area. It is anticipated that the actual hours required to be expended may vary significantly from attachment to attachment, depending on the nature and complexity of the issues that arise at the particular facility. Overall, an effort should be made to remain within the 10 to 15 percent estimate on a strategic performance area basis. Inspection time spent assessing PI&R as part of the baseline procedure attachments should be charged to the corresponding baseline procedure.

04.02 Semiannual Trend Review.

The effort for the semiannual trend reviews is estimated to take an average of 16 to 24 hours per year, regardless of the number of units on site. The time spent performing these reviews should be charged to IP 71152.

04.03 Annual Follow-up of Selected Issues.

The annual effort for review of the four to eight samples per Section 02.02 is estimated to take an average of 61 to 81 hours for a single-unit site, 64 to84 hours for a dual-unit site, and 67 to 87 hours for a triple-unit site. The time spent reviewing the four to eight samples should be charged to IP 71152.

04.04 Biennial Team Inspection.

The biennial team inspection is estimated to take an average of 212 to 288 hours of direct inspection effort. Resident inspector staff participation (either full or part time) on the inspection team is highly recommended. The time spent performing the biennial team inspection should be charged to IP 71152B.

Resources used to perform IP 93100, "Safety Conscious Work Environment Issue

Follow-up" inspection should be charged to IP 93100.

71152-05 PROCEDURE COMPLETION

Inspection of the minimum sample size will constitute completion of this procedure in the Reactor Program System (RPS). The minimum sample size for the annual completion of the baseline inspection consists of 2 semiannual trend reviews per Section 02.02 of this IP and 4 issues selected for follow-up per Section 02.03 of this IP for a total of 6 samples in RPS. The minimum sample size for the biennial team inspection is 1 and is defined as the biennial team inspection. These minimum sample sizes apply regardless of the number of reactor units at the site. See IMC 2515 for further guidance on procedure completion.

71152-06 REFERENCES

IMC 0305, "Operating Reactor Assessment Program"

IMC 0612, "Power Reactor Inspection Reports"

IMC 0620, "Inspection Documents and Records"

IMC 2515, "Light-Water Reactor Inspection Program – Operations Phase"

IP 36100, "10 CFR Part 21 Inspections at Nuclear Power Reactors"

IP 38703, "Commercial Grade Dedication"

IP 93002, "Managing Fatigue"

IP 93100, "Safety Conscious Working Environment Issue Follow-up"

IP 71111.12, "Maintenance Effectiveness"

IP 95001, "Supplemental Inspection for One or Two White Inputs in a Strategic Performance Area"

Nuclear Regulatory Commission Enforcement Manual

NRC Regulatory Issue Summary 2005-20, Revision 1, Revision to NRC Inspection Manual Part 9900 Technical Guidance, "Operability Determinations & Functionality Assessments for Resolution of Degraded or Nonconforming Conditions Adverse to Quality or Safety"

Title 10 of the *Code of Federal Regulations*

NRC/INPO Memorandum of Agreement, dated November 14, 2005 (ADAMS ML060060035)

See the following web links for reference documents:

http://nrr10.nrc.gov/rorp/ip71152.html

END

Appendix 1: Guidance for Gathering SCWE and PI&R Insights

Attachment 1: Revision History

Appendix 1 – Guidance for Gathering SCWE and PI&R Insights

The following are suggested questions that may be used when discussing PI&R issues with licensee individuals. It is not intended that these questions are asked verbatim, but rather, that they form the basis for gathering insights regarding whether there are impediments to the formation of a SCWE.

In cases where a potential problem with SCWE is identified in response to these questions, inspectors should consult with regional management to determine if inspection resources should be applied using IP 93100, "Safety Conscious Work Environment Issue Follow-up" to gain additional SCWE insights.

Suggested Questions

1. a. Are you willing to raise a safety concern?

   b. Are there any conditions under which you would be hesitant to raise a safety concern?

   c. If yes, does that condition exist here at {Insert Plant Name}? Please elaborate.

2. a. Are you aware of situations where any employee or contractor may be hesitant to raise concerns, internally or externally?

   b. If yes, please explain. (If an NRC inspector is aware of a specific incident that may have caused such hesitation, then ask about it. Focus on whether or not the interviewee or others may be less likely to report concerns because of that incident).

3. a. Where would you go to raise a safety issue? [The NRC inspector should be aware of the following avenues for raising concerns, but should not prompt the interviewee by listing them as potential answers to the question: supervisor, corrective action program, alternative program (Employee Concerns Program (ECP)/Ombudsman), NRC, or other avenue.]

   b. Why would you pick this avenue? Have you or others had any experiences, or know of any situations, that have influenced your decision to pick this avenue? If so, please describe.

4. Are there other avenues available to you for raising safety issues (i.e., supervisor, corrective action program, ECP/ombudsman, NRC, or other avenues)? Ask each of the questions listed below for each avenue available.

   a. Have you ever submitted a safety issue to {insert method}? If not, why not?

   b. If yes, was the issue adequately addressed? Why or why not?

c. If not adequately addressed, did you further pursue the issue? If not, why not?

d. Given the nuclear safety importance of the issue, did you receive timely feedback?

e. Describe any instances in which you know of another employee who submitted an issue to {insert method} and you considered the response unacceptable.

5. Would you say that your management is supportive of the ECP/Ombudsman program?

a. If yes, how is such support demonstrated?

b. If no, please describe what has led you to believe that they are not supportive.

6. Are you aware of any actions taken by your management to prevent and detect retaliation and/or chilling effect?

a. Are their actions effective?

b. Has management's handling of any chilling effect issues been consistent?

7. Are you aware of any instances in which another individual experienced a negative reaction for raising a safety issue? If yes, please describe the incident, including any information conveyed by management concerning the incident.

8. a. What does SCWE mean to you?

b. Do you know if {Insert Plant Name} has a SCWE policy? If yes, can you briefly explain what the established policy requires?

9. Would you say that your management is supportive of the SCWE policy?

a. If yes, how is such support demonstrated?

b. If no, please describe what has led you to believe they are not supportive.

10. Have events or circumstances occurred in the past six months that have reduced:

a. Your willingness to identify or raise safety issues?

b. Your confidence in the corrective action program?

c. Your willingness to challenge actions or decisions you believe are unsafe?

END

Attachment 1 –Revision History for IP 71152

Commitment Tracking Number	Issue Date	Description of Change	Training Needed	Training Completion Date	Comment Resolution Accession Number
N/A	03/06/2001 CN 01-006	Revised to delete certain inspection requirements (collective risk of maintenance backlog and equipment unavailability accounting), eliminate duplication within the procedure, and provide additional guidance concerning the review of a safety conscious work environment.	No	N/A	N/A
N/A	01/17/2002 CN 02-001	Revised to include changing the inspection frequency to biennial and add guidance on the conduct of inspections of 3 to 6 samples per year outside of the team inspections.	No	N/A	N/A
C1	09/08/2003 CN 03-032	Revised to incorporate recommendations made by the PI&R focus group to address several items from the Davis Besse Lessons Learned Task Force. The changes include enhanced requirements regarding the routine PI&R reviews conducted by resident inspectors, biennial reviews of longstanding issues, and biennial reviews of operating experience issues.	Yes	09/24/2003	N/A

Commitment Tracking Number	Issue Date	Description of Change	Training Needed	Training Completion Date	Comment Resolution Accession Number
N/A	01/05/2006 CN 06-001 ML053490187	A requirement to inspect for cumulative effects of operator workarounds to IP 71152 as one of its annual samples was added. Also, the annual sample size and the estimate inspection resources required to complete this IP were increased to support review of operator work-arounds. Completed historical CN search.	No	N/A	N/A
N/A	06/22/06 CN 06-015 ML061560498	Guidance added for procedure completion regarding annual sample size. Procedure now requires that the time spent to review condition reports to be charged to IP71152 instead of the plant status procedure. Hours have been increased for condition report reviews.	No	N/A	ML061570086
C2		Incorporate safety culture initiatives described in Staff Requirements - SECY-04-0111, "Recommended Staff Actions Regarding Agency Guidance in the Areas of Safety Conscious Work Environment and Safety Culture," dated August 30, 2004.	Yes	July 1, 2006	

Commitment Tracking Number	Issue Date	Description of Change	Training Needed	Training Completion Date	Comment Resolution Accession Number
N/A	09/20/07 CN 07-029 ML070720179	IP 71152 has been revised to add guidance on NRC use of INPO documents.	No	N/A	ML071560246
N/A	01/10/08 CN 08-001 ML073540265	IP revised to address ROP Feedback Form 95001-1125 and some enhancements identified by the Problem Identification and Resolution Best Practices draft report.	No	N/A	ML073540274
N/A	02/26/10 CN 10-008 ML093270053	This revision incorporates: Resolution of ROP feedback forms: 71152-1314 (increased sensitivity to handling of confidential ECP information), -1322 (optional review of corporate databases to select samples), -1381 (interviewing long-term contractors for SCWE insights) and -1474 (budget hour correction). An additional inspection attribute for the Biennial Team Inspection to address a 2007 External Survey Comment. Added an additional 4 hours of inspection resources per the 2009 ROP Realignment Results (ML092090312).	No	N/A	ML100050386

Commitment Tracking Number	Issue Date	Description of Change	Training Needed	Training Completion Date	Comment Resolution Accession Number
N/A	08/18/11 CN 11-013 ML101090438	Added an inspection requirement to inspect completed corrective actions for greater than green inspection findings (feedback form 71152-1449), and added additional guidance related to the review of quality assurance audits (feedback form 71152-1400). Added reference to IP 93100, "Safety Conscious Working Environment Issue Follow-up" and provided additional guidance for follow-up (FF 71152-1561), provided additional guidance for inspectors in the selection of condition reports for the routine and semi-annual reviews (FF 71152-1626).	No	N/A	ML111870499
N/A	12/05/2011 CN 11-039 ML112360542	Added guidance for license renewal age management programs. Add requirement to verify applicable10 CFR 21 notifications entered into the licensee's CAP. Added sample selection guidance and references related to inspecting defects and nonconforming materials, part, or components. Resources changed to reflect the 2011 ROP Realignment (ML11178A329).	No	N/A	ML11332A016