

**Reactor Oversight Process (ROP)
Design Engineering Inspection Working Group (DEIWG)**

I. Background

Design engineering inspections have been and continue to be part of the NRC's power reactor inspection program to ensure adequate public safety. In the past, several different design engineering inspections process have been implemented and they include Safety System Functional Inspection (IP 93801); Electrical Distribution System Functional Inspection (IP 93811); Service Water System Operational Performance Inspection (IP 93810); and Safety System Design and Performance Capability Inspection (IP 71111.21). The Component Design Bases Inspection (CDBI) (IP 71111.21) is the current design engineering inspection. This inspection is performed under the ROP baseline inspection program and will continue through CY 2010 in its' present form.

As part of the Reactor Oversight Process (ROP) self-assessment process (Inspection Manual Chapter 0307) periodic (at least biennially) reviews of the ROP inspection procedures are conducted to determine if the inspection program is meeting the goals and intended outcomes. In accordance with Appendix B of the Inspection Manual Chapter 0307, "ROP REALIGNMENT PROCESS," IRIB and regional staff conduct effectiveness review of the inspection elements of the ROP to determine if the inspection's effectiveness can be improved. During this review it was determined that a working group should be formed to evaluate the current CDBI procedure to consider a new engineering design inspection procedure and to enhance effectiveness of the design engineering inspection program. The following reasons were identified and precipitated the need to form a working group to evaluate the current design engineering inspection program:

- 1) The feedback on the CDBI process indicates that the number of high risk low margin component samples that remain uninspected at each site is approaching exhaustion since the process does not normally allow for the re-inspection of the same component unless there is good justification.
- 2) Concerns have been raised over the inspection's effectiveness at identifying risk significant findings. Based on this observation the working group will explore a wide variety of options.

II. Purpose

The purpose of the CDBI working group is to develop a new engineering inspection procedure which can replace the current CDBI inspection procedure.

III. Desired Outcome:

The design engineering inspection working group shall develop a new engineering team inspection procedure which can be implemented starting in January of calendar year 2011. All training, if required, to implement the new engineering team inspections will be completed prior to January of 2011 and at least one pilot inspection using the new engineering inspection will be conducted before the implementation date. Additionally, lessons learned from the pilot inspection will be incorporated into the engineering inspection procedure prior to full implementation of the engineering inspection procedure.

IV. Taskings (TAC ME1403-00891)

1*) Develop the objectives for the new design engineering inspection. The objectives consider previously implemented design engineering inspection programs and the lesson learned.

2*) Determine scope of review (i.e., what information should the working group review and consider in order to develop the new engineering inspection) and identify key internal and external stakeholders. Include consideration of engineering issues requiring inspection follow-up for other reasons (e.g., cyber security rulemaking) in order to optimize resource utilization.

3*) Define quality attributes of an effective team engineering inspection program and ensure these quality attributes are part of the new engineering inspection program.

4) The staff FTE required to implement the new engineering inspection must be equal to or less than the staff FTE required to perform the 2009 CDBIs, and that the contractor support for the new engineering inspection shall not exceed \$2000k for 2011.

5*) Develop strategies to improve Agency's abilities to identify risk-significant performance deficiencies (aka, greater-than-Green inspection findings) through engineering team inspections.

6*) Develop ways to use recent notable events from Operating Experience associated with plant safety-related systems and components that could be attributable to quality of engineering work or maintenance of design bases.

7) Evaluate whether cumulative impact of plant changes (power up rates, grid changes, component replacement due to obsolesce, et. al.) over some period of time (3 - 5 yrs) should be part of the new engineering inspection. The purpose of the review will be to verify that these cumulative changes, when taken together, do not reduce affect system operability.

8*) Develop metrics to determine the success of the new inspection procedure.

9*) Provide recommendations on how to improve the efficiency of inspection report documentation and management review of engineering team inspections.

10) Obtain and incorporate feedback of those tasks which are asterisked from the regional DRS division directors and regional branch chiefs in charge of implementing CDBI inspections before developing a draft engineering team inspection report.

11) Provide briefings to the regions on the status of this project as required.

12) Develop a draft engineering team inspection procedure and obtain concurrence from regional and DIRS management prior to implementation of the new engineering inspection.

13) Perform at least one pilot inspection of the draft engineering team inspection procedure and evaluate lessons learned from the pilot inspection effort. Provide the results from the pilot inspection effort to both DIRS and regional management.

14) Provide training of the new engineering inspection procedure to the regions, if required, before full implementation.

15) Issue the new inspection procedure to allow for implementation in January of 2011.

V. Milestones

Activity	Start Date	Completion Date
Tasking items 1 – 8 Define Objectives Define Scope Define Quality Attributes Contractor Support Strategies to Improve Ability to Identify > Green Operating Experience Cumulative Impact of Plant Changes Metrics	6/1/2009	10/1/2009
Tasking item 9 Inspection Report Documentation	7/1/2009	12/31/2009
Tasking item 10 Obtain and Incorporate Feedback	10/1/2009	10/30/2009
Tasking item 11 Briefings	As required	As required
Tasking item 12 Draft Inspection Procedure	11/1/2009	11/30/2009
Tasking item 13 Perform Pilot	1/1/2009	6/30/2010
Tasking item 14 Provide Training	7/1/2010	12/31/2010
Tasking item 15 Issue New Inspection Procedure	7/1/2010	11/30/2010

VI. Chair Functions

- 1) Schedule and lead meetings
- 2) Prepare minutes and track action items from the meetings
- 3) Circulate draft products to members for review
- 4) Notify responsible managers in the event of a modification to the DEIWG Charter.
- 5) Ensure that the processes and work products are consistent with the IRIB Working Group Process (Branch Operating Instruction 011), and IMC 0040.

VII. DEIWG Membership Functions

- 1) Participate in meetings and perform meeting action items tasks generated during meetings.
- 2) Provide periodic briefing to DRS branch chiefs (responsible for the CDBI inspections) in respective regions on the status of and any significant changes to the CDBIs being considered by the work group.

VIII. DEIWG Membership

Jim Isom, NRR/DIRS/IRIB (Chair) (301)415-2954
Don Norkin, NRR/DIRS/IRIB..... (301)415-1109
Chris Cauffman, NRR/DIRS/IRIB..... (301)415-8416
Frank Arner (lead), Region I/DRS..... (610)337-5194
Steve Pindale (backup), Region I/DRS..... (610)227-5116
Wayne Schmidt (SRA), Region I/DRS (610)337-5315
Robert Berryman, Region II/DRS..... (404)562-4817
Andy Dunlop, Region III/DRS (630)829-9726
Laura Kozak (SRA), Region III/DRS (630)829-9604
Wayne Sifre, Region IV/DRS (817)860-8193
Gerond George (backup), Region IV/DRS..... (817)276-6562

IX. Duration

The DEIWG will be in-place until the revised inspection procedure is issued.

X. Level of Effort

Periodic DEIWG meetings will be (at least once a quarter) coordinated by the DEIWG chairman. These meetings may require travel to either headquarters or to one of the regional offices.

XI. Charter Modifications

The DEIWG will obtain concurrence from DIRs and regional management for substantive changes to either the charter taskings or the desired outcome.

Distribution:

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