

PROJECT PLAN - TWG #6

LICENSING PROCESS ISSUES

1. BACKGROUND:

Appendix A to 10 CFR Part 50, has General Design Criteria (GDC), that establish high level minimum requirements and the principal design criteria for nuclear power plants. These criteria provide the necessary design, implementation, construction, testing and performance requirements for structures, systems, and components important to safety. The structures, systems, and components important to safety are those that provide reasonable assurance that the facility can be operated without undue risk to public health and safety. 10 CFR 50.55a(h) requires that protection and safety systems meet the requirements stated in IEEE Std. 279-1971, "Criteria for Protection Systems for Nuclear Power Generating Stations," or IEEE Std. 603-1991, "IEEE Standard Criteria for Safety Systems for Nuclear Power Generating Stations," and the correction sheet dated January 30, 1995.

The above high level requirements and additional detailed guidelines for I&C systems including regulatory guides and branch technical positions (BTPs) are incorporated into NUREG 0800, "Standard Review Plan (SRP) for the Review of Safety Analysis Reports for Nuclear Power Plants". SRP Chapter 7 addresses I&C systems. The NRC staff compares the descriptions of I&C systems important to safety provided in the plant safety analysis report against the criteria in SRP Chapter 7 and thereby establishes acceptability of the system design. This review is based on deterministic criteria rather than numerical reliability goals established in probabilistic safety assessments .

Licensees may change (amend) the licensing design basis (SAR) of the plant, e.g., incorporate a digital I&C system modification in accordance with the requirements of 10 CFR 50.59. 10 CFR 50.59 states that changes to Technical Specifications (TSs) or changes that result in an un-reviewed safety question require prior NRC staff approval before implementation. If the proposed change does not affect a TS or result in an un-reviewed safety question, the licensee may implement the change without prior NRC staff approval. An un-reviewed safety question exists if the proposed change 1) increases the probability of occurrence or consequences of an accident or malfunction previously evaluated in the SAR, 2) creates the possibility of an accident or malfunction of a different type than previously evaluated in the SAR, or 3) reduces the margin of safety as defined in the basis for any TS.

SRP Chapter 7 provides guidance to the NRC staff for review of I&C systems against the applicable regulatory criteria for nuclear reactor plant licenses and amendments to existing licenses. The acceptance criteria consist of the technical requirements of 10 CFR 50 including IEEE 603 and IEEE 279 and the GDC, which establish the Commission requirements for I&C systems important to safety. The regulatory guides and the endorsed industry codes and standards they reference are the guidelines used

as a basis for the evaluation of conformance to the requirements of the Commission's regulations.

The review of safety I&C systems using SRP Chapter 7 confirms that sufficient information for the I&C system design has been provided which supports conclusions in the staff's safety evaluation report (SER) that:

- a. the I&C systems which are important to safety are appropriately identified;
- b. the acceptance criteria consisting of the applicable regulations, GDC, and IEEE Std. 603 for the I&C systems have been addressed;
- c. the design of the I&C systems has been demonstrated to meet the relevant requirements of the applicable regulations, and is, therefore, acceptable.

2. SCOPE:

The digital I&C system licensing issue task working group (TWG-6) will address the current NRC licensing approach for digital I&C system as discussed in the background section. The industry counter-parts will present the industry's view for digital I&C system licensing process.

3. PROBLEM STATEMENT:

The NRC and nuclear power industry share common goals for the safe, secure and efficient licensing of digital technology for both new reactors and operating reactors and fuel facilities. Key attributes that need to be addressed to facilitate digital technology licensing include:

- a. Adequate guidance on the level of detail in COL applications for new reactors and licensing action applications for operating reactors and fuel facilities necessary to begin, and complete, the regulatory reviews.
- b. Clear applicability of guidance for operating reactors and fuel facilities compared to new reactors, including the applicability of operating reactor change processes to new plant COLs and the applicability of Chapter 7 of the Standard Review Plan (NUREG-0800) to digital instrumentation and control upgrades for operating reactors and fuel facilities.
- c. Clear licensing process protocols for implementing the submittal and NRC review of digital technology applications, including the consideration of the license submitting and NRC completing its review in stages and considering the applicability of NRC review activities being conducted in the field.

4. DELIVERABLES:

- a. Issue interim guidance addressing future Nuclear Energy Institute (NEI) Guideline (such as NEI 06-02 "License Amendment Request Guidelines"), which will provide specific guidance on the: (1) level of detail for digital instrumentation and control applications; and (2) applicability of NRC guidance for both new plant COLs, operating reactors, and fuel facilities.
- b. NRC Regulatory Issue Summary 2002-22, dated November 25, 2002, endorsed the EPRI/NEI joint task force report, EPRI TR-102348, Rev. 1, NEI 01-01. The subject of that report was licensing digital upgrades. The issues discussed in that NRC endorsed report will be reviewed to assure the effectiveness of licensing process protocols. Discrepancies identified will be addressed by proposing permanent changes to guidance documents.
- c. Conforming changes for licensing process to Chapter 7 of NUREG-0800 and Regulatory Guide 1.206, as necessary to support outcomes of the other task working groups.

5. CRITICAL PATHS AND STEPS TO SUCCESS:

In order to accomplish its mission, the Licensing Process Issues TWG #6 will need (1) the resolution of issues by the digital I&C Project Plan TWGs 1 through 5, (2) resolution of comments on DG - 1145 to be addressed in RG 1.206, and (3) to define the requirements and guidance by NRC and the Industry for processing Digital I&C applications, amendments, and products.

The final outcome of the TWG effort will be to clarify the regulatory requirements, acceptance criteria, and guidelines that need to be met by the industry and NRC while submitting and evaluating digital I&C applications, amendments, and products. The outcome will be reflected in SRP Chapter 7, RG 1.206, NEI 01-01, and licensees' SAR Chapter 7.

6. MILESTONES, ASSIGNMENTS AND DELIVERABLES:

The Licensing process TWG milestone table will be developed following approval of TWG project plans 1-5.