

## Section 10

FINAL SUPPORTING STATEMENT  
FOR  
ENVIRONMENTAL QUALIFICATION OF ELECTRIC EQUIPMENT IMPORTANT TO  
SAFETY FOR NUCLEAR POWER PLANTS  
10 CFR 50.49, 50.49(a), 50.49(d), 50.49(f), 50.49(h), 50.49(i), 50.49(j) and 50.49(l)

### DESCRIPTION OF THE INFORMATION COLLECTION

#### Recordkeeping Requirements

10 CFR 50.49(a) requires applicants and licensees of nuclear power plants, other than a nuclear power plant for which 10 CFR 50.82(a)(1) certifications have been submitted, to establish a program for qualifying the electric equipment important to safety as defined in 10 CFR 50.49. The current licensees have completed this requirement. Additional information is expected to be collected from approximately 4 new combined operating license (COL) holders.

10 CFR 50.49(d) requires applicants and licensees to prepare a list of electric equipment important to safety, and include the performance specifications under conditions existing during and following design basis accidents, the electric characteristics for which performance under specified conditions can be ensured, and the environmental conditions in which it must operate. Applicants and licensees must keep the list and information in the file current. All current licensees have prepared lists of equipment and performance specifications, and future information collection under this section of the regulation is required to the degree it is necessary for keeping the information current. New COL applicants would need to prepare and maintain this list of electrical equipment important to safety that is covered under this section.

10 CFR 50.49(f) requires each item of electric equipment important to safety to be qualified by one of four specified methods, all with a supporting analysis to show that the equipment to be qualified is acceptable. Licensees have completed this requirement for existing plant equipment. However, this requirement remains active for qualification of new equipment installations and for replacement equipment that falls under the scope of this regulation. The COL applicants would need to qualify each item of electric equipment important to safety under one of four specified methods, and perform a supporting analysis to show that the equipment to be qualified is acceptable. All 4 COL applicants are expected to qualify electrical equipment during the clearance period.

10 CFR 50.49(j) requires that a record of the qualification, including documentation required by 10 CFR 50.49(d), be maintained in an auditable form for the entire period during which the covered item is installed or stored for future use in the nuclear power plant. This is required to permit verification that each item of electric equipment important to safety is qualified for its application and meets its specified performance requirements when it is subjected to the conditions predicted to be present when it must perform its safety function, up to the end of its qualified life. This requirement would not apply to COL's because the plants would be in the initial design phase.

10 CFR 50.49(l) requires replacement equipment to be qualified in accordance with the provisions of 10 CFR 50.49 unless there are sound reasons to the contrary. Therefore, unless there is suitable justification for some alternate course of action, new equipment installations

and replacement equipment that fall under the scope of 10 CFR 50.49 must be qualified in accordance with 10 CFR 50.49 requirements, including the documentation requirements of 10 CFR 50.49(d), CFR 50.49(f) and CFR 50.49(j). The licensee must maintain any justification for an alternative course of action on site, and the justification must be available for inspection as part of the inspection procedure. This requirement would not apply to COL's because the plants would be in the initial design phase.

#### Reporting Requirements

10 CFR 50.49(h) requires each licensee to notify the NRC of any significant equipment qualification problem that may require extension of the completion date, provided pursuant to 10 CFR 50.49(g), within 60 days of its discovery. Since this requirement has been completed by all licensees, no further collection of information is required under this section of the regulation. This requirement would not apply to COL's because the activity would be completed as part of the initial design.

10 CFR 50.49(i) requires applicants for operating licenses granted after February 22, 1983, but prior to November 30, 1985, to perform an analysis to ensure that the plant can be safely operated pending completion of equipment qualification required by this section. This requirement is complete and is not applicable to new COLs.

#### A. JUSTIFICATION

##### 1. Need for and Practical Utility of the Collection of Information

Nuclear power plant electric equipment important to safety must be able to perform its safety functions throughout its installed life. Records that demonstrate equipment performance capabilities must be maintained in an auditable form to permit verification that each item important to safety is qualified. These records are maintained for the entire period during which the equipment item is installed in the plant or is stored for future use.

##### 2. Agency Use of Information

The reports and records required by 10 CFR 50.49 allow NRC to periodically assess whether 104 operating plants meet requirements pertaining to environmental qualification of electrical equipment. This information has been used by licensees to address various equipment qualification issues over time, to confirm equipment design adequacy when making plant changes, and when performing plant design reviews and assessing vulnerabilities that are periodically identified. This information has also been used by NRC personnel when assessing equipment design adequacy during periodic routine and reactive inspections.

##### 3. Reduction of Burden Through Information Technology

There are no legal obstacles to reducing the burden associated with this information collection. The NRC encourages respondents to use information technology when it would be beneficial to them. NRC issued a regulation on October 10, 2003 (68 FR 58791), consistent with the Government Paperwork Elimination Act, which allows its licensees, vendors, applicants, and members of the public the option to make submissions electronically via CD-ROM, e-mail, special Web-based interface,

or other means. It is estimated that approximately 0% of the potential responses are filed electronically.

4. Effort to Identify Duplication and Use Similar Information

No sources of similar information are available. There is no duplication of requirements. NRC has in place an ongoing program to examine all information collections with the goal of eliminating all duplication and/or unnecessary information collections.

5. Effort to Reduce Small Business Burden

This requirement only affects nuclear power reactor licensees or applicants and, therefore, does not affect small businesses.

6. Consequences to Federal Program or Policy Activities if the Collection is Not Conducted or is Conducted Less Frequently

The provisions of 10 CFR 50.49 require the applicant/licensee to set up a program for the environmental qualification (EQ) of electric equipment, and maintain equipment qualification records for the installed life of the component. If this information was not required to be assembled and maintained, there would be no record of the basis for equipment qualification and, in particular, there would be no record of what the boundaries of qualification are for the equipment of a particular plant. Establishing and maintaining the specified information is needed to provide assurance of equipment operability in the most severe environments that are postulated to exist at each commercial nuclear power plant.

There is no specific frequency associated with the collection and maintenance of environmental qualification information, per se. Following the initial certification efforts, the information is reviewed and enhanced and new qualification information is gathered by the licensee on an "as needed" basis depending on specific plant circumstances that arise, equipment vulnerabilities that are identified, plant upgrades, and the periodic replacement of components.

7. Circumstances which Justify Variation from OMB Guidelines

The records required by 10 CFR 50.49(d) and 10 CFR 50.49(j) are required to be maintained for the life of the component so that the NRC and the licensees can periodically assess and determine if equipment important to safety at nuclear power plants meets specified performance requirements.

8. Consultation Outside the NRC

Opportunity for public comment on the information collection requirements for this clearance package was published in the Federal Register on May 14, 2013 (78 FR 28244). No comments were received.

9. Payment or Gift to Respondents

Not applicable.

10. Confidentiality of Information

Confidential and proprietary information is protected in accordance with NRC regulations at 10 CFR 9.17(a) and 10 CFR 2.390(b). However, no information normally considered confidential or proprietary is requested.

11. Justification for Sensitive Questions

This regulation does not request sensitive information.

12. Estimated Industry Burden and Burden Hour Cost

No licensees are expected to submit reports to the NRC during the clearance period.

A number of COLS will begin establishing programs to fulfill requirements under 50.49 during the clearance period. These COLs will be subject to one-time recordkeeping requirements to establish a program under 50.49(a), prepare a list of equipment under 50.49(d) and qualify equipment under 50.49(f). The NRC staff estimates that it will take each COL approximately 300 hours to establish a program under 50.49(a) and prepare a list of equipment under 50.49(d), or 100 hours annually during the clearance period (300 hours / 3 years = 100 hours). The NRC staff estimates that it will take each COL approximately 2080 hours to qualify new equipment under 50.49(f), or 693.3 hours annually during the clearance period (2,080 hours / 3 years = 693.3 hours).

Annual recordkeeping requirements under this regulation are relatively minor and situational dependent, pertaining primarily to the maintenance and upkeep of existing equipment qualification records, as equipment ages, with some effort required for establishing new records, as equipment is replaced, and for new equipment installations. Those sections of the regulation that are currently active in this regard are 10 CFR 50.49(d), 10 CFR 50.49(f), and 10 CFR 50.49(j). On the average, staff estimates that collection and maintenance of information as required under this regulation will require about 2,080 hours per year per licensee, for a total industry burden of 216,320 hours (2,080 hrs x 104). Using a cost of \$274/hour, this amounts to \$569,920 per year per licensee. This results in a cost of about \$59,271,680 for the operating reactors in the regulated nuclear industry (i.e., 104 power plants). COLs annual recordkeeping will be added to the annual recordkeeping in the next clearance cycle.

Table 1  
One-Time Recordkeeping Requirements (Annualized)

Sections	Number of Rkeepers	Burden per Rkeeper	Total Annual Burden	Cost @ \$274/hr
10 CFR 50.49(a) Establish program	4	100	400	\$109,600

Sections	Number of Rkeepers	Burden per Rkeeper	Total Annual Burden	Cost @ \$274/hr
10 CFR 50.49(d) Prepare list of equipment	Included in 10 CFR 50.49(a)			
10 CFR 50.49(f) Qualify new equipment	4	693.3	2773.2	\$759,857
Total One-Time Recordkeeping	4		3173.2	\$869,457

Table 2  
Annual Recordkeeping Requirements

Sections	Number of Licensees	Burden per Report	Total Annual Burden	Cost @ \$274/hr
10 CFR 50.49(d) 10 CFR 50.49(f) 10 CFR 50.49(j)	104	2080	216,320	\$59,271,680
Total Annual Recordkeeping	104	--	216,320	\$59,271,680

The total annual burden for this collection is 219,493.2 hours (3,173.2 hours for one-time recordkeeping requirements + 216,320 hours for annual recordkeeping requirements) for a total cost of \$60,141,137 (219,493.2 x \$274). There are 108 record keepers (104 operating reactors + 4 COLs) affected by this collection.

13. Estimate of Other Additional Costs

The NRC has determined that the quantity of records to be maintained is roughly proportional to the recordkeeping burden and, therefore, can be used to calculate approximate records storage costs. Based on the number of pages maintained for a typical clearance, the records storage cost has been determined to be equal to 0.0004 times the recordkeeping burden cost. Because the recordkeeping burden is estimated to be 219,493.2 hours, the storage cost for this clearance is \$24,056 (219,493.2 hours x 0.0004 x \$274/hour).

14. Estimated Annualized Cost to the Federal Government

Because the information that is required to be established and maintained per 10 CFR 50.49 requirements is kept by the licensees and made available for NRC review during routine site inspections and as the need arises, the total annual cost to the Federal government is negligible.

15. Reasons for Changes in Burden or Cost

The burden increased from 216,320 hours to 219,493.2 hours, an increase of 3,173.2 hours. This increase is due to 4 COLs incurring burden associated with one-time recordkeeping requirements under 50.49. These COLs will be establishing programs for qualifying the electric equipment important to safety as

defined in 10 CFR 50.49., making lists of equipment important to safety, and qualifying the equipment during the clearance period. In the last clearance period, there were no COLs ready to implement these requirements.

In addition, costs have increased from \$257 per hour to \$274 per hour.

16. Publication for Statistical Use

This information collection is not used for statistical purposes.

17. Reason for Not Displaying the Expiration Date

The requirement is contained in a regulation. Amending the Code of Federal Regulations to display information that, in an annual publication, could become obsolete would be unduly burdensome and too difficult to keep current.

18. Exceptions to the Certification Statement

None.

B. COLLECTIONS OF INFORMATION EMPLOYING STATISTICAL METHODS

Not applicable.