

Nuclear Plant NFPA 805 Program Maintenance



AREVA, the world's leading nuclear supplier, is recognized throughout the industry as a premier provider of fire protection engineering, design and analysis services.

Background

AREVA has provided fire protection engineering services to the nuclear power industry for plants that have committed to transition their licensing basis from a NRC prescriptive program to a risk-informed / performance-based NFPA 805 program. Upon the completion of the plant Licensing Amendment Request submittal, plants need to commence with the new program implementation and maintenance process.

Involved and Engaged

AREVA has actively supported the development of NFPA 805 and is a leader in fire protection standards development, industry working groups, and industry forum presentations. Additionally, as part of a Nuclear Energy Institute (NEI) initiative, members of our team helped develop the circuit analysis methods described in NEI 00-01, "Guidance for Post-Fire Safe Shutdown Circuit Analysis." We were also selected by NEI to support pilot plant evaluations of this methodology to demonstrate compliance with regulatory requirements.

AREVA currently is engaged in supporting several plants with the implementation and maintenance of their NFPA 805 Programs, post-transition.

Continuing the NFPA 805 Program, Post-Transition

Transitioning to a NFPA 805 program is a significant undertaking, and AREVA has the knowledge and experience to supplement the plant engineering staff with fire protection, safe shutdown and other engineers for reviewing plant modification impacts on the NFPA 805 Fire Protection Program. This effort typically includes having AREVA project team resources available to support initiation of revised and new procedures, training of modification engineers and assessment of modification impacts to the program.



AREVA can provide the following minimum services for maintaining the NFPA 805 program:

- Review of new and completed Engineering Change packages for impacts on the NFPA 805 Program.
- Perform Analysis updates based on the results of new / existing modification change impacts.
- Provide mentoring services for the plant engineering staff for maintaining the NFPA 805 Program.
- Provide NFPA 805 Fire Protection Program general engineering support for Fire PRA Reviews, change evaluations, and NRC Inspections.

Features and Benefits

- Cost and man-hour savings for maintaining the program
- Mentoring services for the plant engineering staff
- NFPA 805 Fire Protection Program change evaluation support activities

Modifications Impact Screening Reviews on the NFPA 805 Program

The review of plant modification packages include performing a screening review to ensure the modifications do not make changes in the plant that can negatively affect the NFPA 805 Fire Protection Program.

Some of the initial review steps include:

- The review of new, existing and emergent modification packages.
- Review of elementary drawings and flow diagrams for impacts.
- Review of critical analyses / evaluations including:
 - a. Fire Probabilistic Risk Assessment
 - b. Nuclear Safety Capability Assessment for "At Power"
 - c. Nuclear Safety Capability Assessment for Non-power Operations
 - d. Classical Fire Protection
 - e. Breaker Coordination
 - f. Code Compliance

Typically, the NFPA 805 modification reviews will require the identification and development of the necessary work processes and procedures for maintaining configuration control. This effort will be key for maintaining configuration control of the program for the ongoing life of the plant. AREVA has developed these processes / procedures for other plant sites and can use the lessons learned from these projects to streamline the process for your plant.

Maintaining NFPA 805 Program Documentation

In addition to the modification screening for NFPA 805 impacts, revisions to analyses and calculations may be necessary for the modification design. The analyses that may require update could include:

- Classical Fire Protection Design Basis Documentation
- Nuclear Safety Capability Assessment for Post-Fire Safe Shutdown
- Nuclear Safety Capability Assessment for Non-power Operations
- Radiation Release Assessment
- Breaker Coordination Study
- Fire PRA Updates

The updates and screening reviews can be a living process for every modification performed following the License Amendment Request submittal.

Mentoring of Plant Engineering Resources

AREVA understands that the plant engineering staff must be responsible to implement and maintain the NFPA 805 Fire Protection Program. Therefore, AREVA can provide mentoring services so this responsibility can be transferred to the plant staff as quickly as possible. This typically is accomplished with the simultaneous mentoring and training of the plant staff in the process and tools used during the screening. To accomplish this, AREVA will commit engineering personnel on site to work with the plant staff for implementing the plant screenings and documentation updates.

Experience You Can Count On

AREVA offers the complete range of engineering services needed to help you successfully maintain your NFPA 805 Program. Working in concert with your plant staff personnel, we will help develop the maintenance process, provide any necessary mentoring activities and support updates to required engineering analyses and supporting documentation.

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