

**FERC justification for record retention requirement in PRC-005-2 that exceeds the 3 year record retention requirement of 5 CFR 1320.5(d)(2).**

There are three reasons that justify the PRC-005 twelve year maintenance intervals.

**1. Industry Support and Need for Record Retention Over 2 Maintenance Cycles.**

Industry stakeholders have demonstrated their overall support for the standard, including its document retention requirements, through (1) their participation in the development and approval of the standard under procedures adopted under FPA Section 215, and (2) their lack of objection to the document retention requirements, or any other record-keeping burdens, as analyzed and offered for comment in the Commission's rulemaking proceeding on PRC-005-2.

As background, Section 215 of the Federal Power Act requires a Commission-certified Electric Reliability Organization (ERO) to develop and enforce reliability standards, subject to Commission review and approval. In 2006, the Commission certified NERC as the ERO pursuant to FPA section 215, and approved rules of procedure for the development of reliability standards by NERC. NERC's rules provide that standards are to be developed by industry subject matter experts pursuant to an open, stakeholder process certified by the American National Standards Institute (ANSI). It is a stakeholder driven, collaborative process with the ERO, Regional Entities and other stakeholders developing and reviewing drafts, and providing comments, with the final proposed standard submitted to the FERC for review and approval.

The Reliability Standard development process is open to anyone materially affected by NERC's standards and is balanced, meaning that no two interest groups can dominate the process and no single interest group can defeat a matter. NERC uses a voting process that allocates each industry segment an equal weight in determining the outcome of any Reliability Standard action. In order for a Reliability Standard to be submitted to FERC for approval, it must receive two-thirds affirmative vote from the weighted industry segments.

Reliability Standard PRC-005-2 was posted for comment four different times during its development, and the document retention period received only limited negative comments in the early stages of its development. The draft team must provide explanatory responses to each comment, and later comment periods had not negative comments on the retention period. Ultimately, the version filed with the Commission as PRC-005-2 was approved by the industry segments with an 80 percent affirmative vote, well above the two-thirds majority required.

In addition, the standard drafting team explained the rationale behind the inclusion of a relatively long document retention period in supporting materials included with NERC's Petition, including an explanation as to why maintenance records need to be retained for two maintenance cycles:

PRC-005-1 describes a reporting or auditing cycle of one year and retention of records for three years. However, with a three-year retention cycle, the records of verification for a Protection System might

be discarded before the next verification, leaving no record of what was done if a Misoperation or failure is to be analyzed.

PRC-005-2 corrects this by requiring:

*The Transmission Owner, Generator Owner, and Distribution Provider shall each retain documentation of the two most recent performances of each distinct maintenance activity for the Protection System components, or to the previous scheduled (on-site) audit date, whichever is longer.*

This requirement assures that the documentation shows that the interval between maintenance cycles correctly meets the maintenance interval limits. The requirement is actually alerting the industry to documentation requirements already implemented by audit teams. Evidence of compliance bookending the interval shows interval accomplished instead of proving only your planned interval.

The SDT is aware that, in some cases, the retention period could be relatively long. But, the retention of documents simply helps to demonstrate compliance.<sup>1</sup>

Thus, the industry stakeholders who drafted the standard recognized that the document retention could be relatively long, but accepted that such a retention period was necessary to prove that the maximum maintenance intervals had not been exceeded.

Finally, the Commission's Notice of Proposed Rulemaking invited comment on *all* aspects of the proposed standard, including specifically inviting comment on the Commission's analysis of the information collection requirement burden under the proposed standard. None of the commenting parties objected to the data retention requirements.

## **2. Extended Intervals between Scheduled Maintenance**

Few entities will elect or be eligible to use the 12 year maintenance interval that would necessitate the retention of records for 24 years over two maintenance cycles. Under the proposed standard, only microprocessor-based relays are eligible for a 12 year maintenance interval, because only a microprocessor protection system can be fully monitored.<sup>2</sup> PRC-005-2 is applicable to Distribution Providers (DP), Generator Owners (GO) and Transmission Owners (TO). NERC has in their compliance

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<sup>1</sup> NERC Petition in FERC Docket RM13-7-000, Ex. E (Supplementary Reference and FAQ) at 34.

<sup>2</sup> A fully monitored protection system means that diagnostics are constantly being run on the system. If

an anomaly is discovered the system sends an alarm to a local control center. The person at the local control center then dispatches a repair technician to the site to investigate and repair the anomaly.

registry 544 DPs, 898 GOs and 346 TOs for a total of 1788 registered entities. Not all of these entities will have protection systems that contain fully monitored microprocessor relays because of the high initial cost of installing a fully monitored protection system. Only larger TOs, GO's and DPs that have a remote location will be able to justify installing a fully monitored system. We estimate that 20 percent of TOs, GOs and DPs will have such facilities and therefore will have the option of selecting a maintenance interval of 12 years. The remaining 80 percent of registered entities will have a maximum maintenance interval of 5 or 6 years, which would equate to record retention requirements of 10 or 12 years over two maintenance intervals.

Some background may explain why 12 years was chosen. Most generating units are on a 5 or 6 year maintenance interval. Generators must be off line in order to do maintenance on their protection systems. For a large unit (850 to 1000 MW) it can cost up to \$1 million/day (at \$35 to \$50/MWH) in lost revenue when a unit is down for maintenance. The subject matter experts (SME's) on the PRC-005-2 standard drafting team concluded that 12 years was a realistic maximum number for a fully monitored microprocessor protection system, because it would allow the GO to do its protection system maintenance over two scheduled outage cycles, *i.e.*, doing half of the maintenance and testing during one planned outage and half during the second planned outage. Thus, if the generator is on a 5 year cycle, it would have some flexibility to delay an outage up to two years. (Delaying an outage is very common within the industry because of the long lead times for obtaining necessary replacement components.) Generator owners of large units may justify installing fully monitored protection systems because of the enhanced reliability that these systems offer. If a given generating unit does have such a fully monitored system, a GO would generally want to set the maintenance interval for protection system components at a period of at least 10 years, which would equate to record retention requirements of 20 years over two maintenance intervals.

In the case of TOs and DPs, maintenance intervals are generally set at 5 or 6 year intervals, on a one substation at a time basis, to avoid disruption to the Bulk Power System.

### **3. Usual and Customary Record Retention Practices.**

As explained by the NERC drafting team members (quoted above), who are subject matter experts in the field of protection system maintenance and are employed by entities that will be subject to the standard, current auditing practices already require entities to preserve maintenance and testing records across two maintenance intervals. Thus, the revised standard aligns the standard with pre-existing industry audit practices.

It is usual and customary for GOs, TOs and DPs to maintain records over the life of a critical component of their systems. Records are currently retained in the industry for extended periods for both business/economic or planning purposes, as well as compliance with other regulatory (non-reliability-based) requirements. Such record retention practices include:

- Generators keep detailed records on what they did on each "internal" inspection on the boiler and the turbine. For example, the boiler tubes are subject to erosion where exposed to molten ash and are subject to fireside corrosion due to operating in a reducing atmosphere to minimize NOx emissions. Both of these actions wear away the tubes. Tubes must be replaced every 5 to 15 years depending on their location in the boiler. It is not uncommon to have to replace over 1000 tubes during a boiler inspection. Accurate records must be kept because the interval between replacements can be as high as 20 years.

- Entities operating nuclear assets must keep extensive long-term records, and must be able to trace the manufacturing history of a component back to the raw materials used in its manufacture.
- Records must be maintained on the work that is performed on the turbine for the life of the machine to accurately project future work. There are turbines and boilers operating today that were put in service in the 60's and the work records for such equipment are typically retained for the life of that component (generally now kept on electronic media, as further discussed below).
- Batteries are an important component of a protection system. Batteries are perishable and must be periodically replaced at a set interval, usually 20 years. Accordingly, registered entities typically keep detailed records for the life of a battery.
- The Code of Federal Regulations, 18 CFR 125.3, provides a schedule of record retention requirements for public utilities and licensees under the Federal Power Act, and includes numerous record retention requirements that exceed three years, including a requirement that hydro-electric plant owners keep operations and maintenance records for 25 years.
- Current auditing practices already require entities to preserve maintenance and testing records across two maintenance intervals.

Entities already use automated maintenance software packages to store maintenance records under the current version of PRC-005 (version 1).

### **Summary**

Industry experts developed the PRC-005 standard, including an explanation in support of the need for the lengthy document retention period (see supporting statement #7). Industry stakeholders voted in favor of the standard with an 80 percent approval, with no negative comments lodged in that vote on the documentation period. Further, no commenter filed objections to the document retention period in response to the Commission's Notice of Proposed Rulemaking. In conclusion, the data retention period is consistent with industry practice and has not prompted any negative comments or protests.