Efficiency Bulletin: 17-20
Further Streamline the Work Management Process

Previously issued efficiency bulletins (EBs) have targeted reductions in the number of routine preventive maintenance and surveillance activities and the administrative requirements associated with scoping, preparing and executing work using traditional work management processes. This bulletin builds upon these efficiency gains by providing a more streamlined process in preparing and executing maintenance activities that will contribute to overall improvements in equipment reliability.

Addressees: Chief nuclear officers, NEI APCs and INPO APCs

Issue: WM-P-14, Redesign the T-Week Process

Background:

- Across the industry, approximately 80 percent of all work has historically been routine preventive maintenance (PMs) and surveillance testing (STs) activities. The implementation of EBs 16-16, 16-25, 17-03a and 17-11 is projected to reduce this PM and ST workload by 25 percent.

- Approximately 20 percent of the remaining “new work” is corrective maintenance, deficient maintenance and modifications. Implementation of EBs 16-15a, 16-15b and 16-15c increases the use of minor maintenance and the fix-it now (FIN) team process to perform as much as 75 percent of this new work.

- The implementation of EBs 16-01, 16-02, 16-22 and 16-31 has reduced the number of PM work order changes, walkdowns, T-week meetings and work approvals required by the work management processes.
The traditional work control process uses a 12- or 13-week schedule template, often requiring up to 16 weeks for the organization to identify, scope, prepare, schedule and execute required work. However, fully implementing the above efficiency bulletins greatly reduces the need for a 16-week process to prepare, schedule and execute work.

The new streamlined work management process proposed by this efficiency bulletin includes a cycle plan with functional equipment groupings to lay out preventive maintenance and surveillance work with routine documents automatically generated. Automation of work management documents for routine work will be critical to the success of this streamlined process as it eliminates the need for someone to perform these actions, which allows greater focus on screening, approving, scheduling and executing work on a significantly reduced timeline. Attachment 1 is the top-level process map for the new simplified process. The traditional and simplified work management processes are further described in AP-928, “Online Work Management Process Description”, Revision 5.

This efficiency bulletin is green based on expected differences in the ability and timeline to implement the AP-928 Revision 5 simplified process which is dependent on the current maturity, culture, processes and automation at a given station. A streamlined work management process is a key enabler to the implementation of the transform the organization improvement opportunity scheduled for development and issuance in the fourth quarter of 2017.

Summary of Efficiency Opportunity

Desired end-state—The streamlined work management process continues to advance nuclear safety and plant reliability by:

- providing a long-range, resource loaded work management cycle schedule that includes required preventive and predictive maintenance, surveillance testing, and ready-to-work design changes
- providing a proper methodology for work prioritization to ensure the right work is done in the right time-period
- providing a consistent work management process for managing the risk to nuclear safety and plant reliability while maintaining equipment performance
- providing a work management process that optimizes the use of station resources—in a cost conscience manner—to support the safe and reliable operation of plant equipment.

Value proposition (vision of excellence)—Further simplifying the work management process will allow station resources to be used more efficiently, increasing maintenance activity output and improved equipment and plant reliability. Low-value administrative activities associated with work planning will be reduced, enabling managers and supervisors to spend more time coaching worker behaviors and preventing problems. Department managers and direct reports move into higher levels of performance accountability with the streamlined process for preparing and executing important work.

Maximum benefit is obtained when this efficiency opportunity is implemented in conjunction with efficiency bulletins:

- EB 16-01, Eliminate Administrative Changes to Preventive Maintenance Work Orders

Key to Color Codes:

Red: NSIAC initiative – full participation required for viability
Blue: Action expected at all sites, but is not needed for broad industry viability
Green: Utility discretion to implement, consistent with its business environment

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EB 16-02, Implement Graded Approach to Walkdowns
EB 16-15a, Work Screening Process
EB 16-15b, Utilizing Minor Maintenance
EB 16-15c, FIN Team Efficiency
EB 16-16, High-Cost, Noncritical Preventive Maintenance Reduction
EB 16-22, Implementing an Effective and Efficient Work Management T-Week Process
EB 16-25, Critical Component Reduction
EB 16-31, Pre-Approval Criteria for Work Execution
EB 17-03a, Value-Based Maintenance
EB 17-11, Maximize Implementation of the Surveillance Frequency Control Program

- Why is it important?—Overall, simplifying the work management process will allow department managers and supervisors to quickly respond to new equipment deficiencies while maintaining the schedule and provide more time to focus on preparing and executing work of greater importance.

- Industry benchmark value(s)—High levels of equipment reliability is maintained as monitored by the equipment reliability index (ERI). Critical and noncritical maintenance backlogs are reduced or maintained at industry best performance levels. Weekly schedule completion is maintained at current performance and safety-system outage performance does not degrade. Safety system unavailability does not increase from repeatedly and unnecessarily taking these systems out of service because of improper scheduling.

- Measure of effectiveness—Work management meetings and milestone touchpoints are greatly reduced or eliminated. This will allow department managers and supervisors to achieve higher levels of individual and team accountability with the streamlined process.

Relevant Standards

- Performance Objectives and Criteria (INPO) WM.1, Work activities are managed during both on-line and outage periods to support safe and reliable operation.

Guidance

AP-928, “Online Work Management Process Description”, Revision 5 discusses the traditional and simplified work management processes and identifies that in order to implement a streamlined work management process, the following three key supporting attributes need to be fully in place:

- Attribute 1—A detailed cycle plan that systematically lays out an entire cycle of work with as much scheduling detail as possible.
- Attribute 2—A well-established functional equipment grouping (FEG) of systems to support the cycle plan.
- Attribute 3—The ability to automatically generate the below required documents for “routine work,” using “standardized” or “library” documents, if they exist. Note: these automatically generated documents will still require the applicable review, approval and authorizations as performed under the traditional process.
  - Preventive maintenance work orders
  - Surveillance test work orders
  - Radiation work permits
  - Clearances tied to the PM or ST
  - Parts requests
  - Risk reviews
Recommend Industry Actions

- The Work Management Industry Working Group monitors industry metrics and periodically updates INPO AP-928 to reflect operating experience.

Change Management Considerations

Industry Activities

- Industry webinar to provide background for initiative, INPO discussion, and provide an open forum to clarify expectations and ask questions.
- Discuss at regional maintenance, work management and operations managers meetings.

Company Actions

- Perform gap analysis of station current work management process requirements against AP-928 Revision 5 and implement appropriate changes. As part of this gap assessment, each station should determine if the existing station culture, processes and automation of work management activities supports implementation of the simplified work management system or requires continuation of the traditional work management system as described in AP-928 Revision 5.
- If the simplified work management process is selected as the work management method, use a change management plan that communicates the intent, desired outcome and purpose of the proposed change. Revise as necessary the work management processes and procedures to support this methodology. Specific actions that can be taken include:
  - Update the 18-month or two-year cycle schedules to ensure it is resource loaded and fixed and includes all PMs, surveillances and ready to perform modifications.
  - Ensure the developed cycle plan contains appropriate functional equipment groups.
  - Eliminate (as appropriate) standard T-Week and milestone meetings except for scope selection, scope freeze and schedule freeze meetings.
  - Fully implement EB 16-15a, EB 16-15b and EB 16-15c to use the FIN team, minor maintenance, tool pouch and single person tasks, based on risk and complexity, versus having all new work required to go through the T-Week process.
- Review the implementation of AP-928 Revision 5 and share findings with the industry working group for broader industry analysis.

Guiderails

- Full implementation of this efficiency bulletin can result in elimination of many meetings and touch points that have historically been used to verify alignment around schedule scope and implementation through simplification and automation of many supporting processes. This may result in critical and noncritical backlogs increasing, increased safety system unavailability, important work activities not getting done and resources not being fully used. Eliminating the T-week meetings may also be culturally uncomfortable and will require leadership engagement to discuss and resolve potential concerns. Consequently, stations should ensure the following guardrails are in place:
  - A well-developed communications strategy is developed in implementing this efficiency bulletin to support the alignment and engagement among multiple levels of the organization. This would include alignment meetings, videos and department meetings.
If the simplified work management process is implemented, monitor critical and noncritical backlog growth, safety system unavailability, equipment reliability and weekly work schedule completion rate for potential adverse consequences.

- Establish contingency actions, such as a phased elimination or reinstitution of T-week meetings, based on work management performance under the simplified process.
- Scheduled work management self-assessments should determine the effectiveness of changes implemented from this efficiency bulletin and identify and resolve unintended consequences.

- Many critical components were downgraded to noncritical through the implementation of EB 16-25, and many system and program health reports were eliminated through the implementation of EB 16-33 and EB 16-34. Since these processes were previously effective in prioritizing preventive and corrective maintenance activities, it is vital that engineering fully participate in scope selection meetings to advocate resolution of important system deficiencies.

**Report Your Site’s Results**

Please report your company’s implementation of this improvement opportunity, including the date of completion. Send this information along with your company point of contact to EfficiencyBulletin@NEI.org.

**Industry Contacts**

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**Industry Approval:**

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Attachment 1: Top-Level Process Map for Simplified Work Management Process

**SCREENING PHASE**
- Assess Plant Risk
- Evaluate Operations Impact
- Establish Priority
- Assign Classification
- Outage or On-Line
- Assign Work Window – if applicable
- Resource/Material Estimates
- Work Package Level

**SCOPING / SCHEDULING PHASE**
- Approval all AUTO generated documents
- Establish schedule by Plant Risk
- Continue Work Levelization
- Integrate FEG/System Window Work if restrains are cleared
- Integrate Non-FEG/system window work once restrains are cleared

**EXECUTION PHASE**
- Evaluate Emergent Work and Assess Risk
- Monitor Performance/Resolve Issues
- Complete Work/Perform PMT
- Return Equipment to Service
- Conduct Status Updates
- Conduct Turnovers

**RECURRING / ROUTINE WORK**
- PM’s and Surveillances
  - Auto Generation of Routine PM’s and Surveillances and Support Activities
  - O Clearance Orders
  - O Parts
  - O RWP’s
  - O Risk Reviews
  - O Permits

**POST WORK WEEK ANALYSIS PHASE**
- Work Groups Analyze performance Data
- Conduct Critique Meetings – as required
- Trend Lessons Learned
- PM Review/Optimize PM’s