

# efficiency bulletin

July 12, 2016

Color Code: Blue  
December 2016

## Efficiency Bulletin: 16–15a Work Screening Process

Effective and efficient screening of incoming work is an important step in the work management process. In addition to proper work classification and prioritization, the identification of the most efficient and cost-effective process to prepare and execute work is required to maximize the reliability of plant equipment while effectively and efficiently using station resources.

**Addressees: Chief nuclear officers, NEI APCs, and INPO APCs**

**Issue: WM-P-06, Work Screening Process**

### Summary of Efficiency Opportunity

- Desired end-state—A work screening team, typically made up of key decision-makers from operations, work control, engineering and the maintenance fix-it-now (FIN) team, reviews and screens new work requests. The team classifies, prioritizes and identifies the most cost-effective and efficient means to prepare and execute work. This will allow limited station resources to immediately focus on preparing, coordinating and implementing the right work in the right time frame. Additionally, the operational risk associated with performing work is determined as well as management level and approval requirements.
- Value proposition (vision of excellence)—An effective work screening team quickly determines the most efficient and cost-effective process of performing work using tool pouch, minor maintenance and single person tasks or detailed planning and scheduling. The screening process is used to funnel as much work as possible to the FIN team. This will result in shorter cycle times for fixing degraded equipment and will free planning, scheduling, tagging and major maintenance resources and improve plant reliability.



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- Maximum benefit is obtained when this efficiency opportunity is implemented in conjunction with efficiency bulletins EB 16-15b, "Utilizing Minor Maintenance" (WM-P-01), and EB 16-15c, "FIN Team Efficiency" (WM-P-02).
- Why it is important?— Effective and efficient screening of incoming work are among the most important steps in the work management process. The screening team can quickly identify the most effective and cost-efficient method of planning and executing work, allowing department managers and supervisors across the organization more time to focus on preparing and executing important work and improving equipment reliability. Additionally, another objective of the screening process is to funnel as much work as possible to the FIN team. The FIN process typically is the most efficient method to accomplish maintenance and will result in shorter cycle times for fixing degraded equipment.
- Industry benchmark value(s)—High levels of equipment reliability are maintained as monitored by the equipment reliability index (ERI). Critical and noncritical maintenance backlogs are maintained at current performance. Weekly schedule completion is maintained at current performance and safety system outage performance does not degrade.
- Measure of effectiveness—An increase in all work activities prepared and executed as minor maintenance, tool-pouch and single person tasks, and an increase in all work items completed by the FIN team as compared to current baseline number of activities when this bulletin is implemented. Stations should progress toward or achieve target values of 60 to 65 percent minor maintenance and 75 percent of all new incoming work and 90 percent of all new high-priority work completed by the FIN team.

### **Relevant Standards**

- Performance Objectives and Criteria (INPO) WM.1-12, Operations and other key organizations screen new work collaboratively to determine the appropriate priority and classification of an identified deficiency based on its safety significance, operational impact and effect on emergency preparedness. The collaborative decision should also consider the effect on core damage frequency or risk for the mode of operation in which the work is to be performed.

### **Guidance**

- INPO – AP-928, Work Management Process Description, Revision 4.
- Work Management White Paper, Work Screening, Work Management Working Group, April 5, 2016 (This white paper is posted on the INPO Member Web site, under Work Management, and attached to this bulletin)

### **Recommend Industry Actions**

- Revise the work management processes and procedures to fully align with the guidance provided in INPO AP-928, Work Management Process Description and the Work Management White Paper, Work Screening, Work Management Working Group, dated April 5, 2016. Specific actions should consider the efficiency bulletins on "Utilizing Minor Maintenance", EB 16-15b, and "FIN Team Efficiency", EB 16-15c.

#### 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

### *Industry Activities*

- Industry webinar to provide background for initiative, INPO discussion, and provide an open forum to clarify expectations and ask questions. Information on the webinar is available at <https://web.inpo.org/Pages/Nuclear-Promise-Issues.aspx>
- Discuss at regional maintenance and work management meetings and routine industry conference calls.
- Discuss at regional operations meetings.
- Hold a workshop with key industry personnel in maintenance, work management and operations to update and discuss during the Summer Utility 2016 meeting.

### *Company Actions*

- Implement changes to the work management processes and procedures to fully align with the guidance provided in INPO AP-928, Work Management Process Description and the Work Management White Paper, Work Screening, Work Management Working Group, April 5, 2016. Specific actions should consider the efficiency bulletins on "Utilizing Minor Maintenance", EB 16-15b; and "FIN Team Efficiency", EB 16-15c.
- Use a change management plan that communicates with intent the desired outcome and purpose of the initiative.
- Share findings with the industry maintenance, work management and operations working groups for broader industry analysis.

### **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](mailto:EfficiencyBulletin@NEI.org).

### **Industry Contacts**

- Industry champions for this issue: Jim Domitrovich, 610-765-5341 [jim.domitrovich@exeloncorp.com](mailto:jim.domitrovich@exeloncorp.com) and John McDonald, 205-992-6872, [jomcdona@southernco.com](mailto:jomcdona@southernco.com)
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- On the web: [www.nei.org/bulletin1615a](http://www.nei.org/bulletin1615a)

### **Industry Approval:**

**Dennis Koehl, CNO Lead**



**David P. Igyarto, Institute of Nuclear Power Operations**



**Anthony R. Pietrangelo, Nuclear Energy Institute**

*Anthony R. Pietrangelo*

Attachment

# **Work Management White Paper**

## **Work Screening**

**Work Management Working Group**

**April 5, 2016**

## Attachment

The Work Management Working Group established a subcommittee to look at the revised Work Screening Process described in AP-928 revision 4. The overall objective was to provide a document to supplement AP-928 that describes the attributes necessary to have an effective and efficient work order screening process and to take full advantage of identification of tool pouch maintenance, Fix-it now team assignments, minor maintenance, single person task, and pre-release opportunities.

### Work Screening

#### Objective:

Effective and efficient screening of incoming work is one of the most important steps in the work management process. Proper work classification and prioritization are required to maximize the reliability of plant equipment while effectively and efficiently utilizing station resources. Classification of work into **corrective, deficient, or other** maintenance will help stations understand the overall health of their systems and components. Because corrective and deficient maintenance can differ, these classifications alone cannot sufficiently establish which work should be scheduled and accomplished first. Stations should not overemphasize the significance of corrective maintenance, based solely on the work classification. True significance can only be ascertained when the work classification is used in conjunction with the system and operational significance of the equipment or system being worked on. Clearly defining these three classifications of work, along with an effective prioritization system, an engaged work screening team with decision makers, will prompt discussion and ultimately determine when and why work will be scheduled and accomplished.

Work screening should also determine the most efficient process of performing work using Tool Pouch, Minor Maintenance or a level 1 or level 2 work package. These work documents represent the typical four levels of work packages in the graded approach to planning. Additionally, another objective of the screening process is to funnel as much work as possible to the Fix-it-now (FIN) team. The FIN process is typically the most efficient approved method to accomplish maintenance and needs to be taken full advantage of.

Characterize and prioritize work such that station resources can focus on preparing, coordinating, and implementing the right work in the right timeframe. Evaluate the risk associated with performing work to determine risk management level and approval requirements.

Suggested Quorum - The typical work screening team consists of strong decision makers with the following skill sets:

## Attachment

Typical Core Team:

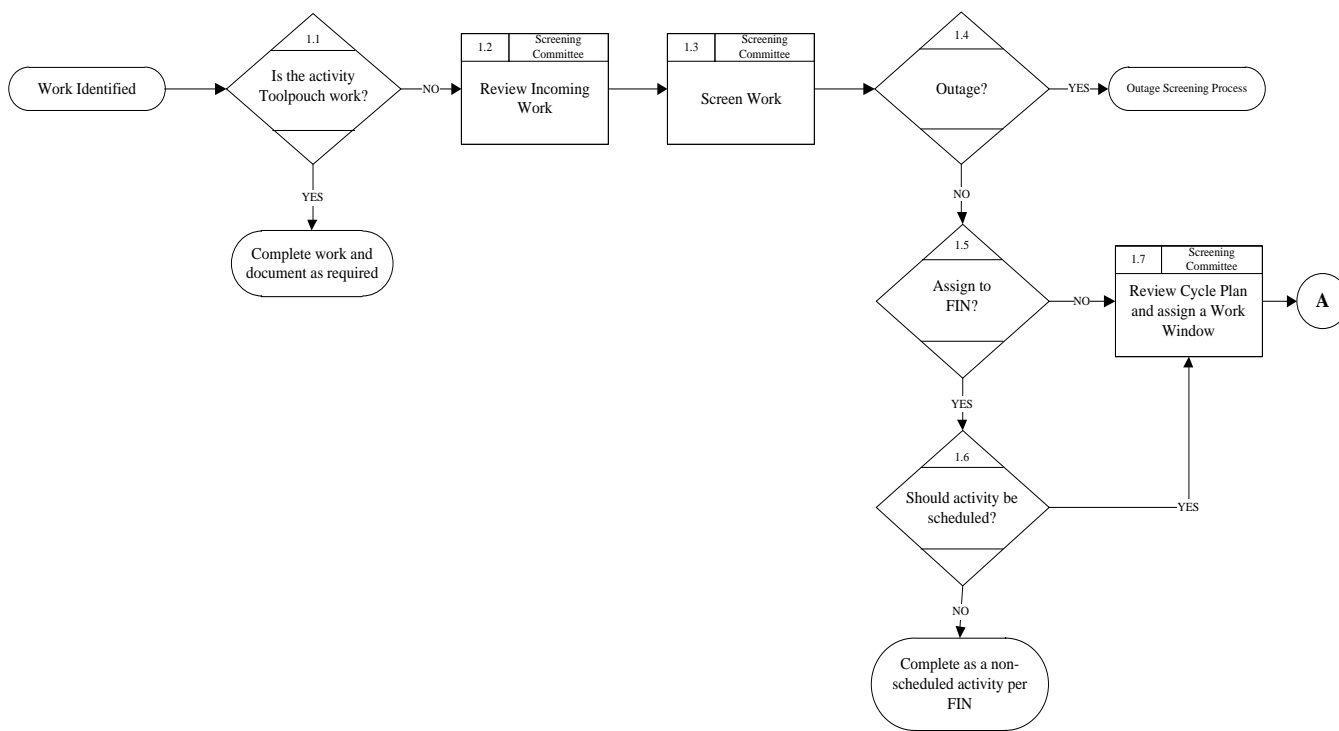
Lead	Typically Work Management representative with knowledge of AP-928/913, cycle plan, PM strategy
Operations	Senior Operator license knowledge, current on operational standards and plant conditions, PRA and operational risk assessment aptitude, understanding of OPS challenges, familiar with work order prioritization process
Maintenance	Knowledge of Maintenance standards – what can be performed ( toolpouch, minor maintenance, or a detailed work package required), skill sets, and resource availability
FIN	Typically the FIN lead. Knowledge of FIN capability and capacity.
Engineering	Knowledge of component / work history, system / program health, Maintenance Rule (10CFR50.65) impacts, component critical classification
Planning	Knowledge of duplicates, equipment history, and if PM performance will correct this deficiency Knowledge of planning history. Knowledge of work order classification standards. The Maintenance representative may also be the planning representative depending on the plants organizational structure

Team support may be required from those with technical knowledge attributes as necessary:

Support Members – as needed:

RP	Knowledge of current plant radiological conditions and component locations. Knowledge of radiological work requirements
Security	Knowledge of the security plan and equipment required to support that plan
EP	Knowledge of required EP equipment and component
Chemistry	Knowledge of required chemistry equipment and components
Materials	Knowledge of equipment lead times and obsolescence
PRA Risk representative	Knowledge of the PRA programs and the current PRA status (Typically Ops /Work Management would fulfill role)
Facilities	Knowledge of Maintenance standards – what can be performed ( toolpouch, minor maintenance, or a detailed work package required), skill sets, and resource availability
Safety	Knowledge of Industrial safety issues, risk associated with work performance, and the work classification standards
Fire Protection	Knowledge of current fire protection equipment status, fire plan, and

Screening Phase Process Map from the AP-928 REV 4



1.1 Is the activity toolpouch work?

If your process and resource will allow the use of toolpouch maintenance, it is the most efficient way to complete work. Examples of work that can be performed tool pouch are found in appendix B on the INPO Work Management Web page  
 Since tool pouch work will not be scheduled, it is recommended that toolpouch work be completed within 72 hours or brought back to screening (1.2) to ensure the work does not get lost in the process.

1.2 Review Incoming work

Note: An initial screening of the deficiency should have been or should be performed, typically by the FIN team, to determine if the work can be performed immediately with no required documentation

The timely identification and communication of issues to Operations should be a station expectation. Operations make the initial operability evaluation and Operations typically can perform the function of the work screening team for critical, high priority work.

During this preparation activity for the upcoming screening meeting, individuals should prepare by performing the following:

- Verification/ validation of the issue may be required, when required is typically performed by the FIN team or a planning representative.

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- Work should be reviewed to determine the specific detail to determine the role and function of the group required to perform the work.
- Enough investigation is performed to ensure a full understanding of the problem and required work to resolve.
- Resource and material estimates to complete the work
- Determination of proposed work package level (toolpouch, minor maintenance, level 2 or level 1)

### 1.3 Screen work

This is a collegial review of the deficiency by the team.

The screening team will need to meet as necessary (typically daily) to ensure timely categorization and prioritization of work. Typically all incoming work is screened within 3 working days.

The Cycle Manager (WM representative) prepares and distributes list to the team members for review. Proper meeting preparation is a key to efficient and effective use of the team members, see step 1.2. Collaborative input should be gained prior to the meeting.

Screening will validate the problem description, identify duplications (reviewed as part of the prep for the meeting), the need for additional investigation or troubleshooting, back-up the initial operability and reportability determinations. Work will be coded per the AP-913 and AP-928 (CC,CN,DC,DN, etc.) classification and the station's prioritization matrices.

The required level of work package preparation (toolpouch, minor maintenance, level 2 or level 1) along with the identification of work that will be performed as a single person task needs to also be addressed during the screening meeting.

The operations representative should discuss work packages that should be considered candidates for operations pre-release authorization. Pre-release will be reviewed again later during the work management process, but a preliminary assessment can be made.

The work screening team will validate the work classification and prioritize according to the station's prioritization matrices. Items to consider, but not limited to, are the following:

- Is there a need for additional walk down and/or troubleshooting?
- Can the work be performed on-line, is a power reduction required, or must the work be performed during an outage?
- Should the work be on the forced outage list?
- Does the work affect reactivity?
- Does the work reduce any safety margins or increase Probability Risk Analysis/Assessment (PRA)
- Does the work involve repairing any type of leak, and if so, is the leak classified per the leak management program?
- Will the work require a plant modification?
- Will there be any Maintenance Rule (MRule) impact by doing this work?

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- Does the work have any Security impact or implication?

### 1.4 Outage?

Determine if the work can be completed on-line, should be performed during a refueling outage, and/or should be included on the forced outage list.

Each station should have criteria for determining if work should be performed with the unit attached to the grid or not. In many cases, this determination is dependent on the level of risk the station is willing to accept. For example, the tendency to put work in the outage versus perform on-line may be driven by regulatory margin, operational margin/risk to generation, economics, weather, management philosophy, or proximity to the next outage. A method of communicating the results of those decisions is an important part of the screening process.

### 1.5 Assign to FIN?

Typically, the FIN process is the most efficient approved method to get work completed. The FIN team seldom needs work scheduled because of their Senior Reactor Operator (SRO) interface with the control room. Most importantly, FIN very seldom needs to use the stations work management milestone process to accomplish work.

Because of these efficiencies, FIN should be the work group of choice and as much work as possible should be routed to the FIN team.

### 1.6 Should the activity be scheduled?

This decision can be based on risk to the plant with consideration of maintenance rule, is a power reduction required, and divisional alignment. This should be a function of the cycle manager with input from the team. As much work as practical should be performed by the FIN team. In many cases, this work does not require a specific scheduled workweek. However when the work requires a workweek, then proceed to step 1.7

### 1.7 Review the Cycle Plan and assign a Work Window

It is always acceptable to schedule minor maintenance. Having an activity scheduled provides the required reviews that are part of the work management process. For example, a minor maintenance activity that is scheduled, will force the reviewed by radiation protection, operations clearance group, supply chain, operations SRO for impact, and other interfacing groups. The schedule not only forces the review by the groups, but also identifies the fact that the activity will be performed

### Conclusion of the screening process

At the conclusion of the screening phase, the team should have an understanding of the AP-913 classification, AP-928 work code, and station priority with any specific scheduled date due to functional equipment groupings.

Additionally the team will have determined if the work should be performed on-line or in an outage.

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Once determined that the work can be performed on-line, the team should have assigned as much work as possible to FIN and if not have an understanding why not. The team should have determined that the proposed work can be performed by a single person (single person task) and have the ability to annotate that fact for scheduling purposes. Additionally, a discussion of pre-release candidates should have been held.

The team should have also determined what work package level will be used, with extreme emphasis on toolpouch and minor maintenance. If scheduling the work is necessary, then input from cycle manager is used to determine the best opportunity to schedule the work.