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|  | <b>PLANT OUTAGE MANAGEMENT</b>                       |
| Number:<br><b>N/A</b>   | Subject:<br><b>Tips on Planned Outage Management</b> |
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Scheduled outages are carried out to minimize the impact on plant generation, control costs, and maximize outage effectiveness. These objectives are achieved by:

1. Identifying all tasks requiring major equipment or plant outages within the CMMS as maintenance items are identified. O&M management personnel are involved in assigning outage status to maintenance items.
2. Developing a detailed schedule to track the outage from the pre-shutdown testing through major repair work to post-repair testing. This schedule includes all tasks including corrective maintenance actions, contractor work, and scheduled preventive maintenance. Lockouts and tagouts are prepared and hung as scheduled on the overall plan.
3. Identifying all necessary materials and ensuring that the material is available to support planned schedules. Multiple unit outages will be scheduled to allow refurbished parts from one component to support other components.
4. Assigning work to either plant staff or contractors as cost-effective and appropriate. The NAES general practice is for plant staff to conduct preventive maintenance and actions requiring a high degree of plant knowledge, while contractors perform tasks needing equipment and/or expertise which is not cost-effective to maintain at the plant (e.g., code welding, safety valve testing). Contractors perform other tasks, as appropriate, to minimize outage time and costs.

NAES Outage Management engineers closely monitor contractor effectiveness and determine the contractor tasks prior to each outage. The Plant Manager develops a list of preferred contractors based on quality, cost, responsiveness, and safety, with contracts competitively bid to this list. Prior to each outage, meetings are held between plant supervisors and contractors to establish communications, integrate plans and assign specific responsibilities. All contractor personnel also attend plant safety orientation prior to commencing work.

5. During the outage, progress and problems are assessed at least daily with meetings conducted to effectively coordinate work. Post-outage reviews and reports document problems and successes to improve subsequent outages.

## **Unplanned Outage Response**

Unplanned outages use the same work control and coordination processes that are used for planned outages; however, the work scope is focused on that work necessary to determine the root cause, to repair the component causing the outage as well as collateral damage, if any, and to return the plant to generation. Additionally, maintenance items previously identified as "ready to work" may be performed based on available time and significance of the work, etc. "Preferred list" contractors will be called in to support the outages as appropriate.

NAES Outage Management uses a Critical Spares List to support rapid repair of major components. This program includes preparation of a list of critical components, with instructions provided regarding whom to contact to promptly initiate repairs, purchase a replacement, or rent a substitute, as applicable. The list also includes as much vendor data on the component as possible, as well as documentation of authorized or recommended substitutes.