OUTAGE MANAGEMENT PROGRAM

1.0 PURPOSE

The purpose of this procedure is to define an outage management approach to planned outage work and long-term outage planning and to establish the responsibilities and relationships required to implement an effective Outage Management Program.

2.0 DEFINITIONS

2.1 OUTAGE

These are the North American Electric Reliability Council's (NERC) definitions. They specify that an outage exists whenever the unit is not synchronized and is not in a Reserve Shutdown (i.e., not in service with the system and not available for service). There are six distinct types of outages, each depending on the extent to which the outage could have been postponed.

- Planned Outage

  Planned Outgages are scheduled well in advance and are of a predetermined duration. Turbine overhauls or inspections, testing, and nuclear refuelings are typical planned outages. Characteristically, planned outages are planned well in advance and usually occur during those seasons of the year when the peak demand on the system is lowest, have flexible start dates, have a predetermined duration, last for several weeks, and occur only once or twice a year.

- Maintenance Outage

  An outage which can be deferred beyond the next weekend but requires that the unit be removed from service, another full outage state or a reserve shutdown before the next Planned Outage. Characteristically, maintenance outages can occur anytime during the year, have flexible start dates, may or may not have a predetermined duration and are much shorter than Planned Outages.

- Scheduled Outage Extension -

This is the extension of a Planned Outage (PO) or Maintenance Outage (MO) beyond its originally estimated completion date, such date being established at the start of these outages, if predetermined.

A Scheduled Outage Extension (SE) may be used in those instances where the original scope of work requires more time to complete than originally scheduled. The SE should not be used for those instances where unexpected problems or delays are encountered that render the unit in question out of service past the expected end date of the PO or MO. These unexpected events should be reported as either Unplanned (Forced) Outage - Immediate, or Startup Failure (SF) as appropriate. A Scheduled Outage Extension (SE) must start at the same time (month, day, hour, minute) the PO or MO (being extended) ends.

- Startup Failure

This is an outage that results from the unsuccessful attempt to place the unit in service following the unit's being in an outage or reserve shutdown state. The unit is considered to be in a Startup Failure if the unit cannot be placed in service within the Utility's specified time for the specific startup and/or requires significant repairs to the equipment or control systems which halted the normal startup cycle. Repeated failures to start for the same reason are considered as part of the same Startup Failure. The Startup Failure begins when the unit is no longer able to continue its startup cycle or surpasses the originally estimated synchronization time. The Startup Failure ends when the unit is synchronized or enters some other (permissible) outage or shutdown state. A Startup Failure (SF) must start at the same time (month, day, hour, minute) the previous full outage ends.

- Unplanned (Forced) Outage - Immediate

An outage that requires immediate removal of a unit from service, another full outage state or a reserve shutdown. These types of outages result from immediate mechanical/electrical/hydraulic control systems trips and operator initiated trips/shutdowns in response to unit alarms.

- Unplanned (Forced) Outage - Delayed

  This is an outage which does not require immediate removal from service but requires that a unit be removed from service within six hours.

- Unplanned (Forced) Outage - Postponed

  This is an outage which can be postponed beyond six hours but which requires the unit to be removed from service before the end of the next weekend.

2.2 DERATING

A derating exists whenever a unit is limited to some power level that is less than the unit's Net Maximum Capacity (except when the limitation occurs entirely during an outage). The cause of the limitation can be equipment failures, regulatory restrictions, or any other operating restraint.

2.3 OUTAGE WORK ORDER PACKAGE

A maintenance work order (MWO) which has been identified and verified as requiring an outage for implementation and all of the associated documentation required to implement the work order.

2.4 OUTAGE SCOPE

An assembly of Outage Work Order Packages, Surveillance Task Sheets, Special Tests or Preventative Maintenance Work Orders. The Outage Scope includes all work to be performed during a specific outage.

2.5 CLEARANCE PACKAGE

A system clearance with all of the Outage Work Orders which can be performed under that clearance attached to it.

3.0 RESPONSIBILITIES

3.1 OUTAGES AND PLANNING MANAGER (OPM)

The Outages and Planning Manager is responsible for:

3.1.1 The formation and subsequent performance of an Outage Management Team.

3.1.2 Planning, establishing and controlling scope of outages.

3.1.3 Developing and approving all outage schedules.

3.1.4 Directing and managing outage execution which comes at main generator breaker trip and completes at main breaker closure.

3.2 MANAGER OPERATIONS (MO)

The Manager Operations is responsible for:

3.2.1 The orderly shutdown of the plant and for maintaining the plant in a safe operating condition during the outage.

3.2.2 Reviewing outage work packages to ensure that operational safety is maintained and that no outage work package results in a violation of Technical Specifications.

3.2.3 Identifying to the Outage Scheduling Superintendent any Limiting Conditions of Operations (LCO's) that are resolved by an outage work package and review of outage schedules for adherence to those LCO's.

3.2.4 Directing during an outage the valve line-up, tagging and clearance activities required by the Outage Schedule.

3.2.5 The orderly startup of the plant following the completion of a plant outage.

3.3 MANAGER MAINTENANCE (MM)

The Manager Maintenance is responsible for:

3.3.1 Ensuring that Work Orders are generated for all preventative maintenance work which requires an outage.

3.3.2 Providing support to the Outage Scheduling Superintendent for the pre-planning and analysis of outage work order packages as requested.

3.4 NUCLEAR SAFETY AND COMPLIANCE MANAGER (NSACM)

The Nuclear Safety and Compliance Manager will:

3.4.1 Provide appropriate listings of all Surveillance Tests (ST's) which require an outage and the corresponding frequency requirements.

3.4.2 Provide support to the Outage Scheduling Superintendent in reviewing outage schedules as they relate to surveillance test requirements and licensing commitments for plant modifications.

3.4.3 Ensure that all appropriate surveillance task sheets are issued in a manner which will allow them to be included in appropriate outage packages.

3.5 NUCLEAR SECURITY MANAGER (NSM)

The Nuclear Security Manager is responsible for:

3.5.1 Reviewing outage schedules to define and ensure proper support for badging, escorts, firewatch and access control will be available for an outage.

3.5.2 Providing outage support as requested by the Outages and Planning Manager.

3.6 PLANT TRAINING AND EMERGENCY PREPAREDNESS MANAGER (PT&EPM)

The Plant Training and Emergency Preparedness Manager is responsible for:

3.6.1 Ensuring that General Employee Training (GET) and Respirator Training is available to outage support personnel.

3.6.2 Ensuring that specialized outage employee training as designated by the Outages and Planning Manager or the responsible Superintendent/Manager is available.

3.7 WORK PLANNING AND CONTROLS SUPERINTENDENT (WPCS)

The Work Planning and Controls Superintendent is responsible for:

3.7.1 Identifying any work order which requires an outage.

3.7.2 Verifying that each outage work order is pre-planned and pre-packaged for work and that the required material is staged.

3.7.3 Notifying the Outage Scheduling Superintendent that a work order is outage related and that it is ready for work.

3.7.4 Requisitioning "in stock" material for work order execution.

3.7.5 Providing installation status to the Outage Scheduling Superintendent for work order execution during a plant outage.

3.8 MODIFICATIONS AND OUTAGE SUPPORT GROUP SUPERINTENDENT (MOSGS)

The Modifications and Outage Support Group Superintendent is responsible for:

3.8.1 Verifying that all special order (non-stock) material/equipment required for plant modifications is requisitioned and expedited.

3.8.2 Developing and implementing a plan for the isolation, staging and distribution of material/equipment required to support an outage.

3.8.3 Performing a constructability study for each outage related plant modification.

3.8.4 Directing the work efforts of Outage Area Supervisors who during outage execution:

3.8.4.1 Are the field source for implementing any decisions.

3.8.4.2 Prioritize area work activities should conflicts arise.

3.8.4.3 Ensure that work throughout the area is not creating safety problems.

3.8.4.4 Resolve restraints by prompt interfacing with appropriate persons.

3.8.4.5 Conduct one-on-one turnover to "opposite shift" Area Supervisors.

3.8.4.6 Elevate restraints/problems, if unable to solve, for outage shift management action.

3.8.4.7 Maintain logs of outage execution to include variances from outage schedule for input into the Outage Report.

3.9 HEALTH PHYSICS SUPERINTENDENT (HPS)

The Health Physics Superintendent is responsible for:

3.9.1 Reviewing the outage scope and schedule to ensure that proper manpower, material and dosimetry support will be available during an outage.

3.9.2 Implementing the ALARA Program and establishing ALARA goals for planned outages.

3.9.3 Participating in the pre-planning of potentially high exposure tasks.

3.9.4 Maintaining current radiological survey data required for ALARA outage job reviews.

3.9.5 Ensuring that timely ALARA pre-job, post-job, design and modification reviews are performed.

3.9.6 Establishing and maintaining a radiation and contamination control program.

3.9.7 Issuing Radiation Work Permits (RWP) in support of the outage plan.

3.9.8 Performing and documenting radiation and contamination surveys, air sampling and analysis.

3.9.9 Determining protective clothing, personnel respiratory protection, stay times and shielding requirements.

3.10 CHEMISTRY SUPERINTENDENT (CS)

The Chemistry Superintendent is responsible for:

3.10.1 Reviewing outage schedules to ensure sufficient Chemistry department personnel, material and equipment are available to maintain the plant within chemistry specification tolerances during an outage.

3.10.2 Participating in system and component inspections during outage execution.

3.10.3 Establishing plant chemistry in-tolerance conditions that support the rapid return of the plant from outage condition to full power operation.

3.11 ENGINEERING SUPPORT SUPERINTENDENT (ESS)

The Engineering Support Superintendent is responsible for:

3.11.1 Identifying to the Outage Scheduling Superintendent all planned and potential plant modifications along with information related to their design and procurement status.

3.11.2 Coordinating scheduling and cost studies with the Outage Scheduling Superintendent to facilitate the development and implementation of long-range plans.

3.11.3 Ensuring the scheduled issuance of design change packages for installation of plant modifications in order to facilitate early development and analysis of comprehensive outage work packages.

3.11.4 Requisitioning of non-stock equipment and material for design change package implementation.

3.11.5 Providing the Inservice Inspection Plan (ISI) to the Outage Scheduling Superintendent and ensuring that all work orders required to support the ISI Plan are issued per the schedule for inclusion in the outage scope.

3.11.6 Providing engineering support upon commencement of an outage, as requested by the Outages and Planning Manager.

3.12 OUTAGE SCHEDULING SUPERINTENDENT (OSS)

The Outage Scheduling Superintendent is responsible for:

3.12.1 Scoping, developing, modifying, statusing and evaluating all planned outage schedules and forced outage schedules greater than seventy-two hours (see Procedures 01000-C and 29537-C for details).

3.12.2 Scheduling and tracking the development and implementation of outage related plant modifications.

3.12.3 Establishing implementation priorities for all activities which require an outage.

3.12.4 Developing and monitoring of capital budgets and forecasts, Operations and Maintenance (O&M) outage estimates and O&M refueling budget and budget control.

3.12.5 Ensuring that pre-outage work is defined and scheduled and providing schedule assistance to department managers/superintendents.

3.12.6 Staffing at outage commencement a communications center that provides current work order installation information, scheduling support and conference room facilities for problem discussion/resolution meetings.

3.12.7 Generating reports to management on pre-outage planning, conduct of outages and post-outage evaluations.

4.0 OUTAGE MANAGEMENT

4.1 GENERAL

4.1.1 Outage Management encompasses:

- o development of long-term, planned, maintenance and forced plant outage detail and summary plans,
- o organization of personnel and logistical support to ensure successful plan execution,
- o direction/coordination of plant outage work activities,
- o evaluation of actual outage activity performance against planned performance and
- o control of outage related budgets.

4.1.2 The Outages and Planning Manager directs the Outage Management Program which includes:

a. Long-range Outage Plans - Section 4.2

b. Planned, Maintenance and Forced Outage Plans - Section 4.3.

c. Outage Preparation - Section 4.4.

d. Outage Execution - Section 4.5.

e. Outage Performance Evaluation - Section 4.6.

f. Outage Budgets/Estimates - Section 4.7.

4.2 LONG-RANGE OUTAGE PLANS

4.2.1 The Outage Scheduling Superintendent is responsible for the development of long-term plant outage plans. These plans cover a period of five years or more; address scheduling and duration of significant, planned, plant outages; and are integrated with GPC/Southern Company system outage plans. Long-range plan development is addressed by Procedure 29537-C, "Outage Scheduling".

4.3 PLANNED, MAINTENANCE AND FORCED OUTAGE PLANS

These plans will be structured to minimize outage duration and optimize plant availability. Each work item included in an outage schedule will be analyzed to insure that it must be performed in part or total during a plant outage. Work items that have both outage and non-outage work will be planned to support outage execution. The Outages and Planning Manager or his designee will determine the extent of pre-outage, outage and post-outage work involved for each work item and plan each segment. Before inclusion in an outage schedule, each work item will be verified as "ready for work" which means that all documentation, procedures, instructions, materials and equipment needed to perform the work is assembled and available to the responsible work organization. The maintenance and forced outage plans will be developed and maintained for immediate use on an as need basis. Planned outage plans will be developed to address outage specifics such as refuelings or significant plant modifications on an individualized basis.

4.3.1 The Outage Scheduling Superintendent will develop planned, maintenance and forced outage plans. Plan generation is accomplished with the support of all Nuclear Operations Departments. These plans address refueling, planned, maintenance and forced outages (greater than 72 hours). The work efforts presented by these plans include: plant operation activities, design changes, preventative maintenance, corrective maintenance, surveillance tests, inservice inspections and special tests.

4.3.2 The Outage Scheduling Superintendent or designee will work with representatives of all Nuclear Operations Departments to identify work items for inclusion in each of the plans (refueling, planned, maintenance or forced outage).

4.3.3 Nuclear Operations Department managers/superintendents will quantify and prioritize their individual work efforts for consideration. The Outage Scheduling Superintendent will determine which plan addresses a specific work item. This determination is made with the assistance of department's manager/superintendent recommendations. The Outages and Planning Manager has final approval authority for the content of each of the outage plans.

4.3.4 The Outage Scheduling Superintendent has the authority to add/delete work items to preliminary outage plans. However, before finalizing the plan and presenting it to the Outages and Planning Manager for approval, the Outage Scheduling Superintendent must verify that each item on the plan is ready for work. This is done with the assistance of the Work Planning and Controls Superintendent and the Modifications and Outage Support Group Superintendent or their designees.

4.3.5 For each work item contained in a preliminary outage plan, the Work Planning and Controls Superintendent or designee will verify that all work activities are pre-planned, and pre-packaged and that all materials necessary for the work effort are available.

4.3.6 For selected work items contained in a preliminary outage plan, the Modifications and Outage Support Group Superintendent or designee will verify that the items are workable as packaged.

4.3.7 Work items that are not ready for work will not be included in plans presented to the Outages and Planning Manager for approval unless the Outages and Planning Manager previously authorizes their inclusion.

4.3.8 The Outage Scheduling Superintendent will include new work items in approved plans only after they have been verified as workable by the Work Planning and Controls Superintendent and the Modifications and Outage Support Group Superintendent. Upon inclusion, the Outage Scheduling Superintendent will present the revised plan to the Outages and Planning Manager for approval before plan distribution.

4.3.9 For modifying a plan following outage work scope freeze, see Section 4.4.9.

4.4 OUTAGE PREPARATION

4.4.1 Using an approved outage plan, the Outage Scheduling Superintendent will identify the approximate number of people required by department for work performance. It is each department manager's responsibility to arrange for sufficient personnel to support an outage effort and coordinate their requirements with Training, Security, Health Physics and any other support group as required.

4.4.2 For departments that provide outage support but do not perform specific work activities, the Outage Scheduling Superintendent will specify the type of support required. Each department manager/superintendent will assess staffing requirements and review these with the Outage Scheduling Superintendent. Specifically, based on the scope of the outage:

4.4.2.1 The Chemistry Superintendent will advise the Outage Scheduling Superintendent of manpower, material and equipment usage that are anticipated to be needed for outage support.

4.4.2.2 The Health Physics Superintendent will advise the Outage Scheduling Superintendent of manpower, material, dosimetry support and work area restrictions that are estimated for outage execution.

4.4.2.3 The Engineering Support Superintendent will advise the Outage Scheduling Superintendent of manpower support that is anticipated for outage execution.

4.4.2.4 The Modifications and Outage Support Group Superintendent will evaluate outage plans and identify general contract labor support requirements for scaffolding, general cleanup and painting and advise the Outage Scheduling Superintendent of the needs anticipated.

4.4.2.5 Upon assessing the direct work and support work manpower requirements, the Outage Scheduling Superintendent will inform the Plant Training and Emergency Preparedness Manager; the Security Manager; Manager, General Support; and the Health Physics Superintendent of total outage anticipated staffing. It is these managers' responsibility to ensure that sufficient training provisions, Security Staff and Health Physics support are available for outage execution support.

4.4.2.6 Each department manager is responsible for the acquisition of personnel if outage requirements exceed normal staffing.

4.4.2.7 The Outages and Planning Manager, based on a published schedule, will meet the department managers or their designees to ensure that each department's preparation for outage work execution is proceeding in support of the outage plan. Plan revisions will be discussed at these meetings.

4.4.3 The Outages and Planning Manager will institute an outage work scope and a schedule revision freeze prior to the start of each outage. The period of time before the start of each outage upon which the freeze is imposed is at the discretion of the Outages and Planning Manager.

4.4.4 The Work Planning and Controls Superintendent, at outage work scope freeze, will institute a review of each outage work order package to ensure that it is complete, all materials are available and clearances written. If multiple work packages can be covered by a single clearance, the clearance will be developed addressing multiple work packages.

4.4.5 The Modifications and Outage Support Group Superintendent, at outage work scope freeze, will institute a review of selected work orders to ensure that they are workable.

4.4.6 Irregularities identified by the reviews performed in 4.4.4 and 4.4.5 will be expeditiously resolved or identified to the Outages and Planning Manager. The Outages and Planning Manager will determine if specific work orders are to remain in an outage work scope and plan.

4.4.7 The Outage Scheduling Superintendent, upon scope freeze, will verify that the schedule accurately reflects the approved scope of the outage. Work scope modifications approved just prior to scope freeze will be incorporated into the outage plan and the plan will be presented to the Outages and Planning Manager for approval and release as the official outage schedule.

4.4.8 The Outages and Planning Manager or designee will review with each department manager/superintendent that is participating in an outage their work scope following scope freeze. This review is to ensure that each department is adequately prepared to support outage execution.

4.4.9 Control of work scope modification after scope freeze is accomplished through implementation Procedure 29537-C, "Outage Scheduling" and the use of the "Outage Schedule Change Request". Emergency work and urgent work can be verbally authorized by the Outages and Planning Manager or his designee. Outage scope addition forms must be submitted to the Work Planning and Controls Superintendent for this work. The initiator should note on the form that the work was authorized by the Outages and Planning Manager or his designee as emergency or urgent work and that the work is in process or complete.

4.5 OUTAGE EXECUTION

4.5.1 The Work Planning and Controls Superintendent will release outage work order packages five days in advance of the schedule work start or as directed by the Outages and Planning Manager.

4.5.2 Outage work will be performed in the sequence and time frame shown on the approved outage schedule. Assigned work groups are responsible for work execution and reporting work progress to the outages and Planning Manager. Changes to scheduled work start or work sequence must be authorized by the Outages and Planning Manager or his designee. Problems or work restraints that the assigned work group can not easily resolve will be addressed by the Outages and Planning Manager or his designee. Outage coordinators will be assigned to various plant locations to assist work groups and expedite critical work items. The outage coordinator is the Outages and Planning Manager's field representative and is tasked with the responsibility of resolving work group problems and insuring that the outage schedule work activities are working according to schedule.

4.5.3 The Outages and Planning Manager or designee will chair daily meetings that replace the Daily Plant Status Review during the outage execution period. Each of the department managers/superintendents (or designee) with outage work responsibility will participate. Work progress will be reported, problems identified and discussed, action items assigned and near-term plans discussed.

4.5.4 The Outages Scheduling Superintendent or designee will act as meeting secretary and record all action item assignments.

4.5.5 The Outages Scheduling Superintendent will status the outage schedule daily and provide the Outages and Planning Manager a daily schedule status report for use at the daily outage meeting. Updated issues of the outage schedule will be distributed weekly.

4.5.6 Work items identified during outage execution will be addressed by the Outage Scope Control program discussed in Section 4.4.9.

4.5.7 Before the Outages and Planning Manager declares that all outage work is complete, the Work Planning and Controls Superintendent or designee will review the status of each outage work package to ensure that all required work is complete, associate clearance lifted, the work order is closed and required testing scheduled. In parallel, the Outage Scheduling Superintendent will review the outage schedule to ensure that each item is correctly addressed and authorized changes incorporated.

4.5.8 The Work Planning and Controls Superintendent will also verify through discussions with the Operations Manager that all mode restraining LCO's are resolved and mode restraining surveillance tests scheduled and with the Nuclear Safety and Compliance Manager that all required surveillance testing is complete.

4.5.9 After verifying that all authorized and scheduled outage work orders are complete, mode restraining LCO's resolved and surveillance testing complete, the Work Planning and Controls Superintendent will notify the Outages and Planning Manager that the plant can proceed into startup. The Outages and Planning Manager or his designee will notify the Operations Manager that startup can proceed.

4.5.10 The Operations Manager or his designee will appraise the Outages and Planning Manager of progress during plant start up and notify the Outages and Planning Manager upon closure of the Main Generator Breakers. Upon notification receipt, the Outages and Planning Manager can declare the outage complete.

4.6 OUTAGE PERFORMANCE EVALUATION

4.6.1 Upon declaring an outage complete, the Outages and Planning Manager will institute an outage performance evaluation.

4.6.2 The Work Planning and Controls Superintendent will perform a work package execution evaluation that can identify procedural, logistical and work execution enhancements that will improve subsequent outage performance. The evaluation will be forwarded to the Outage Scheduling Superintendent for inclusion in the Outage Report.

4.6.3 The Outage Scheduling Superintendent will perform a schedule evaluation that can include these comparisons: The outage work scope at outage start and completion, work package execution forecast and actual duration, work package resource forecast and actual requirements, and identified and experienced restraints. The Outage Scheduling Superintendent will assemble the Outage Report which includes the outage schedule and work package execution evaluations and can include sections that address radiological safety, industrial safety, quality performance, lost analysis, outage organization and lessons learned. On assembly completion, the Outage Scheduling Superintendent will present the Outage Report to the Outages and Planning Manager.

4.6.4 The Outages and Planning Manager will review the schedule and work package execution evaluations with the department managers/superintendents, incorporate appropriate comments and issue an Outage Report which includes recommendations for outage management improvements.

4.6.5 The Outages and Planning Manager will ensure that significant "Lessons Learned" are incorporated in outage programs. An action tracking program will be used for procedure modification, deficiency resolution or activity initiation.

4.7 OUTAGE BUDGETS/ESTIMATES

4.7.1 The Outage Scheduling Superintendent will develop a budget forecast for each refueling or significant planned outage.

4.7.2 The Outage Scheduling Superintendent will prepare a preliminary budget/estimate forecast with the assistance of the Work Planning and Controls Superintendent and each department manager/superintendent participating in the outage.

4.7.3 The Outage Scheduling Superintendent will base the forecast on the man-hour and material estimates developed for each work order package and the logistical support requirements forecast by each department manager/superintendent.

4.7.4 The Outage Scheduling Superintendent will develop with the assistance of Financial Services an account system for outage budgeting/estimating and accumulation of actual costs.

4.7.5 The Outage Scheduling Superintendent will distribute account numbers to each work organization participating in an outage.

4.7.6 Upon completing a preliminary budget/estimate forecast for an outage, the Outage Scheduling Superintendent will submit the forecast to the Outages and Planning Manager for approval.

4.7.7 The Outages and Planning Manager will verify that the budget reflects the scope of the planned outage and for refueling outages that sufficient budgeted funds are available.

4.7.8 Upon budget forecast approval by the Outages and Planning Manager, the Outage Scheduling Superintendent will distribute the budget to the involved department managers/superintendents for use during outage execution.

4.7.9 During outage execution, the department managers/superintendents will identify to the Outage Scheduling Superintendent work scope expansions or additional work scope items that are not budgeted/estimated.

4.7.10 Following outage completion, the Outage Scheduling Superintendent will identify budget/forecast to actual variances for each department and generate variance analysis with the assistance of department managers/superintendents.

4.7.11 The Outage Scheduling Superintendent will present a variance analysis package to the Outages and Planning Manager with an evaluation of overall budget/estimate status.

5.0 REFERENCES

5.1 PROCEDURES

5.1.1 29537-C, "Outage Scheduling"

END OF PROCEDURE TEXT