TENNESSEE VALLEY AUTHORITY

SEQUOYAH NUCLEAR PLANT

RESTART PLAN

REV. 4

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APPROVED BY: _____ 1-24-94

Site Vice President/Date

SEQUOYAH RESTART PLAN REVISION LOG

DESCRIPTION OF REVISION	REV. LEVEL/DATE

1. Initial issuance — 0 /May 20, 1993

2. Incorporate additional process detail and enhancement — 1/July 27, 1993
   - Emergent item reviews
   - System readiness forms and walkdowns
   - Department program reviews
   - Department readiness details
   - Restart Item Closure process

   Reflect additional BRC tasks/assignments
   - Review of emergent WRs from 5/1 to 7/1
   - Review of Department Evaluated backlogs
   - Review of Post Restart backlogs
   - Review of restart WR deletions

   Incorporate Senior Management Oversight Group comments
   - Add Maintenance Manager to MRRC
   - More detail on Secondary Reliability Study results
   - Additional NSRB review for restart
   - Power ascension plan scope and holdpoints

   Clarification and Miscellaneous Revisions
   - Configuration control for BOP process systems
   - Less than five delinquent PMs at restart
   - PM Revisions added to backlog listing
   - Remove MILs from emergent item process
   - Update Post Restart improvement plan description
   - Reflect transition to normal processes
   - Update references
   - Minor edits

3. Addition of Appendix 11, Startup and Power Ascension — 2/August 10, 1993
   Plan. Revision to section V.G to reflect Appendix 11

4. Attachment 11 approval matrix and Appendix 11, VI.C.4 — 3/September 30, 1993
   revised to require NRC approval prior to resumption of
   power escalation from the 30% +/- 10% hold point.
   Update references.

5. Addition of Appendix 12, Unit One Transition From — 4/January 24, 1994
   Restart Plan To Normal Processes added. Revision to
   sections V.A, IX and XI to reflect Appendix 12. Improved
   appendices attachments numbering scheme.

SEQUOYAH RESTART PLAN
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I. BACKGROUND

The Sequoyah Nuclear Plant (SQN) units were shut down in March 1993 following a rupture of a 10-inch, Unit 2, No. 2 extraction steam line to a No. 2 feedwater heater. Significant weaknesses were identified in the SQN erosion/corrosion (E/C) program that ultimately led to unacceptable thinning and the subject rupture at power. A Confirmation of Action Letter (Reference 1) was issued by NRC that documented agreements between TVA and NRC (see Reference 2 TVA letter) regarding actions to be taken before the restart of either unit. The actions addressed the evaluation of the specific event, E/C piping evaluation and repairs, E/C program upgrade, and review of other technical programs for similar potential weaknesses.

Prior to this event, a number of weaknesses in SQN's performance had been identified that resulted in regulatory noncompliances, adverse impacts on safety system availability, and plant trips and transients. Targeted improvement efforts had not been effective in achieving the requisite levels of improvement. In evaluating past performance and events, common weaknesses continued to be identified in: control of configuration, control of work, sensitivity to and focus on the balance of plant (BOP), personnel performance relative to expectations, and program ownership.

At the time of this event, actions were underway to carry out a comprehensive Site Improvement Plan (SIP), which includes broad initiatives both to address specific weaknesses (identified both internally and externally) and to target those areas most critical to overall TVA Generating Group objectives. Several specific ongoing initiatives included conducting a comprehensive Secondary Plant Reliability Study, restructuring and reorganizing implementation and ownership for specific site technical programs, and concentrating additional management talent and focus on improvements in the Operations department's performance. Accordingly, these same key focus areas - BOP, Technical Programs, and Operations department's performance - were identified for improvement action implementation before restart of the units. Weaknesses in these areas have been major contributors to past challenges to effective plant operations.

In analyzing the underlying causes of performance weaknesses over the past several years, two key areas, both involving management effectiveness, were identified: ineffective resource management and ineffective personnel/management performance. Several improvement areas have been targeted for short-term focus, including reducing backlogs, improving work prioritization, clarifying the interface between the site and corporate organizations, and continuing efforts to elevate overall site workforce effectiveness (people/culture/organization). In sum, restart initiatives were identified to correct not only the specific causes for the shutdown, but also to reduce impediments to effective plant operations following restart.

A "restart list" containing specific detailed restart actions was developed utilizing input from a variety of sources. These included E/C associated corrective actions including technical

program reviews, management review of the SIP areas (which included BOP and Operations improvement action plans), soliciting feedback on significant problems from key employees in targeted departments, review of internal and external reviews, review of backlog or open items/issues, and system design reviews in targeted areas.

As specific potential restart actions were identified, a Management Restart Review Committee (MRRC), chaired by the SQN Site Vice President, was established to review and approve (or disapprove) potential restart item/issues. Restart criteria were developed for use in screening potential items and evaluating the merit of those specific items. The criteria focused on nuclear safety, plant reliability, and operational impacts.

A large number of assessment/review efforts were identified to assist in identifying problems, evaluating the adequacy of the restart initiatives, assessing the effectiveness of initiatives, and assessing readiness for restart. These assessments/reviews included a review of recent events and trends by SQN management and the Institute of Nuclear Power Operations (INPO); team reviews of selected technical program areas, reviews by the Nuclear Safety Review Board (NSRB); a high-level, Senior Management Oversight Group using experienced nuclear industry managers; a Restart Readiness Team review of the Operations department's readiness; and a variety of site and corporate reviews in targeted areas by Nuclear Assurance.

The development of this integrated SQN Restart Plan was in :ated to fully develop the above efforts and to provide an integrated framework for consistent, effective implementation.

II. RESTART PLAN OBJECTIVES

The overall objectives of the SQN restart efforts are to remove or reduce barriers to effective plant operations and lay the foundation for continuing postrestart improvement.

The overall objectives of the SQN Restart Plan are to ensure the comprehensiveness of the restart efforts; to provide an integrated framework for consistent, effective implementation of those efforts; and to assist in the management and communication of those efforts. This document summarizes key initiatives; extensive supporting detail is referenced as indicated, e.g., detailed implementation schedules, workoff curves, and summary reports.

This plan, including revisions, is issued and approved by the SQN Site Vice President.

III. APPROACH

The overall approach to the achievement of the Restart Plan objectives is to integrate and

build on the multiple ongoing efforts described above. This includes: identification of key focus areas for improvement based upon the analysis of performance problems and underlying causes, identification of restart actions and scope utilizing documented restart evaluation criteria consistent with Restart Plan objectives, development of processes to facilitate and ensure the comprehensive and effective implementation of restart efforts consistent with Restart Plan objectives, utilization of assessments to verify effectiveness and readiness for restart, and integration of the restart efforts with the postrestart overall Site Improvement Plan.

The SQN Restart Plan methodology and integration of efforts are depicted in Figure 1. Detailed descriptions of each facet of this plan are provided in Sections IV - VI. In general overview, potential restart issue identification results from a variety of sources, as discussed in Section I, and potential restart items are evaluated against the restart evaluation criteria (see Section V.A) and reviewed by MRRC before being added to the restart list (see Sections V.A and B). Restart list hardware items are forwarded to the outage management team, and software items are assigned to responsible department owners. Restart readiness will be principally comprised of integration of system readiness affirmations (hardware) and department readiness affirmations (e.g., software, programs, processes, and people). Restart activities in key focus areas such as the BOP, programs, and the Operations department's performance feed into these two readiness processes. Restart readiness will not only address restart activities but adequacy of postrestart plans as well. Multiple assessments are being used to assess restart plan adequacy, restart plan implementation, and restart readiness.

IV. RESTART FOCUS AREAS

This section will address each restart focus area. Both hardware and software elements are addressed. In many cases improvement plans/initiatives will be continuing past restart. Processes have been established as described in Section V to establish the basis for restart readiness.

IV.A BALANCE OF PLANT (BOP)

Over the past several years, an increasing number of plant transients and reactor trips have resulted from secondary plant problems. Causes have included unexpected hardware failures, marginally designed or degraded system/component performance, and ineffective application of programs/processes. Insufficient focus/priority has been provided to the secondary plant to achieve effective, reliable operation.

Multiple reviews have been conducted to ensure accurate identification of problem areas. These included INPO assistance (Reference 3), a comprehensive Secondary Plant Reliability Study (Section IV.A.1), an independent Secondary Plant Design Review (Section IV.A.2),

reviews of technical program areas as applied to the BOP (Section IV.A.5), and performance evaluations of BOP work by the Nuclear Assurance organization (Section IV.A.6).

The objectives of restart activities associated with the BOP include improving material condition and plant reliability, strengthening control of work for secondary plant activities, and increasing overall site focus on secondary plant performance.

Implementing initiatives to address these objectives include the following areas:

IV.A.1 Secondary Plant Reliability Study

In January 1993, a Secondary Plant Reliability Study (Reference 4) was initiated to provide a structured, prioritized approach to effecting secondary plant performance improvements. Specific objectives included understanding the causes of increased contribution of the secondary plant to trips/runbacks/transients, identifying points of single component failure requiring less than full power to repair, and providing appropriate recommendations to site management. This study was conducted using a multi-organization Sequoyah team. Review elements included the allocation of technical, maintenance, and budget resources (work prioritization relative to primary plant); trips/runbacks/power reductions; trip logic review for single failure points; control of work on the BOP; and successful utility experience. The evaluation process involved collecting SQN and industry data; conducting specific department reviews; reviewing management controls and processes; and analyzing data. Recommendations/resolutions were evaluated for cost effectiveness and priority, and categorized by action type, i.e., modification, corrective or preventive maintenance, procedure change or training.

Modifications were further classified as high, medium or low priority and results were reviewed against the restart criteria. Of the twenty-eight identified high priority modifications, twenty-two are being implemented before restart. Key restart modifications include modifications to heater drains and vents (piping and valves), feedwater system (controller relays and solenoid valves), control air (receiver drain and copper unloader lines), switchyard (generator breakers and Buckholtz relays), turbine/generator (turbine runback pressure switches and volts/hertz relay), condensate demineralizer (replace and upgrade valves), and the electrical system (vital invertor transfer switch and vital battery test breaker).

Additional deficiencies were categorized as preventive or corrective maintenance items. These items are to be evaluated by the Reliability Centered Maintenance (RCM) program to determine the optimum resolution. These items were screened to identify items of immediate concern due to existing or potential plant conditions. Items considered to pose higher near term risk were addressed by work requests for component replacement. These items included such things as selected turbine building junction box cleaning, inspecting and repairing (those exposed to ground water in-leakage); turbine trip test valves which were

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difficult to open/close; rigid control air line tubing to stator cooling water temperature control valves subject to vibration (replaced with flex tubing); continuously energized relays in the #3 and #7 heater drain tank level control circuits; and fuses in the transformer cooling circuitry. Nine additional actions were also identified for restart including evaluation of corrosion in raw cooling water piping; furmanite replacement; preventive maintenance on electrical boards; resolving work requests on turbine building sightglasses; resolving work requests on the Amertap system; replacement of thin-wall piping; replacement of Moisture Separator Reheater manway spiral flexitallic gaskets; evaluating impact of corrosion on structural integrity of hydrogen piping; and replacement of oil coolers on selected BOP pumps.

Of sixteen identified procedure/training issues, one procedure issue was identified for restart involving draining water from the Main Turbine Oil Tank. The remaining procedure/training issues typically involve engineering enhancements or work efficiency items.

The modifications, preventive maintenance, procedures and training not recommended for implementation prior to restart are being prioritized for longer term implementation post restart as part of the ongoing Site Improvement Plan.

In addition to the evaluation of existing deficient conditions, a single point failure analysis was performed. This review identified multiple points of single point failure vulnerability in control and electrical circuitry. The results, along with results from an industry trip review evaluation, will be integrated into the RCM program for analysis and development of preventive maintenance procedures as part of the post restart SIP.

Additional actions were identified for improvement regarding control of work on the secondary plant. These actions are addressed in sections IV.A.6 and IV.A.7.

IV.A.2 Secondary Plant Design Study

As a further extension of the inhouse reliability study, a BOP system design review was conducted by Stone and Webster Engineering Corporation (Reference 5). The review was performed by an experienced light water reactor (LWR) BOP systems and heat balance engineer who had not previously been exposed to TVA practices or implementation. This effort was initiated to identify additional problems or vulnerabilities. Observations were requested regarding features that deviated from industry practice or Stone and Webster's standard practices. The review involved an evaluation of flow and piping drawings, unit walkdowns, TVA design standards and descriptions of systems, and discussions with TVA personnel. A general review of calculations was performed, which focused primarily on methodology and results.

It was concluded that while there are a number of design features not commonly observed, none, specifically or in combination, should preclude safe, reliable unit operation. Specific

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findings addressed the design and orientation of the feedwater heater safety relief valve vent stack and points of highly suspected erosion-induced wall thinning. Recommendations were made to reduce turbine water induction risk, provide assurance on turbine speed control after trips, and avoid long-term problems on the reheater drains. Recommendations for actions were also made in the condensate/heater drain/feedwater system hydraulics, pump start transients, and feedwater heater level stability during unit transients. The review also noted the unavailability of certain BOP as-built documentation and calculations.

Study results have been evaluated for corrective actions and to identify items for restart implementation. Restart items included addressing the above noted specific findings regarding feedwater heater relief valve vent piping orientation and points of highly suspected erosion induced wall thinning. Remaining longer term actions will be factored into long-term BOP system reliability improvements as part of the SIP.

IV.A.3 Performance of Corrective and Preventive Maintenance

During the current dual-unit outages, extensive corrective and preventive maintenance activities are being performed, with specific focus on the secondary plant. Maintenance prioritization and high-benefit work identification processes are being enhanced through the use of the Secondary Plant Reliability Study results. Activities include outstanding corrective maintenance items, conduct of preventive maintenance, temporary repair restorations and inspection and refurbishment of secondary plant piping as part of the E/C program review efforts (see Reference 15 for workoff curves).

The existing Maintenance work request (WR) backlog has been reviewed by licensed senior reactor operators using the restart evaluation criteria considerations for assessment of risk - individual and aggregate - and identification of degradation levels. The results of the Secondary Plant Reliability Study were utilized as part of this review, as were insights provided by INPO's review of BOP material condition. This methodology is being employed on a continuing basis to address emergent, day-to-day WRs. This WR backlog will be reviewed by the individual system engineer who will present these results/recommendations to the Backlog Review Committee (BRC) described in Section V.D. The results of this effort have been used to identify the restart maintenance population for current outage performance. Approximately 5300 WRs for primary and secondary plant are currently planned for completion prior to restart.

The permanent correction of temporary repairs to existing piping as the result of E/C effects is being conducted before restart. Other temporary repairs are being evaluated and permanently corrected as appropriate. All through wall Furmanite applications for Units 1 and 2 will be repaired before restart. Other temporary fittings will be totally repaired for Unit 1 before restart and the majority for Unit 2 with a small number to be repaired by the end of the Unit 2 Cycle 6 refueling outage. In addition, a site procedure will be developed before restart that describes the temporary repair process including the control, tracking, and trending of such repairs.

The existing preventive maintenance (PM) backlog has been reviewed and prioritized using the restart evaluation criteria (Section V.A.2). Delinquent PMs (unimplemented PMs past their due date without technical evaluation) will be reduced to less than five (for both units) before restart. PMs due before the Unit 2 Cycle 6 refueling outage for which conduct at power is considered to constitute an unacceptable level of risk are being performed during the current outages. RCM-driven PM revisions with identified plant reliability benefits are being reviewed and expedited for PM conduct during the current outages. PMs not performed during the current outages will essentially consist of lower benefit PMs that can be effectively performed with the units online. The PM backlog will also be reviewed by the BRC. Approximately 3700 PMs for primary and secondary plant are planned to be completed prior to restart.

IV.A.4 Implementation of Secondary Plant Modifications

A number of modifications are being implemented to improve secondary plant component and system reliability and performance. Several of the modifications were identified and planned prior to the unit shutdown for implementation during subsequent outages. Additional modifications were identified through Secondary Plant Reliability Study recommendations, backlog reviews, employee feedback, and selected system reviews. Key modifications involve improvements in feedwater heater level controls, electrical system and control component changeouts and upgrades, reduction in air system design vulnerabilities, switchyard breaker and relay changeouts, and turbine/generator improvements.

IV.A.5 BOP Technical Programs Application

IV.A.5.a E/C and Confirmatory Action Letter (CAL) Issues

As a result of the erosion/corrosion induced rupture of the Unit 2 large bore extraction steam line and previous small bore piping failures, an overall E/C programmatic review and reevaluation of piping condition were initiated. Significant programmatic weaknesses were identified and a strategic scoping plan was developed by Electric Power Research Institute (EPRI). A comprehensive piping inspection and reevaluation effort for both large- and small-bore piping are being conducted by TVA, with contracted expertise and support. For large-bore piping (greater than 2-inch diameter), this includes: a complete rebuild of the CHECMATE large-bore model using verified model inputs, full pass two piping inspection data inputs based on full inspection grids, development and documentation of verified acceptance criteria, and required repairs/replacements. For small-bore piping, efforts include: completion of piping changeouts ongoing and scheduled at the time of the unit shutdowns, development of a detailed inspection plan based on a review of system design and operation and operating experience, and changeouts of indicated thinned piping. Approximately 3000 feet of small bore piping and 300 feet of large bore piping are being changed out per unit. E/C programs for both small- and large-bore piping are being

upgraded consistent with industry standards using contracted expertise. Organizational responsibility has been reassigned to the new Technical Performance and Program organization described in Section IV.B. A third- party (EPRI) review of the entire piping evaluation and E/C program upgrade will be conducted.

Actions resulting from the extraction steam line rupture event identified in TVA's letter and the NRC Confirmation of Action Letter dated March 4, 1993 (References 1 and 2) will be completed before restart. These include the complete review of the event including the piping failure mechanism and impacts of the event on plant equipment, the review of the E/C program including a third-party review, an evaluation of the condition of plant piping subject to E/C effects, the completion of permanent repairs to piping that was under temporary repair because of E/C effects, and the evaluation of other programs relative to weaknesses identified in the E/C program implementation. All CAL actions will be verified and affirmed complete by the Site Licensing manager before restart as provided for in Appendix 8.

IV.A.5.b Other Secondary Plant Programs

Additional technical program reviews (reference Sections IV.C and Reference 6) identified several targeted areas for improvement in program applications to the secondary plant. These areas addressed the E/C program (including MIC) application to secondary systems such as raw water and high-pressure fire protection, preventive and predictive maintenance for secondary plant equipment, switchyard (SWYD) controls, and temporary repair controls. Strengthened controls and selected inspections/evaluations are being implemented on the BOP for restart. Additional enhancements will be implemented as part of the SIP following restart.

IV.A.6 Upgrading Work Practices

IV.A.6.1 Maintenance Processes and Standards

A number of actions are being taken to elevate the standards of maintenance conduct on the secondary plant. The Maintenance/Modifications Managers are conducting communications and coaching sessions during department standdowns (see Section IV.E) with Maintenance, Modifications, and contract personnel to heighten sensitivity and attention to detail in conduct of secondary plant maintenance activities. This includes a discussion of plant operating reliability, risk and consequences using previous events, and maintenance work observations. Secondary plant work practices and standards in such areas as planning detail for secondary work are being similarly heightened to parallel implementation practices and standards used for the primary plant.

In addition, clearly defined management expectations concerning higher standards for BOP

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are being communicated and enforced at all levels of the Maintenance department.

A specific training session is being developed on BOP quality standards that will be presented to Maintenance personnel.

IV.A.6.2 Control of Work

Several initiatives have been implemented to improve the control of work on the BOP. As a result of previous plant events, Plant Manager policies were developed for work on or around sensitive equipment and for the types of equipment adjustments (e.g., set point dials) that can be made without a work document. The policy on sensitive equipment has been incorporated into a site standard practice that will involve training and result in enhanced awareness of plant personnel (Reference 16). The policy on BOP equipment/controller adjustments clarified expectations regarding the use of procedures/work documents for BOP adjustments (Reference 17). This policy defines the following: (1) Operations is authorized to make certain adjustments during plant evolutions or when prompt action is necessary; (2) Operations, with support from the system engineer, can make adjustments for equipment optimization but not to compensate for needed maintenance; and (3) other adjustment actions on BOP equipment can only be performed by utilizing the appropriate work document.

In the area of Maintenance and Modifications work control, a number of BOP performance/planning weaknesses have been identified by the Nuclear Assurance Organization Performance Evaluation Program (Reference 18). As corrective actions for these weaknesses, Maintenance/Modifications management has initiated a strategic plan (Reference 19) that includes communication of heightened expectations for the quality of BOP work. This plan also includes specific expectations for each level of supervision including the craft. In addition, actions have been taken to increase supervisory presence in the plant for coaching and oversight, and increase the level of detail in work order planning.

The authorization of BOP work by Operations will continue to be performed through the Operations Control Center (OCC). Operations' reviews prior to the authorization of work have placed increased emphasis on configuration control and single-failure activities that could result in unit trips.

IV.A.6.3 Control of Configuration

Operations' management has determined that BOP process systems will be placed under the controls of Site Standard Practice (SSP) 12.2, "System and Equipment Status Control." The application of this level of control will ensure that BOP systems are properly aligned and maintained during restart and subsequent plant operation through use of system alignment checklists and status files. To further ensure adequate configuration control is established and maintained on BOP, process equipment will receive a verification of status prior to

restart. In addition, an increased awareness of BOP configuration control has been instituted into the OCC work authorization process.

IV.A.6.4 Improved Assessment of and Prioritization of
Outstanding Work/Open Items on BOP

A number of initiatives are being taken to improve the assessment of impact/risk for outstanding secondary plant issues/work. These include assignment of risk degradation levels to work orders to aid in proper prioritization of work, adjustment in the site work prioritization processes to increase weighing of plant reliability issues, and augmented controls and reviews of WRs over 90 days old. Results from the Secondary Plant Reliability Study are also being used to upgrade the weighing of plant reliability considerations in work prioritization and monitoring.

IV.A.7 Switchyard (SWYD) Controls and Interfaces

Several initiatives are being taken to further improve SWYD controls and interfaces. Actions being taken and/or to be completed prior to restart include establishing an onsite Customer Group (CG) owner for switchyard activities, removing outdated signs for access gates and vehicle control, revising the site instruction (SSP 6.52, "Activities of Customer Group at Sequoyah Nuclear Plant") to ensure CG activities are impact reviewed and that Operations is properly notified, formalizing the switching order execution process, ensuring the CG fully implements site instructions for switchyard activities, and strengthening the control of switchyard work during high-risk evolutions. Other long-term recommendations to further enhance switchyard activities will be addressed through the SIP.

IV.B OPERATIONS DEPARTMENT'S PERFORMANCE

Weaknesses in the Operations department's performance have resulted in adverse impacts on safety system availability and a large number of plant events. A comprehensive improvement effort was ongoing at the time of unit shutdown. The review of performance history and ongoing performance evaluation efforts by Nuclear Assurance are being used to identify current areas requiring additional improv. .ent to support unit start-up and safe, reliable operations over the next operating cycle. Additionally, senior corporate staff's assisted by industry experienced consultants are verifying the identification of problem areas and assessing performance levels to ensure operational readiness (Reference Appendix 1 for activity description).

The overall objectives of restart improvement efforts in the Operations area include: ensuring the establishment of an effective configuration control process; "certifying" the configuration of the plant both to support shutdown and restart conditions; providing safe and effective conduct of operations in targeted areas such as procedure adherence, plant ownership, command and control, formality of communications, self-checking, logkeeping, and turnover and status monitoring; strengthening management and personnel; and continuing efforts to upgrade personnel standards and culture.

IV.B.1 Configuration Control

Multiple efforts are ongoing to enhance the configuration control process in the short and long term. These include the simplification and strengthening of the verification processes and requirements, additional training in standardized methods for configuring various component types (e.g. setting throttle valves), inclusion of additional systems within the configuration control process scope, ongoing procedure simplifications/matchups to eliminate multiple procedure alignments, trial use of a computerized configuration control system, and strengthened controls over configuration changes in the BOP by adding secondary plant process systems to the scope of the site configuration control process.

IV.B.2 Configuration Verification

Prior to unit shutdown, several configuration verification efforts were ongoing to provide additional assurance that components - valves, handswitches, etc. - were in the correct position to perform their required design function. A main control room handswitch verification effort is in progress including a comprehensive procedure and drawing review, to ensure the accurate assignment of positions. Reviews of associated Operation's procedures and drawings are ongoing. Incorrect procedures and primary drawings will be corrected before restart of respective units. Following specialized training and upgrading of verification processes, a 100 percent field verification effort was initiated for Unit 1 required systems for Modes 5 and 6 and for Unit 2 and common for all configured systems. The verification of configured systems will be completed before restart. SROs are being used to conduct "spot checking" of alignments (see Reference 15 for applicable workoff curves).

IV.B.3 Strengthening of Operations' Management and Personnel

The capability and effectiveness of Operations' personnel are being evaluated, and necessary actions are being identified as part of the overall evaluation of site personnel discussed in Section IV.E. Additionally, an experienced supervisor has been recently hired to provide management oversight and workforce strengthening for auxiliary unit operators (AUOs). Experienced industry SROs and AUOs (Trojan Nuclear Generating Station) are being recruited and hired to infuse additional talent and perspective into the Operations department over the long term. This effort will be supplemented by recruiting and hiring of former U.S. Navy officers and petty officers as SRO and AUO trainee candidates, respectively.

IV.B.4 Conduct of Operations

Expectations and standards of performance in key areas - procedural adherence, command and control, plant ownership, formality of communications, self-checking, logkeeping, turnover, and status monitoring - are being enhanced, communicated, reinforced and monitored on a continuing basis.

Procedure adherence is being stressed with communication of expectations regarding inadequate, incorrect, or unclear procedures. The procedure revision process for Operations' procedures has been improved by supplementing support in this area. Turnover meetings and Operations' management briefings during training week, as well as weekly meetings with the Site Vice President, are used to discuss and reinforce expectations and areas for further improvement. Operations' administrative procedures, including the Conduct of Operations procedure, are being discussed, and expectations in execution are being communicated during ongoing Operations department's standdowns (see Section IV.E). Processes such as logkeeping and turnover are being standardized as much as possible. The utilization of the stop, think, act, review (STAR) process to enhance self-checking is continuing.

IV.B.5 Operations' Performance Assessment

Nuclear Assurance is evaluating performance relative to conduct of operations through the ongoing Operations Performance Evaluation Program followup. Results of that evaluation effort are being discussed with Operations' management and factored into ongoing communications. A Restart Readiness Team headed by the Vice President, Nuclear Readiness, will critically evaluate Operations' performance before restart to ensure adequate performance to support unit restart and operation. Members of that team have initiated an independent assessment of department performance during the ongoing restart efforts to provide feedback to Operations department management on effectiveness and progress. (Reference Section VI.B and Appendix 1 activity listing description).

IV.C PROGRAMS

Weaknesses were identified in several program areas over the past several years, including the programmatic weaknesses in the site E/C program, which resulted in the Unit 2 extraction line rupture and shutdown of the units for the current outages. Beyond specific program weaknesses, identified common elements or causes included an unclear definition of program ownership, responsibilities and interfaces, and ineffective change management relative to responsibilities, organization, supervision, and resources allocation. A significant weakness was identified regarding split responsibilities between site and corporate organizations.

The objectives of the restart activities in this area are to assess the adequacy of site programs and implementation; assess the consequences of any identified weaknesses and take actions necessary to provide current implementation consistent with restart plan objectives; ensure clear ownership for site programs is established, including an effective organization structure and organizational interfaces; and provide a foundation to continue longer-term program enhancements.

Three key actions are being taken to address this area: team reviews of selected, "high risk" technical program areas; reviews of program areas by department program owners as part of the department readiness assessments; and establishment of a Technical Performance and Programs organization to consolidate and better focus definition and implementation of key site technical programs.

IV.C.1 Technical Programs Review

A review of technical programs was conducted by a team headed up by the Chairman of TVA's NSRB (see Reference 6). The purpose of the review was to assess program adequacy, identify specific deficiencies or work items that should be addressed before restart, and to provide advice and assistance to implement longer-term program improvements. The review teams were composed of 38 TVA personnel from Nuclear Assurance, corporate technical groups, and SQN site organizations. Eight industry experts external to TVA also participated in the review effort. Programs for review were identified by a team of senior corporate managers consisting of the Chairman, NSRB; the Manager, Nuclear Licensing and Regulatory Affairs (NLRA); the Chief Engineer; the Manager, Technical Programs; the Manager, Nuclear Fuels; and the Manager, Quality Programs. Program selection was based on a review of events, trends, and performance indicators; a review of common elements associated with recent events; the potential to impact plant operations; and programs with split ownership between corporate and site (Reference 7). The programs reviewed included: open issues (including backlogs); switchyard control; corrosion control programs; American Society of Mechanical Engineers and regulatory programs; valve, predictive maintenance, and equipment trending programs; control of temporary repairs; chemistry; and environmental qualification. Oversight of the conduct of the review was provided by a panel

composed of the Chairman, NSRB; the Vice President, Technical Support; the General Manager, Nuclear Assurance; the Vice President, Nuclear Readiness; the SQN Site Quality Manager; and the SQN Site Licensing Manager. This panel will also review the actions being taken to resolve the review findings.

The results of these reviews (Reference 6) were provided to program owners and both restart and long-term improvement recommendations were identified. Program owners are utilizing these reviews to assist in baselining current program health; additional reviews are being conducted as appropriate.

IV.C.2 Program Owner Reviews

As part of department readiness assessments (Section V.F), department program owners will assess the health and effectiveness of programs owned by that department. This assessment will consider program assessments and performance indicators/trends and the potential impact of identified program weaknesses on near-term, safe, reliable plant operation. The scope and methodology for conducting these reviews is defined in Appendix 9 (also see Reference 27).

IV.C.3 Technical Performance and Programs Organization

Prior to the shutdown of the units, early in 1993, weaknesses were observed in the organizational structure for several technical programs. The observed weaknesses included the inadequate definition of program ownership, fragmented implementation, and split responsibilities between multiple organizations, both within the site organizations and between the site and corporate organizations. As a result, an effort was initiated in early 1993 to develop a single site organization of technical programs to provide a better structure for delineating program responsibility and authority and facilitating implementation through well-focused control, e.g., minimizing and/or better controlling "hand-offs" and interfaces. Program ownership is being clearly established at the site; program definition or implementation functions previously performed by corporate organizations are being transferred to the site. (See Section IV.F for additional discussion of corporate/site interface.)

The overall objective of the organization is to achieve and maintain total program definition, ownership, and responsibility for effective SQN implementation. As practical, organizational "hand offs" will be minimized. The scope of the technical programs to be included in this organization was developed from a review of program magnitude and complexities, potential for weaknesses identified by recent events, and consequences of ineffective implementation.

The new organization has been approved and key positions permanently filled, including the organization manager and several supervisory positions; temporary assignments are being used in some areas (Reference 21). The transfer of responsibilities and personnel from

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previous organizations is ongoing. Responsibilities and interfaces are being documented and responsibility transfer agreements established and communicated. Program baselining utilizing the program reviews described in Section IV.C.1, along with additional applicable reviews, is being conducted to upgrade individual program areas. Contracted expertise is being utilized in several areas to support continuing reviews and program upgrade efforts.

Before restart, the organization will be in place; responsibilities and interfaces will be defined and documented; restart actions from program reviews will be complete; and programs will be reviewed for adequacy to support restart and plant operation. Program owner affirmations of program adequacy to support restart and safe, reliable operation over the next operating cycle will be documented. Longer-term program improvement efforts will continue beyond restart and will be identified as part of department readiness affirmations.

IV.D BACKLOGS/OPEN ITEMS - WORK PRIORITIZATION

A number of site processes generate work items of various types that until implemented constitute open or backlogged items. Schedules for working these items are dictated by process requirements, significance/priority and site work prioritization processes. Prior to the current outages, the SIP had identified backlogs as a major improvement area with focus on assessing the individual and aggregate impact of backlog items on safe, reliable plant operation; reducing existing backlogs that can adversely impact the effective management of site activities; improving work prioritization and scheduling processes to optimize priority assignment; and improving work processes to control the development of future backlogs.

It is recognized that open items and backlogs will always exist to some degree. The restart objectives in this area are to ensure that backlog items individually or in the aggregate do not pose unacceptable risk to effective plant and site operation from hardware and personnel/management impact perspectives, and to lay the foundation for the effective control and management of backlogs following restart.

Accordingly, restart activities in the area of backlogs are focused at gaining a good understanding of the individual and aggregate impact of existing backlog items; working open items with significant impact/risk to safety system availability, plant reliability, or effective plant/personnel performance on either an individual or aggregate basis; improving backlog assessment and monitoring processes to ensure effective controls and understanding of postrestart backlogs; establishing detailed workoff plans for postrestart backlogs; and initiating improvements to work processes to optimize postrestart priority assignments and control the development of future backlogs.

The above activities are being implemented and captured through three key restart plan processes, the backlog review process (see Section V.D), the system readiness assessments (see Section V.E), and the department readiness assessments (see Section V.F). In summary, through a designated Backlog Review Committee (BRC) and system engineer evaluation, site backlogs are being identified and backlog items are being evaluated individually and/or in the aggregate against restart evaluation criteria. Applicable restart workoff curves are provided by Reference 15. System readiness assessments will consider the aggregate impact of any remaining postrestart backlogs/open items on system functionality. Department readiness assessments will ensure a thorough analysis and understanding of the department-owned postrestart backlog compositions, will have established acceptability of those backlog levels to support safe and reliable operations, will have determined what process improvements are necessary to prevent the development of unacceptable postrestart backlogs, and will have established workoff curves and performance indicators to ensure effective management of postrestart work.

IV.E PERSONNEL, ORGANIZATION AND CULTURE

As discussed in Section I, the analysis of the underlying causes for observed weaknesses in SQN performance identified repeated indications of ineffective personnel and management performance. While it is recognized that improving personnel performance and effectiveness is an ongoing, long-term effort, specific restart initiatives were identified in personnel/management capability, organization structure and definition of responsibilities, and personnel culture in terms of ownership and standards of performance.

IV.E.1 Personnel Evaluation/Management Development

An evaluation of site personnel/management capability and performance is being conducted to identify weaknesses and associated action/development needs (see Reference 20). This effort will be completed down through the first-line supervisor in all site organizations and for the entire Operations department (down to AUO levels) before restart. Remaining personnel will be evaluated through the continuation of this process following restart. This evaluation is being conducted by first identifying key behaviors for success and then evaluating managers/supervisors/personnel against these behaviors.

The restart evaluation has been completed. Immediate restart actions or development needs are being identified as well as postrestart actions. Evaluations are being compared against previous performance appraisals for management feedback and appraisal updating. Targeted development training will be conducted. Detailed action plans are being developed for "action required" managers. Actions needed before restart are being identified and implemented.

The results of this effort will be integrated into the department readiness affirmations, the overall site restart readiness assessment, and continuing postrestart management performance reviews and individual development plan processes. It is acknowledged that this initiative is primarily one of enforcing an existing system that has broken down. Long-term success will depend on management commitment.

IV.E.2 Organization, Roles and Responsibilities

To improve the effectiveness and ownership of site personnel, an effort was initiated to evaluate the effectiveness of and revise as appropriate the organizational structure, and to clearly define roles, responsibilities, and interfaces. Organizational weaknesses are being identified, and necessary restart and postrestart actions are being defined. The results of this effort will be documented and communicated to site personnel; impacted procedures will be revised as appropriate. This effort will interface with efforts addressing the corporate/site

interface in Section IV.F, and provides an input to both the department readiness assessments and integration into the overall site readiness assessment.

It is expected that full implementation of results of these efforts will continue beyond restart.

IV.E.3 Culture and Ownership

Restart and postrestart continuing efforts are being implemented to build an effective site culture, instill ownership, and foster teamwork among management and site personnel. A long-term action plan has been developed, and efforts are being integrated into ongoing restart efforts. These efforts are focused at communicating and reinforcing a common site vision among all personnel, including overall site objectives and standards of performance and expectations for job function execution.

A series of department standdowns in key departments are being conducted before restart to devote special focus to this area. Department-specific performance, processes, procedures, and issues are being addressed as well as overall site restart and postrestart plans and objectives. This effort comprises a small subset of a broad, long-term action plan for continuing postrestart improvement.

IV.F CORPORATE/SITE INTERFACE

Separate from (but in parallel with) the SQN restart efforts, the TVA corporate organization in Nuclear Power has been recently restructured (see Reference 22 for organization charts). This effort included the assignment of a new Vice President of Nuclear Operations (R. M. Eytchison) who has responsibility over the nuclear sites. A corporate group under the newly created Vice President of Nuclear Readiness (D. R. Keuter) is responsible for overseeing site readiness and reporting the state of operational readiness to the Vice President of Nuclear Operations. The recent reorganization realigns all corporate technical functions under one Vice President of Technical Support (M. O. Medford) to consolidate technical and programmatic oversight and site support functions into a single organization for a more integrated, unified approach.

A key element of the overall restructuring effort is to ensure that all site technical functions are owned by and conducted from the site organizations. Actions are ongoing to clearly define the corporate mission in terms of site oversight, plant support, and TVA program area responsibilities and to coordinate with the site for the effective transfer of responsibilities/functions (see References 23 and 33). Companion efforts to improve the effectiveness of the corporate organization are also ongoing. A clear definition of the corporate/site interface will be integrated into the site organizational activities discussed in Section IV.E.2 and the overall site readiness assessment.

V. PROCESSES

This section outlines the processes being utilized to identify potential restart items, conduct or obtain associated reviews/approvals, and assess readiness for restart through the integration of multiple processes/reviews. These processes will be defined, revised, implemented, and controlled under appendices to this plan. A revision to or a refinement of these processes, following the issuance of this Restart Plan, will constitute a revision to the Restart Plan and will be approved by the Site Vice President.

V.A RESTART ITEM IDENTIFICATION

The following three sections identify key aspects of the restart item identification process. It is expected that application of the specific processes described in sections V.A.2 and V.A.3 (e.g., criteria, forms) will continue until a time close to unit restart where transition to normal operational processes will occur. Appropriate implementation of normal processes for Unit One will be established as described in Appendix 12.

V.A.1 SOURCES OF POTENTIAL RESTART ITEMS AND ISSUES

Potential restart items have been (and/or may continue to be) identified through the following principal sources:

A. Management Review

The Site Vice President, his direct reports, and their direct reports met to identify both hardware and administrative weaknesses, problems, or areas for improvement that directly or indirectly contributed to the forced outages and should be addressed/resolved prior to restart. Additionally, this team identified additional actions that should be taken before the restart of the units, considering major weaknesses such as identified in the SIP, to further improve postrestart operational effectiveness. This team identified a base initial "52 item restart list" from which the current restart list developed.

B. Employee Feedback

In mid-March, utilizing the SIP and initial "52 item restart list," designated department managers met with targeted personnel groups to determine if other significant issues/problems existed that were not already identified or whether the current assessment of significance (and therefore priority) of problems was appropriate. (The designated departments and personnel populations were those considered most likely to be aware of other significant issues/problems.) Appendix 2 provides the documentation package utilized in that process. Additional potential restart items resulting from that process were presented to the MRRC for approval/disapproval for adding to the restart list.

C. Site Improvement Plan (SIP) Review

The SIP was reviewed on a line-by-line (SIP matrix line entries) basis by MRRC members for identification of potential restart items.

D. Program Reviews

As discussed in Section IV.C, team reviews of a number of program areas were conducted that identified both restart and postrestart recommendations.

E. Assessment Reviews

Trend reports and internal and external assessments, e.g., Nuclear Assurance trend reports and Performance Evaluations, and the 1992 SQN Nuclear Plant Self-Assessment ("Keuter report"), were reviewed by department mangers for potential restart items.

F. Backlog Reviews

Prior to establishing the BRC and the associated comprehensive backlog review effort, a number of site backlogs were reviewed by department backlog owners for the identification of potential restart items. The ongoing comprehensive backlog review effort through the BRC will ensure that all backlogs are identified and reviewed as appropriate against the current restart evaluation criteria. Additional potential restart items may be identified as part of this effort.

G. Restart Plan/Activity Implementation

Ongoing reviews assessments, and Restart Plan process/activity implementation, e.g., backlog reviews, may identify additional restart items.

V.A.2 RESTART EVALUATION CRITERIA

Criteria or considerations communicated by the Site Vice President for use in identifying potential restart items have focused on nuclear safety, plant reliability, and operational impacts, with examples provided such as items resulting in frequent entry into limiting conditions for operation (LCOs) and items that could result in plant transients. The following restart evaluation criteria reflect a consolidation and reformatting of these criteria/considerations, along with the explanation/guidance in the application of the criteria.

Actions needed to ensure technical specification (TS) operability will be completed before entering a mode for which associated requirements are applicable (except as allowed under LCO 3.0.4 exception). Actions needed to satisfy NRC docketed commitments or agreements associated with the current outages (e.g., CAL items) will be completed before restart. The following screening criteria will be used to evaluate other open items/issues to determine what additional actions should be taken before the restart of the units from the current outages. The criteria establish basic considerations involving nuclear safety, plant reliability, and operational impacts for which assessments and judgements must be applied, e.g., degree and probability or consequences of impact. Potential restart items should be conservatively assessed and presented to MRRC by the responsible organization/owner as described in Sections V.A.3 - V.D of this document. MRRC will either approve the item/issue for restart scope inclusion or will provide the basis for why the item/issue should be addressed following restart or the restart scope modified.

- **Adverse impact on safety system availability or performance**
  For example, potential for causing frequent entry into TS action statements, potential for entry into short-term TS action statements, and potential to render a component or system incapable of performing intended design function

- **Significant challenge to plant/personnel performance because of individual or aggregate impact**
  For example, high numbers of compensatory actions, disabled annunciators, high backlog numbers, and degraded or unreliable equipment performance

- **High potential to impact plant operating reliability**
  For example, likelihood for causing trips/transients, common or single failure point weaknesses, necessitates entry into short-term TS action statements, and likelihood for hardware failure before the end of the next operating cycle

- **Prudence of or need for working during two unit outage**
  For example, reduced TS action statement applicability, reduced outage risk, and reduced operational impact

The above criteria do not preclude the approval and inclusion of activities that do not meet

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the criteria but are determined desirable/prudent in consideration of overall site objectives, e.g., activities associated with ALARA (as low as reasonably achievable), industrial safety, and/or resource optimization.

V.A.3 POTENTIAL RESTART ITEM DOCUMENTATION AND EVALUATION

Potential restart items have been and are being documented and evaluated as described in this section. This process does not apply to items required to satisfy TSs, high-priority outage work orders/work requests, or other normal emergent outage scope addition items handled through the outage addition process in SSP-7.2, "Outage Management." It is recognized that the forced Unit 2 and Unit 1 outage schedules and the Unit 1 Cycle 6 refueling outage schedule contain activities not added through this process.

Potential restart items from any source may be documented on form Att. 3-1, "Potential Restart Evaluation for Sequoyah", contained in Appendix 3, reviewed and concurred with by the responsible supervisor, and provided to the Manager, Project Management and Controls, for scheduling a MRRC review. Items that have been previously (prior to issuance of this plan) presented to MRRC or previously identified/evaluated utilizing alternative documentation do not have to be placed (retrofitted) on the form in Appendix 3. Outage hardware related additions/deletions are documented on form Att. 3-2, "Restart Work Item Addition/Deletion Form" as described in Appendix 3. This process is in addition to the normal outage activity addition process provided under SSP 7.2. Items resulting from and documented through the Restart Plan implementing processes, e.g., BRC reviews, will also be provided to the Manager, Project Management and Controls, for scheduling MRRC review and approval as defined in this plan. The restart form provided in Appendix 3 need not be used for items documented through these processes.

The deletion of restart items from the restart scope requires technical evaluation by the system engineer and MRRC approval. MRRC may delegate day-to-day review authority for WR deletions to BRC with followup overview presentation to MRRC. This process is in addition to the normal outage activity deletion process provided under SSP-7.2. This process is also implemented through Appendix 3, Attachment 3-2.

Completion of restart items will be documented on a Restart Item Closure form as indicated in Appendix 10.

V.B MANAGEMENT RESTART REVIEW COMMITTEE (MRRC)

V.B.1 MRRC COMPOSITION

The MRRC is chaired by the Site Vice President and is composed of the following site members:

> SQN Site Vice President (Chairman)
> Plant Manager
> Engineering and Modifications Manager
> Site Licensing Manager
> Maintenance Manager
> Operations Superintendent
> Site Quality Manager

V.B.2 RESPONSIBILITIES AND FUNCTIONS

The MRRC oversees and directs the overall management and implementation of the restart activities and processes addressed under this Restart Plan. The MRRC approves or disapproves potential restart items/issues, reviews summary results of restart evaluations, reviews the adequacy of restart activity completion verification activities, and reviews results of restart readiness assessments and affirmations. MRRC will provide overall management direction and approval of the restart process, including the outage schedule development, execution, and completion.

V.B.3 MRRC MEETINGS

MRRC meetings to review potential restart items or to review results of restart item evaluations are scheduled through the Manager, Project Management and Controls. Potential restart items are presented to MRRC during scheduled meetings by the appropriate department manager, program owner, system engineer, or other sponsoring individual. MRRC makes a restart determination based on the information presented or may direct that an additional evaluation or information be obtained before making the final restart determination. MRRC assigns an "owner" for each restart list item. For items determined to not be restart items, MRRC considers if the item should be placed in the SIP, handled by existing processes, or worked in an expedited manner.

MRRC meeting decisions, including the addition of items to the SQN restart (evaluation) list, are documented, controlled, and tracked by the Manager, Project Management and Controls, or his representative.

V.C RESTART EVALUATION LIST

The restart evaluation list (i.e., restart list) is maintained and updated by the Manager, Project Management and Controls (Reference 14). MRRC approves additions or deletions of restart list activities as described in this plan.

V.D BACKLOG REVIEW COMMITTEE (BRC)

The BRC was established to effect a comprehensive and consistent review of key site backlogs for restart consideration. Prior to establishment, a number of backlogs or portions of backlogs had already been evaluated by department managers as restart item assignments or independent assessment efforts; additionally, the employee feedback process had identified a number of restart items from various backlogs. A multidiscipline composition was established to ensure appropriate site impact considerations, e.g, Operations' SRO input. Members were selected based upon broad experience, knowledge, and perspectives. The implementation of the backlog review through the BRC ensures the comprehensiveness of backlog review efforts, appropriate operational impact assessments using a current SRO licensed individual, and consistency in backlog review implementation. Reviews are being conducted on a system basis as appropriate to provide the foundation for assessing the aggregate impact of outstanding items/issues on system functionality. Members serve as representatives or liaisons with associated departments to ensure the effective coordination of the completion of this effort with other restart processes, e.g., system readiness and department readiness affirmations. The detailed process is described in and controlled under Appendix 4 (References 12 and 24).

V.D.1 BRC COMPOSITION

The BRC is composed of multidisciplined members representing the key site organizations owning or affected by the majority of site backlogs. The members include the following:

    H. R. Rogers, Technical Support Program Manager (lead)
    M. J. Lorek, Nuclear Engineering (current SRO)
    I. Dibiase, Maintenance
    C. R. Brimer, Nuclear Engineering

V.D.2 BRC RESPONSIBILITIES AND FUNCTIONS

The BRC identifies and evaluates existing site backlogs (as defined in Appendix 4) as of May 1, 1993, for their individual and aggregate impact on restart and, with the recommendation of the department backlog owner and/or affected system engineer(s), makes

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restart decisions on those backlogs. The BRC uses the collective experience and judgement of members with supporting input and conducts reviews against the restart evaluation criteria. The system engineer (as the system owner) participates in backlog reviews and through his/her system-specific expertise and judgement has significant impact on the BRC decision-making process for system related backlogs. The BRC process provides significant input to the system readiness evaluation described in Appendix 5. The BRC presents to the MRRC, with department head and/or system engineer support as appropriate, the summary results of their determinations. Items/issues that are recommended for restart and items/issues for which a restart recommendation is not clear are discussed in detail with the MRRC.

For items for which the evaluation criteria are generally satisfied but it is determined that significant schedule/resource impacts would be involved, the BRC, with input from the department head/system engineer, may assess the technical acceptability of not resolving the item(s)/issue before restart and the level of equipment, personnel, or program performance "risk" that could be assumed or expected. These items would be presented and discussed in detail with the MRRC for final restart determination. The restart item addition/deletion process is described in and controlled under Appendix 3.

Backlogs can present an adverse impact to effective plant operation because of the effect of individual or aggregate items and because of the demands that backlogs place on managing line organizations. Collateral to the BRC's primary restart responsibility, the BRC may document observations and formulate recommendations for improvement of how the site accumulates and manages backlogs for senior site management consideration.

Emergent items identified after the backlog review process cutoff date (May 1, 1993) are reviewed for restart scope inclusion as described in Appendix 4. In general, the interim process for review of emergent items begins the transition from use of special restart review processes back to use of normal operational review processes. This process still employs use of the restart evaluation criteria and additional management oversight. The BRC reviewed restart determinations for emergent WRs initiated between May 1 and July 1, 1993 to validate appropriate application of criteria through use of normal processes. The system engineers review restart determinations for emergent items against their systems for ongoing input into system readiness assessment. Unresolved differences in opinions are presented to MRRC for final determination.

V.E SYSTEM READINESS

Prior to restart, the responsible system engineer will review the status of each system as indicated in Appendix 5 and will affirm restart readiness of the system to support safe and reliable restart and operation during the next operating cycle. The purpose of this process is to collectively assess system readiness from a hardware standpoint to support the management restart decisions, to reinforce ownership for system performance and improvement with the system engineers, and to lay the foundation for postrestart work/improvement prioritization.

The process requires both a preliminary assessment of projected system status at restart (assuming completion of identified outstanding restart work) and a final assessment and affirmation prior to restart. Outstanding restart activities at the time of the final system readiness will be identified. Technical Specification systems will be verified operable before entry into a mode where they are required operable. System work items identified subsequent to the final system readiness affirmations will be handled by the normal post restart work processes.

Walkdowns will be conducted on focus systems to assess material condition as indicated in Appendix 5. Focus systems include key safety significant and plant reliability significant systems. Walkdowns at system operating temperature and pressure will be conducted as appropriate to identify leaks following system restoration. The Technical Support manager will coordinate the overall completion of these efforts with other outage and startup activities.

Considerations that will be addressed by the system engineers in support of the readiness affirmation will include the status of the material condition of the system including the review of outstanding backlogs or open items/issues on their system; the completion of walkdowns on focus systems listed in Appendix 5; the completion of the review of information related to significant recurring or repetitive equipment problems and a plan to address them; the establishment of compensatory measures (if appropriate) for postrestart items/issues; and the establishment of priorities for the continued improvement of system performance and system material condition.

System readiness reviews will be reviewed by the system engineer supervisor, the BRC, the Technical Support manager, and the MRRC as indicated in Appendix 5. System readiness affirmations will be input into the department readiness affirmations discussed in Section V.F, and into the overall MRRC site readiness assessment.

The system readiness process is detailed in Appendix 5.

V.F DEPARTMENT READINESS AFFIRMATION

Prior to restart, the managers responsible for each major functional department as indicated in Appendix 6 will affirm restart readiness of that department to support a safe and reliable restart and operation during the next operating cycle. The purpose of this process is to ensure department completion of assigned restart actions; to ensure that programs, processes, organization, and personnel/management capability are sufficient to support safe and reliable operation; to ensure that postrestart work and improvement efforts (including backlogs) are sufficiently defined, prioritized, scheduled, and controlled; and to ensure that appropriate postrestart assessment and monitoring processes are in place (See References 13 and 25).

The process leading to this affirmation will include a series of meetings with the department manager and the Site Vice President to discuss needed actions leading to department restart readiness, to review progress in attaining organization/functional readiness, and to assist in department manager development via the process for establishing department readiness for both short- and long-term considerations. Final department readiness affirmations will be reviewed by the MRRC and will be input into the overall MRRC site readiness assessment.

The department readiness affirmation process is detailed in Appendix 6.

V.G SITE READINESS ASSESSMENT

The overall site readiness assessment will consist of a "rollup" of a number of interfacing and overlapping inputs. These include the system and department readiness affirmations described in Sections V.E and V.F, the closeout by the outage management team of outage activities, the closeout/disposition of all restart list items, the review of organization and personnel adequacy (Section IV.E) including the corporate/site interface (Section IV.F), and the review/assessment of restart readiness assessment activities described in Section VI. The MRRC will review and evaluate both the inputs and rollup of these inputs and provide, through the Chairman, final restart approval and authorization. A MRRC readiness assessment will be conducted before initial mode change (Mode 5 to 4) and the full site readiness assessment will be completed before unit restart, defined as unit criticality. Preliminary or intermediate assessments will be conducted as determined appropriate by the MRRC or the Site Vice President. The Plant Operations Review Committee will also review site readiness for initial mode change and unit restart.

The site readiness assessment process is depicted in Appendix 7.

Appendix 11, Startup and Power Ascension Plan, describes the management plan for ensuring the safe, controlled, and deliberate return to service of Sequoyah Nuclear Plant (SQN). This plan defines and describes assessment hold points where reviews, affirmations, and approvals will be conducted. Control/assessment hold points will occur at Mode 5 prior to entry into Mode 4; Mode 3, prior to pulling control rods to achieve criticality; 30% reactor power, +/- 10%; 65% reactor power, +/- 10%; 90% reactor power, +/- 5%; and 100% reactor power. This plan also describes additional oversight and checks during the startup and power ascension to review plant equipment and personnel performance. This plan integrates portions of other Restart Plan processes, outage closeout processes, and site startup processes and procedures with additional requirements set forth by the startup and power ascension plan.

VI. ASSESSMENT/OVERSIGHT

As part of the restart activities, a number of assessments, reviews, and oversight activities are being employed to ensure that key areas for improvement are identified, that the associated restart plan and activities are appropriate to address those weaknesses, and that the restart plan is effectively implemented. Key review and assessment activities include: (1) the technical program reviews referenced in Section IV.C; (2) a special SQN NSRB review of the restart plan; (3) a high-level, Senior Management Oversight Group review of the restart plan and overall restart readiness; (4) internal and external reviews of the BOP; (5) a Restart Readiness Team review of the Operations department's restart readiness; (6) an NSRB/QA special review of backlogs; (7) a comprehensive program of Nuclear Assurance assessments and audits; and (8) restart readiness oversight, assessment, and affirmation processes described in Section V of this document. A listing of these activities is provided in Appendix 1.

The application of these efforts in the restart plan development and implementation is described below.

VI.A IMPROVEMENT AREA IDENTIFICATION - RESTART PLAN ADEQUACY

As discussed in Section I, an effort was underway prior to the shutdown of the units to identify the root cause(s) or principal barriers to the successful accomplishment of TVA Generating Group objectives and to establish detailed action plans through an integrated Site Improvement Plan to address targeted areas for improvement. The identification of specific and common causes/barriers was accomplished through a management team review of recent events, trend analyses, and internal and external assessments. In more broadly analyzing the underlying causes of overall performance weaknesses over the past several years, two general causes were identified: ineffective resource management and ineffective personnel/management performance. As a result of this recent and current analysis, the six focus areas described in Section IV were identified for intensive short-term and continuing long-term improvement.

Three additional independent reviews are being employed to evaluate the accuracy of the above assessment and associated adequacy of the overall restart plan initiatives described in this document. They include an INPO problem/event analysis to determine if additional underlying/common weaknesses exist (Reference 29); a special NSRB evaluation of the restart plan scope and approach (References 10 and 31); and a review of the SQN history and the restart plan by an independent industry Senior Management Oversight Group (References 8 and 28). The results of additional restart readiness assessments, reviews, and oversight activities described below will be evaluated for the need for additional focus or scope within the restart plan on an ongoing basis.

VI.B RESTART PLAN IMPLEMENTATION/EFFECTIVENESS - RESTART READINESS

A combination of varied restart readiness processes and assessments/reviews will be conducted to support a determination of site readiness to safely restart and operate the units over the next operating cycle. The implementation of the Restart Plan, through readiness assessments/affirmations, BRC and MRRC review/oversight, and final closure and documentation processes, provides a structured approach to line readiness assessment. The extensive use of multiple non-line assessments, reviews, and oversight activities is being additionally employed to address readiness in targeted areas such as the RRT review of the Operations department's readiness, and more general readiness assessments such as the Senior Management Oversight Group review addressing management, organization, personnel, hardware, and technical program issues. The comprehensive Nuclear Assurance restart assessment program (Reference 11) was developed by the consideration of programmatic, hardware, and personnel performance weaknesses. The TVA Nuclear Safety Review Board will meet for a final assessment of restart readiness just prior to restart of unit 2 (Reference 34). Restart readiness assessments will be presented to and reviewed by the MRRC for the determination of additional needed actions and/or integration into the overall site readiness assessment rollup.

VI.C ASSESSMENT CAPABILITY AND EFFECTIVENESS - POSTRESTART ASSESSMENT

A number of activities are ongoing to strengthen the assessment/root cause capability and effectiveness. Department readiness assessments and affirmations will ensure that meaningful performance indicators are established and monitored and that these measures are being integrated into the postrestart Site Improvement Plan. A key element of the restructuring of the corporate organization described in Section IV.F is to clearly define and enhance the corporate oversight functions and effectiveness. A comprehensive audit of the corrective action program has been conducted to assess implementation effectiveness and identify actions for further strengthening from both programmatic and implementation perspectives.

VII. CLOSURE AND DOCUMENTATION

The MRRC will review the rollup documentation of Restart Plan completion as described in Section V.G. Documentation and closure will be tracked, compiled, and presented to the MRRC.

VIII. POSTRESTART

As stated in the objective to the Restart Plan (section II), the overall objectives of the SQN restart efforts are to remove or reduce barriers to effective plant operations and lay the foundation for continuing postrestart improvement. Prior to the current forced outage, the SQN Site Improvement Plan (SIP) was undergoing development and refinement to provide a living document for charting ongoing site improvement efforts; at the time of the shutdown, the SIP provided a starting framework for development of the restart activities described under this Restart Plan. As a result of implementation of the many restart activities associated with the Restart Plan, the scope, priority and schedule for SIP implementation require extensive updating and reevaluation. Following such updating, which is underway, the SIP will be integrated into the SQN business plan. This business plan will target improvement efforts correlated to overall station and generating group objectives.

A Post Restart Plan is being developed and will be submitted to NRC before restart which will describe how SQN will identify, prioritize, fund, implement and manage postrestart improvement activities. The management systems described in this plan will provide the basis for ensuring effective completion of post restart improvement activities and ensuring effective management of resources to maintain safe and reliable operations into the future. The Post Restart Plan will describe the SQN business planning process; work prioritization processes; the composition and significance of post restart backlogs; management controls and oversight to ensure effective implementation of post restart improvements; and identification of key post restart improvement efforts.

The above described processes and controls will be established before restart. Identification of improvement priorities and schedules will be accomplished through "living" implementation of these processes.

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7. SQN Technical Programs Review, memorandum dated May 11, 1993
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28. Sequoyah Senior Management Oversight Group, letter from G. Carl Andognini to Mr. R. Eytchison and Mr. M. Medford dated June 17, 1993

29. Letter from A.C.Tollison (INPO, Vice President & Director Plant Evaluation Division) to Mr. Robert A. Fenech dated June 4, 1993

30. Backlog Review Committee (BRC) Report, memorandum from H.R. Rogers to Management Restart Review Committee (MRRC) dated June 11, 1993

31. Restart Plan Review Comments, letter from Gerald H. Neils, SQN NSRB Advisor, to Tom McGrath, SQN NSRB Chairman dated June 28, 1993

32. SQN Restart Readiness Team Review of Operations, memorandum from T.J. McGrath, G.L. Rogers, E. Preston, Jr., A.B. Scott to R.M. Eytchison and R.A. Fenech dated July 2, 1993

33. Division of Responsibilities - Technical Support and Nuclear Plants, memorandum from Mark O. Medford to Those listed dated July 1, 1993

34. SQN Nuclear Safety Review Board (NSRB) Meeting Announcement - Meeting No. 143 - August 9-10, 1993, memorandum from T.J. McGrath to Those listed dated July 15, 1993

35. Technical Program Review Oversight Panel Presentation, memorandum from John L. Hamilton to Those listed dated July 21, 1993

36. Backlog Review Committee (BRC) Supplement to the Report Dated 6-11-93, memorandum from H.R. Rogers to Management Restart Review Committee (MRRC) dated July 24, 1993

37. SQN - Restart Item Closure, memorandum from Robert A. Fenech to Those Listed dated June 23, 1993

38. SQN - Holdpoints for NRC Approval, letter from Robert A. Fenech to S.D. Ebneter, expected issuance of October 1, 1993

39. SQN-Transition From Restart Plan To Normal Processes, letter from Robert A. Fenech to Those Listed dated November 18, 1993.

X. FIGURES

1. SQN Restart Plan Flowchart

XI. APPENDICES

1. Assessment/Review/Oversight Activity Listing
2. Employee Feedback Process
3. Process for Evaluating, Adding or Deleting Potential Restart Items
4. Backlog Review Process
5. System Readiness Assessment and Affirmation Process
6. Department Readiness Assessment and Affirmation Process
7. Site Readiness Assessment Process
8. Site Licensing Regulatory Closure Affirmation
9. Department Program Owner Reviews

X. FIGURES

XI. APPENDICES

APPENDIX 1

APPENDIX 1

ASSESSMENT/REVIEW/OVERSIGHT ACTIVITY LISTING

The following assessments, reviews, and oversight activities are being performed to (1) ensure that areas needing improvements are identified, including the underlying cause(s) for overall performance weaknesses; (2) to ensure that the Restart Plan is appropriate to the achievement of overall restart plan objectives; (3) to verify the proper implementation of the restart plan; and (4) to assess the effectiveness of restart actions, i.e., restart readiness.

I. Identification of Restart Focus Areas for Improvement

- Prior to unit shutdown, an overall Site Improvement Plan was developed to target key areas for improving the ability to meet overall site and Generating Group objectives, i.e., nuclear safety/regulatory performance, plant capacity factor, and generation cost per kilowatt-hour. To develop this plan, the site management team reviewed previous events and trends and internal and external assessments/reviews. The plan included both software and hardware issues and included the following focus areas: BOP, Operations' performance, and backlogs.

- Following the shutdown, the site management team reviewed key areas for improvement during the forced outages, including the review of the SIP areas. An initial restart list of 52 items was developed. This list included both specific items to be implemented as well as actions to evaluate other areas for potential identification of restart actions, e.g., an action to review corrective action (C/A) items or justifications for continued operation (JCOs).

- Following the development of the 52 item list, site management solicited employee feedback from designated departments to determine whether additional significant problems impacting nuclear safety, plant reliability, or operational performance existed that had not been identified in either the SIP or the 52 item list and whether the indicated management priority for resolution was considered inappropriate, e.g., true risk not recognized and therefore scheduled in SIP postrestart; and to identify any specific individual concerns, e.g., a specific backlog item such as a hardware upgrade. This effort provided an overlap with some actions being taken as part of the 52 item list (Appendix 2).

- As restart evaluation criteria evolved, additional reviews of the SIP and internal and external assessments/reviews were conducted by site management, and additional items were added to the restart list as appropriate.

- INPO conducted a problem/event analysis using C/A documents for 1992 and 1993 to determine if additional problem areas existed that had not been identified by the above efforts. (Reference 29)

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APPENDIX 1

II. Specific Ongoing Reviews or Conducted in Specific Focus Areas to Ensure Clearly Defined Scope of Problems

- INPO assist plant walkthrough to broadly identify plant weaknesses based on experience and judgement (Reference 3).

- Completion of the Secondary Plant Reliability Study (Reference 4).

- Conduct of an independent (Stone and Webster) design review of the secondary plant (Reference 5).

- Ongoing Nuclear Assurance performance evaluation for Operations and Maintenance departments (References 11 and 18).

- NSRB subcommittee review of engineering backlogs (Reference 8).

- EPRI review of the erosion/corrosion program.

- Team reviews of high-risk SQN technical programs headed by the Chairman, NSRB (References 6 and 7).

- Personnel/management evaluations (Reference 20).

III. Reviews/Assessments of Restart Plan Adequacy

- NSRB special session review to determine whether the restart plans are sufficiently comprehensive to ensure identification of problems requiring correction prior to restart and those necessary for long-term improvements (Reference 10); NSRB review of Restart Plan (Reference 31).

- A review of the SQN Restart Plan (References 8 and 28) by a high-level Senior Management Oversight Group using experienced industry managers and reporting to the Vice President, Nuclear Operations, and Vice President, Technical Support.

IV. **Reviews/Assessments of Restart Plan Implementation and Effectiveness - Restart Readiness (in addition to the review and readiness processes described in Section V of this document)**

- EPRI and Altran review of the E/C recovery program and long-term program upgrades.

- Multiple Nuclear Assurance and Independent Safety Engineering assessments, audits, and followups of department, backlog, and program areas (Reference 11).

- Contract expertise using Reedy Associates in the Section XI program areas and Impell and Altran in the E/C program areas.

- The oversight panel for the team technical program reviews will review the actions taken to address the team review findings (Reference 35).

- A review by an Operations department Restart Readiness Team to assess and verify the readiness of operations to conduct safe and effective reactor operations. This review team will be led by the Vice President, Nuclear Readiness (D. R. Keuter), and will be composed of senior TVA managers and industry consultants (Reference 32).

- The Senior Management Oversight Group will conduct a week-long assessment of overall site readiness for restart, addressing management, organization, personnel, hardware, and program issues (Reference 8).

- A special session for NSRB review of final SQN restart readiness following the NRC Operational Readiness Assessment Team (ORAT) inspection and before mode 2 (Reference 34).

IV. **Start-up Oversight**

- Observations of the Operations department by Nuclear Assurance will continue during start-up and mode change evolution.

- The Operations department will have a team of nonshift SROs conducting 24-hour Operations oversight starting approximately one week in advance of Mode 4 and continuing through achievement of 100 percent power.

- An integrated startup and power ascension plan addressing site readiness reviews, augmented management oversight, material condition and housekeeping, regulatory closure, power ascension activities, and specified control/assessment holdpoints is being prepared.

APPENDIX 2

APPENDIX 3

APPENDIX 3

PROCESS FOR EVALUATING, ADDING OR DELETING POTENTIAL RESTART ITEMS

I. Objective

Provide a documented mechanism for evaluating, reviewing and approving potential restart items for addition or deletion to the current forced outage scope.

II. Applicability

As described in Section V.A of the Restart Plan.

III. Implementation

The attached memorandum from Robert A. Fenech provides overall direction for evaluating restart items. Attachment Forms 3-1 and 3-2 provide the documented mechanism to obtain appropriate evaluation, review and approval of potential items for either addition or deletion.

Form Att.3-1 was developed early in the shutdown period for identification of any potential restart item. At the time of issuance of Revision 1 to this plan, Att.3-1 is generally used to document identification of *(adding)* potential restart *non-WR* items/issues or the basis for *deleting or changing the scope* of an existing *non-hardware* restart item. System related *hardware* items are generally added or deleted/changed by use of form Att.3-2 as described below to provide system engineer involvement in the decision-making process for outage hardware scope deletions and a mechanism for presenting system engineer disagreement with a non-restart determination to MRRC for final determination.

Form Att.3-2 was initially developed under Revision 0 to this plan to document restart work item *deletions*. Form Att.3-2 issued under Revision 1 to this plan can be used to document both restart item *additions or deletions*. While emergent (post 5/1/93) WR's are evaluated by the WCG SRO's against the restart criteria and do not *require* an Att.3-2 for outage *addition*, an Att.3-2 may be used to document basis for addition for presentation to MRRC to resolve any disagreement between the system engineer and outage management or the WCG regarding the restart determination. This application is also acceptable for similarly documenting/resolving system engineer disagreement for any item type, e.g., PER, DCN, etc. Att.3-2 is used in addition to the normal outage activity addition/deletion process provided in SSP 7.2.

As indicated in Appendix 4, MRRC approval of emergent (post 5/1/93) WR restart *additions* is not required and MRRC may delegate approval of emergent corrective action document restart additions to the daily corrective action Management Review Committee. Deletion of previously defined restart items from the restart scope must be approved by MRRC; however MRRC may delegate authority to BRC for day-to-day implementation of WR deletions with followup MRRC briefing. Responsibility for MRRC briefing rests with the BRC.

ATTACHMENT 3-1 REPLACED
BY
ATTACHMENT 3-2

RESTART ITEM IDENTIFICATION (RESTART LIST#, WORK DOC.#, UNIT, SYS, ETC.)	RESTART ITEM OWNER
	ADDITION / DELETION INITIATOR

ITEM / WORK DESCRIPTION:

REASON FOR ADDITION / DELETION (Schedule Impact, Mtl Availability, Other)

SYSTEM ENGINEER TECHNICAL EVALUATION

(Address nuclear safety impact, affect on technical specification compliance, and risk to plant operation and reliability if this work is not completed prior to restart. Compensatory measures and/or alternate means of addressing the problem/issue if not worked prior to restart needs to be included.)

Cognizant System Engineer Signature _____ Date _____

MANAGEMENT RESTART REVIEW COMMITTEE (MRRC) APPROVAL

MRRC Approval Signature _____ Date _____

DISTRIBUTION OF APPROVED FORMS:

A. Disapproved form to Addition / Deletion Initiator
B. Approved form:

 – Original to Addition / Deletion Initiator to be attached to a completed Figure 1 – Outage Scope Control Form (Appendix I, SSP-7.2) and submitted to the Outage Manager on the affected unit.

 – Copy to P M & C to remove / add item from restart list

 – Copy to Cognizant System Engineer

RESTART ITEM IDENTIFICATION (RESTART LIST#, WORK DOC.#, UNIT, SYS, ETC.)	RESTART ITEM OWNER
	ADDITION / DELETION INITIATOR

ITEM / WORK DESCRIPTION:

REASON FOR ADDITION / DELETION (Schedule Impact, Mtl Availability, Other)

SYSTEM ENGINEER TECHNICAL EVALUATION

Cognizant System Engineer Signature _____ Date _____

MANAGEMENT RESTART REVIEW COMMITTEE (MRRC) APPROVAL

MRRC Approval Signature _____ Date _____

DISTRIBUTION OF APPROVED FORMS:

A. Disapproved form to Addition / Deletion Initiator

B. Approved form:

- Original to Addition / Deletion Initiator to be attached to a completed Figure 1 – Outage Scope Control Form (Appendix I, SSP–7.2) and submitted to the Outage Manager on the affected unit.

- Copy to P M & C to remove / add item from restart list

- Copy to Cognizant System Engineer

APPENDIX 4

APPENDIX 4

BACKLOG REVIEW PROCESS

OBJECTIVE

- Identify all site backlogs as of May 1, 1993, and review (verify reviewed) to determine whether either the individual or aggregate impact of backlog items needs to be addressed before startup.

- Identify emergent backlog items after May 1, 1993, and evaluate them for restart.

- The backlog review process, which defines the responsibilities of department managers (backlog owners), the Backlog Review Committee (BRC), system engineers, the Management Restart Review Committee (MRRC), and other site organizations, will be used to accomplish this task.

PROCESS

I. Ensure Full Scope of Backlogs Identified - Department Manager

   A. A backlog item is a pre-May 1, 1993, item.

   B. Beginning with the Sequoyah Improvement Plant (SIP) list, department managers review to affirm that other lists do not exist (e.g., EQ binder update backlog, NER, and licensing commitments) and identify additional lists to Backlog review Committee (BRC) by May 10, 1993.

Note: A backlog is considered to be any accumulation of unimplemented work beyond active in-process levels. Questions regarding the application of this definition should be discussed with the MRRC.

   C. Backlogs to be reviewed by system will be reviewed against the list of systems (Attachment 4-1-A) developed by Technical Support and the BRC as of May 17, 1993. These systems are typically safety, reliability, or balance of plant (BOP) related or common. Systems not included are, in general, non-process systems.

   D. The list of site backlogs identified as of May 17, 1993, and categorized as requiring either BRC or department manager reviews is shown in Attachment 4-1-B. BRC evaluated backlogs are further broken down in Attachment 4-1-B to identify which will receive review by system and which will receive a programmatic review. The basis for backlog categorization is also shown in Attachment 4-1-B.

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II. Department Managed Backlogs

Backlogs identified in Attachment 4-1-B as "Department Managed Backlogs" will be reviewed for restart by the department using Attachment 4-3 with recommended restart items brought to the MRRC for final restart determination, following the normal process. Each post restart backlog in the Department Managed Backlog category will be evaluated by the department manager using the process in Attachment 4-4. The BRC will review the department managed backlog evaluations and brief the MRRC on the results of that review (See References 27 and 36).

III. Backlog Review Committee Evaluated Backlogs - Department Manager Responsibilities

A. Review (or verify reviewed) backlogs as of May 1, 1993, against restart evaluation criteria (Attachment 4-2).

Note: Attachment 4-2 criteria reflect reformatting and explanation of application of essentially the same criteria previously distributed for use.

B. Backlog Review Documentation

1. Group backlog items by system. Evaluate backlog items against restart criteria in Attachment 4-2 and document the department manager evaluation on the form in Attachment 4-3. A separate form is required for each item for the following backlogs:

Major Issues Lists (MILs)
CAQs (II, PER, FIR, CAQR, SCAR)

Items for their backlogs on the same system and with the same restart call my be grouped on one Attachment 4-3 form.

2. Department managers (backlog owners) provide evaluations as discussed in Item 1 to the BRC.

C. Evaluation of Postrestart Backlog (department manager only - not BRC)

1. Backlog Composition Evaluation (Attachment 4-4)

2. Backlog "Number" Evaluation (Attachment 4-4)

3. Present completed Attachment 4-4 to the MRRC as described in Section IV below.

IV.   Backlog Review Committee (BRC)

A. The BRC charter, including members, is shown in Attachment 4-5.

B. BRC Process

1. The BRC evaluates department manager review documented in Attachment 4-3 against restart criteria in Attachment 4-2:

   - Review "YES" and "NOs" for CAQs and DCN/MIL backlogs
   - Review only Nos for other backlogs

2. Affected systems engineers will participate in the BRC review for system related backlogs.

3. The BRC may schedule department managers to meet with the BRC/system engineers if discussion or more detail is needed.

4. The system engineer and the BRC will concur and/or resolve any differences with the department manager and document concurrence by signing Attachment 4-3. The continuation page for Attachment 4-3 is provided for either the system engineer or the BRC to provide comments, basis, etc., resulting from their assessment.

V.   MRRC Review of Backlog Evaluation

A presentation will be made to the MRRC for the 26 "BRC Evaluated Backlogs" evaluated by the BRC. Each presentation will consist of two parts.

A. Attachment 3 Evaluations for Restart

Backlog items will be grouped and presented in three categories: restart, nonrestart, and "grey." The presentation will focus on the "YES" and "grey" items with the MRRC making/concurring with restart calls for these items. Backlog presenters to the MRRC will include the backlog owner, the BRC, or system engineers, as appropriate.

The backlog presenter is responsible for documenting restart decisions made in the MRRC meeting on Attachment 4-3 forms. The disposition of Attachment 4-3 documentation at the end of the MRRC meeting is as follows:

1. "NO" items to Project Management and Controls (PM&C) for Postrestart Schedule

2. "YES" items to PM&C for Restart Schedule

3. All documentation to System Restart Notebooks (For System Related Backlogs)

B. Department Manager Characterization of Postrestart Backlog (Attachment 4-4)

VI. Review of Emergent Items for Restart After May 1, 1993 (End Date for Backlog Review Committee) using Restart Evaluation Criteria.

A. Emergent items after May 1, 1993, will be handled as shown in Attachment 4-6.

B. Maintenance work requests/work orders (WRs/WOs)

The Maintenance department submits WRs/WOs to Operations for restart determination:

1. "YES" maintenance WRs/WOs scheduled by Work Control in accordance with Site Standard Practice (SSP) 7.2.

2. "NO" maintenance WRs/WOs will be evaluated by the Maintenance department as part of their postrestart backlog evaluation (refer to Attachment 4-4) which, in turn, is input to Maintenance department readiness (Appendix 6).

3. The BRC reviews restart determinations for emergent WRs initiated between May 1 and July 1, 1993 only to validate appropriate application of criteria through use of normal processes.

4. Outage management and/or the plant manager may review emergent WRs restart determinations in a management oversight capacity as determined appropriate.

C. Conditions adverse to quality/justifications for continued operation (CAQs/JCOs)

Corrective Action Management Review Committee (MRC) evaluates CAQs/JCOs for restart:

1. "NO" items returned to department manager (owner) to be included in his/her postrestart backlog evaluation (refer to Attachment 4) which, in turn, feeds that department's readiness assessment (Appendix 6).

2. "YES" items to Project Management and Controls for addition to restart list and to outage management for outage schedule addition in accordance with SSP-7.2.

D. System Engineer Evaluation

Emergent items and their corresponding restart determinations in Paragraphs B and C above will be evaluated by system engineers as part of their System Readiness assessment (refer to Appendix 4-5)

E. Other Emergent Items

All other emergent items from the backlog lists in Attachment 4-1-B or any other source will evaluated by the department manager (owner) for restart.

1. "YES" items will be brought to the MRRC for final restart determination following normal process.

2. "NO" items will be included in the department manager's postrestart backlog evaluation (Attachment 4-4), if applicable. All items in the category will feed the department's Department Readiness Evaluation (Appendix 6).

VII. Other Backlog Efforts

The BRC will assess individually and in aggregate the projected composition and significance of post restart backlogs, building on BRC backlog restart evaluations and department postrestart backlog evaluations. The BRC will report the results of this assessment to MRRC. (Reference 36)

ATTACHMENT 4-1-A

SYSTEMS LIST

- 001   Main Steam System
- 002   Condensate System
- 003   Main and Auxiliary Feedwater System
- 005   Extraction Steam System
- 006   Heater Drains and Vents System
- 007   Turbine Extraction Traps and Drains System
- 012   Auxiliary Boiler System
- 013   Fire Protection (Other than High-Pressure Fire Protection and CO_2 Fire Protection)
- 014   Condensate Demineralizer System
- 015   Steam Generator Blowdown System
- 018   Fuel Oil System
- 020   Central Lubricating Oil System
- 024   Raw Cooling Water System
-    025   Raw Service Water System
- 026   High Pressure Fire Protection System
- 027   Condenser Circulating Water System
-    029   Potable (Treated) Water Distribution System
- 030   Ventilating System
-    031   Air-Conditioning (Cooling - Heating) System
- 032   Control Air System
- 033   Service Air System
-    034   Vacuum Priming System
- 035   Generator Hydrogen Cooling Systems
-    036   Feedwater Secondary Treatment System
- 037   Gland Seal Water System
-    039 CO_2 Storage, Fire Protection, and Purging System
-    040   Station Drainage System
-    041   Layup Water Treatment System
-    042   Chemical Cleaning System
- 043   Sampling and Water Quality System
- 046   Feedwater Control System
- 047   Turbogenerator Control System
-    050   Hypochlorite System
-    052   System Test Facility (Seismic Instrumentation)
- 054   Injection Water System
- 055   Annunciator & Sequential Events Recording System
-    056   Temperature Monitoring System
- 057   Associated Electrical Systems (Generator)
- 058   Generator Bus Cooling System
-    059   Demineralizer Water & Cask Decontamination System
- 061   Ice Condenser System
- 062   Chemical and Volume Control System
- 063   Safety Injection System

ATTACHMENT 4-1-A

SYSTEMS LIST

- 065 Emergency Gas Treatment System
- 067 Essential Raw Cooling Water System
- 068 Reactor Coolant System
- 070 Component Cooling System
- 072 Containment Spray System
- 074 Residual Heat Removal System
- 077 Waste Disposal System
- 078 Spent Fuel Pit Cooling System (Fuel Holding and Cranes)
- 079 Fuel Handling and Storage System
- 081 Primary Makeup Water System
- 082 Standby Diesel Generator System
- 083 Hydrogen Recombination System
- 084 Flood Mode Boration System
- 085 Control Rod Drive System
- 088 Containment Isolation System
- 090 Radiation Monitoring System
- 092 Neutron Monitoring System
- 094 Incore Monitoring System
- 099 Reactor Protection System
- 200 Status Monitor System
- 201 480-V Electrical Boards and Motor Control Center
- 202 6900-V Electrical Boards (Logic Panels)
- 234 Heat Tracing System
- 241 Switchyard and Transformers (Including 22.5, 161, & 500-kV)
- 244 Communications System
- 245 Security System
- 247 Lighting System
- 250 AC/DC Low Voltage Power System
- 263 Condenser Tube Cleaning System
- 268 Permanent Hydrogen Mitigation System
- 301 P-250 Computer System
- 302 Penetrations and Sleeves (Mechanical and Electrical)
- 305 Sewage System
- 311 Control Building Heating, Ventilating, Air-Conditioning
        (Instruments and Valves) (was 31A)
- 313 Auxiliary Building Heating, Ventilating, and Air-Conditioning
        (Instruments and Valves) (was 31C)
- 317 Miscellaneous
- 410 Building Doors and Hatches (Includes Architectural Doors)
- 928 Makeup Water Treatment Plant Electrical Equipment
- 959 Demineralizer Water Storage & Distribution System for
        Makeup Water Treatment Plant

- Focus Systems - System Engineer Walkdowns as a Part of System Readiness

BRC EVALUATED BACKLOGS

- 1. WR/WO (includes orange ball list and defeated annunciators)*
- 2. JCO/EE*
- 3. Comp Measures*
- 4. Open DCNs
- 5. Hold Orders*
  6. Drawing Changes - Cat 2 & Cat 3
- 7. Operator Aids*
- 8. Obsolete Equipment
- 9. Issues (DCRs, MILs)**
  10. Deferral Request PMs 'Appendix L'
  11. Procedure Revisions
  12. Vendor Manual Updates
  13. DD Backlog
  14. SSD Backlog
- 15. CAQs (II, PER, FIR, PDFIR, CAQR, SCAR)**
  16. Q-List
- 17. TFARs*
  18. NER Items*
- 19. TACFs*
  20. NRC Commitments*
- 21. Technical Support Investigation Requests*
  22. Old Work Pl
  23. Weld Maps
  24. SMIs
  25. EQ Backlog
  26. UVAs in Design Inputs

- Areas to be looked on a systems basis. All other areas will be reviewed on a programmatic basis.

* BRC reviewed each item.

** BRC reviewed each item and will have individual review paper.

DEPARTMENT EVALUATED BACKLOGS

(evaluations subsequently reviewed by BRC)

1. QA Level II (No RIP)
2. Material Requirements
3. Instrument Data Packages
4. Labels
5. NPRDS Data Input
6. PRO, TROI Items
7. FSAR Changes
8. EMS Updates (Fuse Tab Updates Included)
9. Tech Spec Changes
10. Delinquent PM
11. Bid Reviews, Bin Reviews, Inspection Reports (PEG Material Issues)
12. ECN/DCN Backlog Closure
13. DCN Impact Review
14. Maintenance History Updates
15. Administrative Hold Procedures
16. PEG/DCN Procurement
17. 56 RIP Item Work Off 6/15
18. Calculation Cross Reference Systems (CCRS)
19. Non-TS SIs (Assume 200 Manhours/Group)
20. RCM Study
21. SI Reviews
22. SPTS
23. FSAR Reviews
24. PM Revisions

BACKLOG CATEGORY BASIS

Category A - Basis for BRC Backlogs

Basis for Backlog List:

- Could directly affect plant process equipment from a safety and reliability standpoint.

Basis for System vs. Program Review:

- Typically hardware-related or high potential to impact hardware issues
- Supports review by system to obtain aggregate impact on system functionality/reliability
- Potential to have significant impact for safe and reliable operation

Category B - Department Managed Backlogs

- Typically non-hardware administrative/management issues or with minor/indirect hardware impact potential
- Not considered to constitute a significant potential impact to safe and reliable operation
- The department manager is to assess restart/non-restart and impact to manage postrestart

ATTACHMENT 4-2

RESTART EVALUATION CRITERIA

Actions needed to ensure technical specification (TS) operability will be completed before entering a mode for which associated requirement are applicable. Actions needed to satisfy NRC docketed commitments or agreements associated with the current outages (e.g., CAL items) will be completed before restart. The following screening criteria will be used to evaluate other open items/issues to determine what additional actions should be taken before restart of the units from the current outage. The criteria establish basic considerations involving nuclear safety, plant reliability, and operational impacts for which assessments and judgments must be applied, e.g., degree and probability or consequences of impact. Potential restart items should be conservatively assessed and presented to the MRRC by the responsible organization/owner. The MRRC will either approve the item/issue for restart scope inclusion or will provide the basis for why the item/issue should be addressed following restart or the restart scope modified.

- Adverse impact on safety system availability or performance, e.g., potential for causing frequent entry into TS action statements, potential for entry into short-term TS action statements, and potential to render a component or system incapable of performing intended design function.

- Significant challenge to plant/personnel performance because of either individual or aggregate impact, e.g., high numbers of compensatory actions, disabled annunciators, and high maintenance backlog.

- High potential to impact plant operating reliability, e.g., likelihood for causing trips/transients, common or single failure point weaknesses, necessitates entry into short-term TS action statements, and likelihood for hardware failure before the end of the next operating cycle.

- Prudency of or need for working during two-unit outage, e.g., reduced TS action statement applicability, reduced outage risk, and reduced operational impact.

The above criteria do not preclude approval and inclusion of activities that do not meet the criteria but are determined desirable/prudent in consideration of overall site objectives, e.g., activities associated with ALARA, resource, and/or efficiency optimization.

BACKLOG ITEM (Document #)	DEPARTMENT MANAGER	SYS NO.

DESCRIPTION

RESTART EVALUATION CRITERIA

[ ] 1. Actions needed for technical specifications operability.
[ ] 2. Adverse impact on safety system availability or performance.
[ ] 3. Potential for causing either entry into short-term tech. spec. action statement or frequent entry into tech. spec. action statement.
[ ] 4. NRC docketed commitments associated with the current outages.

[ ] 5. Adverse individual or aggregate impact on safe, reliable operations including potential for significantly challenging plant/personnel performance.
[ ] 6. High potential to jeopardize plant reliability.
[ ] 7. Prudent for working during two-unit outage.
[ ] 8. No restart criteria are applicable to this item.

DEPARTMENT MANAGER JUSTIFICATION

(Provide justification for review of item. Dept. Mgr. to determine the appropriate method to document. Considerations should primarily address restart criteria but can also include age; not critical system or critical issue; restraints (material, plant condition req'd to work); etc. Items on a single system may be justified together provided the basis for restart or non-restart is the same ; eg. instrument data packages on the same system.)

Dept. Mgr.: _____   Restart Recommendation   [ ] Yes   [ ] No

SYSTEM ENGINEER REVIEW

System Engineer Concurrence: _____   Restart   [ ] Yes   [ ] No

BACKLOG REVIEW COMMITTEE

Backlog Review Committee Concurrence: _____   Restart   [ ] Yes   [ ] No

MANAGEMENT RESTART REVIEW COMMITTEE (MRRC)

(MRRC to review for concurrence the "Yes" and "Grey" restart items identified by BRC)

MRRC Concurrence as Applicable: _____   Restart   [ ] Yes   [ ] No

BACKLOG ITEM	DEPARTMENT MANAGER	SYS NO.

DESCRIPTION

RESTART EVALUATION CRITERIA

[ ] 1. Actions needed for technical specifications operability.
[ ] 2. Adverse impact on safety system availability or performance.
[ ] 3. Potential for causing either entry into short-term tech. spec. action statement or frequent entry into tech. spec. action statement.
[ ] 4. NRC docketed commitments associated with the current outages.

[ ] 5. Adverse individual or aggregate impact on safe, reliable operations including potential for significantly challenging plant/personnel performance.
[ ] 6. High potential to jeopardize plant reliability.
[ ] 7. Prudent for working during two-unit outage.
[ ] 8. No restart criteria are applicable to this item.

DEPARTMENT MANAGER JUSTIFICATION

Dept. Mgr.: _____   Restart Recommendation   [ ] Yes   [ ] No

SYSTEM ENGINEER REVIEW

System Engineer Concurrence: _____   Restart   [ ] Yes   [ ] No

BACKLOG REVIEW COMMITTEE

Backlog Review Committee Concurrence: _____   Restart   [ ] Yes   [ ] No

MANAGEMENT RESTART REVIEW COMMITTEE (MRRC)

MRRC Concurrence as Applicable: _____   Restart   [ ] Yes   [ ] No

ADDITIONAL COMMENTS	
ITEM IDENTIFICATION	SYSTEM NO.

NAME / DATE:

ORGANIZATION:

NAME / DATE:

ORGANIZATION:

NAME / DATE:

ORGANIZATION:

NAME / DATE:

ORGANIZATION:

EVALUATION OF POST RESTART BACKLOGS

BACKLOG	RESPONSIBLE DEPARTMENT MANAGER

PART A	BACKLOG COMPOSITION EVALUATION

BACKLOG ITEMS

(Attach post restart backlog by system. Backlog may be further grouped or arranged in a way which facilitates evaluation of its composition.)

SIGNIFICANCE OF POST RESTART BACKLOG TO RESTART CRITERIA

(Attach evaluation/basis for why the post restart backlog, when compared to restart criteria, are acceptable as post restart. Backlog items may be grouped or adressed individually, as appropriate; categorized by age, system, significance; or otherwise packaged by the Dept. Mgr to best characterize composition.)

DEPARTMENT MANAGER APPROVAL	DATE
(This signature signifies that the department manager concurs with the restart determination for backlog items on part A of this form.)	

PART B	BASIS FOR BACKLOG RESTART NUMBER

POST RESTART "MAINTENANCE" PLAN

(Why/how can backlog be effectively managed post restart? Consider allocation of resources, incoming items post restart, etc.)

RELATIONSHIP TO INDUSTRY STANDARDS

(Is post restart backlog consistent of better than industry averages, INPO indicators, Brunswick Nuclear Plant startup levels, etc.?)

DEPARTMENT MANAGER APPROVAL	DATE
(This signature signifies that the department manager has determined by the evaluation in part B that the post restart backlog number supports restart and subsequent operation.)	

MRRC APPROVAL	DATE

EVALUATION OF POST RESTART BACKLOGS

BACKLOG	RESPONSIBLE DEPARTMENT MANAGER

PART A	BACKLOG COMPOSITION EVALUATION

BACKLOG ITEMS

SIGNIFICANCE OF POST RESTART BACKLOG TO RESTART CRITERIA

DEPARTMENT MANAGER APPROVAL	DATE

PART B	BASIS FOR BACKLOG RESTART NUMBER

POST RESTART "MAINTENANCE" PLAN

RELATIONSHIP TO INDUSTRY STANDARDS

DEPARTMENT MANAGER APPROVAL	DATE

MRRC APPROVAL	DATE

BACKLOG REVIEW COMMITTEE (BRC) CHARTER

The BRC is established by the SQN Vice President as a subcommittee of the Management Restart Review Committee (MRRC). The BRC consists of the following members:

H. R. Rogers, Lead
M. J. Lorek
I. Dibiase
C. R. Brimer

The ᴧRC is empowered to identify and evaluate all existing site backlogs as of May 1, 1993, for their individual and aggregate impact on restart and, with the recommendation of the backlog owner and affected system engineer(s), to make restart decisions on all backlog items. Specifically, the BRC will:

A. Establish the site backlog review process, defining the relative responsibilities of the site department managers (backlog owners), system engineers, MRRC, and Project Management and Controls (PM&C), and obtain MRRC approval.

B. Implement the process approved:

1.   Establish schedules for site organization evaluation and for participation in BRC meetings, maintaining overall status of BRC work, including organization, backlog, and system completion.

2.   Define and maintain records and documentation associated with the process.

3.   Provide written verbal communication of BRC results to affected organizations (department managers and PM&C and to the MRRC).

C. Use the collective experience and judgement of BRC members to evaluate the individual and collective impact of backlog items against the restart evaluation criteria to identity items that do and do not need to be completed prior to restart. The consideration of the causes of past transients and significant equipment, program, and personnel performance problems will provide a basis for the BRC's application of restart criteria to backlog items and issues. For individual or aggregate items that are not "clean cut" restart/postrestart or items for which significant schedule/resource impacts would be involved, the BRC will assess and document the level of equipment, personnel, or program performance risk that could be expected if the issue is not resolved prior to restart and present these issues to the MRRC for final resolution.

D. Backlogs present risk to effective plant operation because of the affect of individual or aggregate items and because of the demands that backlogs place on line organizations to manage them. Collateral to the BRC's primary responsibility, the BRC will document observations and formulate recommendations for improvement of how the site accumulates and manages backlogs for senior site management consideration. Recommendations may include improvements that could result from a combination of existing backlogs, improved backlog processes, clarification of ownership, or utilization of backlog indicators that flag significance as opposed to backlog number. Consideration will be given to how the present condition of backlogs was reached and measures to prevent this from occurring in the future.

E. Perform additional reviews/evaluations as assigned by the Site VP or MRRC.

The backlog review process for which the BRC is responsible is shown in the attached flowchart.

START →

D M
IDENTIFY BACKLOGS BY SYSTEM

D M
PREPARE RESTART FORM (ATT. 4–3), DESCRIPTION, RESTART PROPOSAL

D M / B R C / S E
PRESENT BACKLOG BY SYSTEM TO BRC AND RESP. SYSTEM ENGINEERS

B R C / S E
RECOMMEND RESTART (Y/N) AND DOCUMENT BASIS → (1)

NEED MORE INFO.
YES / NO

D M / B R C / S E
(1) → PRESENT TO MRRC

M R R C
REVIEW EVALUATION MAKING RESTART CALLS FOR "GREY" AREAS AND OTHER CHANGES DETERMINED NECESSARY

RESTART? Y/N
YES / NO

P M & C
RESTART SCHEDULE

P M & C
POST RESTART SCHEDULE

S E
SYSTEM NOTEBOOK
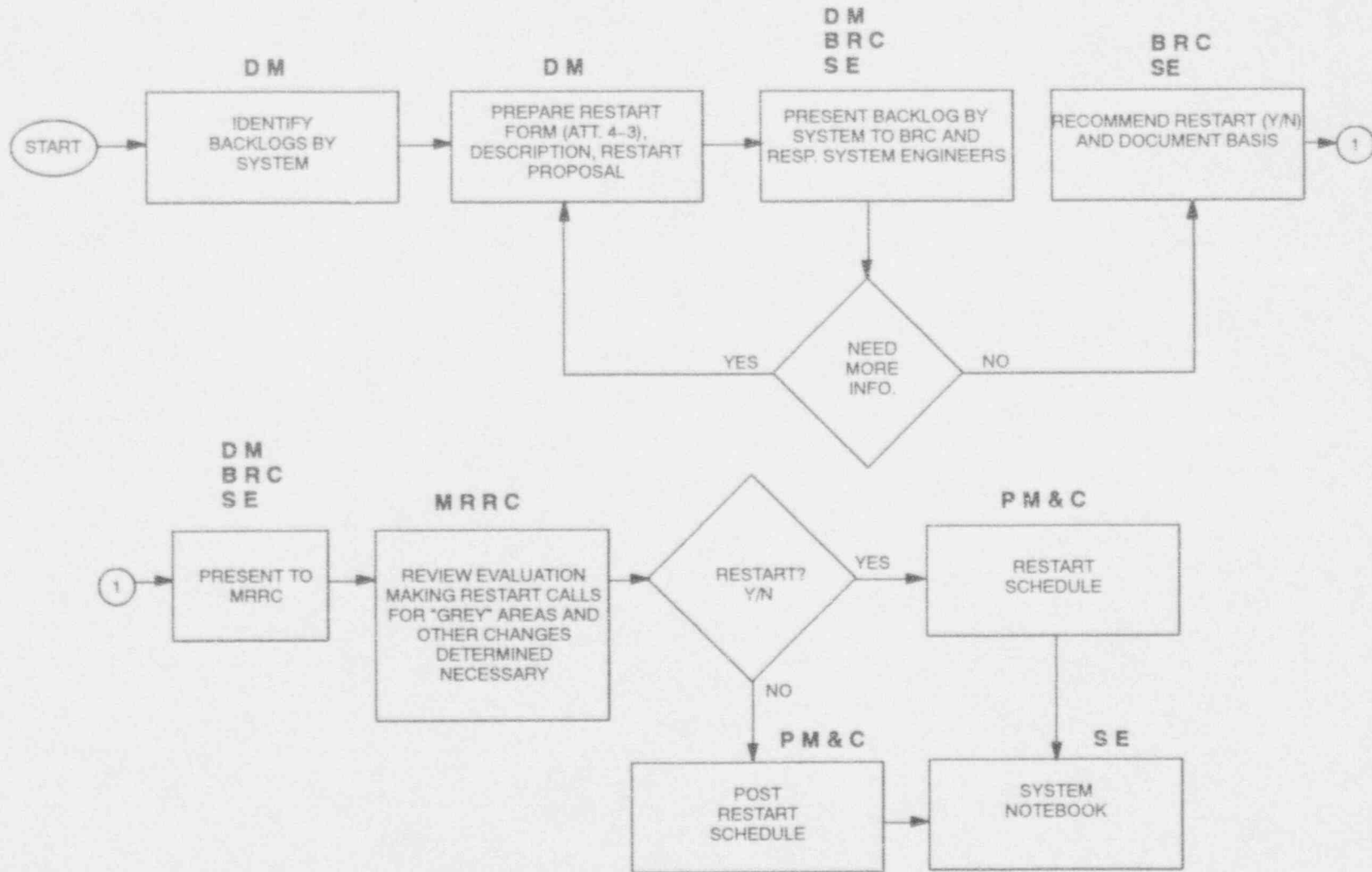
D M	DEPARTMENT MANAGER
S E	SYSTEM ENGINEER
B R C	BACKLOG REVIEW COMMITTEE
P M & C	PROJECT MANAGEMENT & CONTROLS
M R R C	MANAGEMENT RESTART REVIEW COMMITTEE

EMERGENT ITEM (Document #)	DEPARTMENT MANAGER	SYS NO.
DESCRIPTION		

RESTART EVALUATION CRITERIA

[ ] 1. Actions needed for technical specifications operability.
[ ] 2. Adverse impact on safety system availability or performance.
[ ] 3. Potential for causing either entry into short-term tech. spec. action statement or frequent entry into tech. spec. action statement.
[ ] 4. NRC docketed commitments associated with the current outages.

[ ] 5. Adverse individual or aggregate impact on safe, reliable operations including potential for significantly challenging plant/personnel performance.
[ ] 6. High potential to jeopardize plant reliability.
[ ] 7. Prudent for working during two-unit outage.
[ ] 8. No restart criteria are applicable to this item.

OPS REVIEW FOR MAINT. WO/WRs
CA MGT TEAM REVIEW FOR JCO/CAQs
PIC REVIEW FOR MILs

(Provide justification for review of item. Considerations should primarily address restart criteria but can also include not critical system or critical issue; restraints (material, plant condition req'd to work); etc. Maint. WO/WRs on a single system may be justified together provided the basis for restart or non-restart is the same.)

Reviewer Signature: _____   Restart Recommendation   [ ] Yes   [ ] No

SYSTEM ENGINEER REVIEW (NO's ONLY)

Sys Engr Concurrence: _____   Restart   [ ] Yes   [ ] No

MRRC REVIEW (JCO/CAQ AND MIL YES's ONLY)

MRRC Concurrence: _____   Restart   [ ] Yes   [ ] No

EMERGENT ITEM	DEPARTMENT MANAGER	SYS NO.

DESCRIPTION

RESTART EVALUATION CRITERIA

[ ] 1. Actions needed for technical specifications operability.

[ ] 2. Adverse impact on safety system availability or performance.

[ ] 3. Potential for causing either entry into short-term tech. spec. action statement or frequent entry into tech. spec. action statement.

[ ] 4. NRC docketed commitments associated with the current outages.

[ ] 5. Adverse individual or aggregate impact on safe, reliable operations including potential for significantly challenging plant/personnel performance.

[ ] 6. High potential to jeopardize plant reliability.

[ ] 7. Prudent for working during two-unit outage.

[ ] 8. No restart criteria are applicable to this item.

OPS REVIEW FOR MAINT. WO/WRs
CA MGT TEAM REVIEW FOR JCO/CAQs
PIC REVIEW FOR MILs

Reviewer Signature: _____   Restart Recommendation [ ] Yes   [ ] No

SYSTEM ENGINEER REVIEW (NO's ONLY)

Sys Engr Concurrence: _____   Restart [ ] Yes   [ ] No

MRRC REVIEW (JCO/CAQ AND MIL YES's ONLY)

MRRC Concurrence: _____   Restart [ ] Yes   [ ] No

D M	DEPARTMENT MANAGER
OPS	OPERATIONS
O M	OUTAGE MANAGERS
S E	SYSTEM ENGINEER
CAMRC	CORRECTIVE ACTION MANAGEMENT REVIEW COMMITTEE
MRRC	MANAGEMENT RESTART REVIEW COMMITTEE

OPS
CA MGT REVIEW TEAM

O M
RESTART SCHEDULE PER SSP-7.2

S E
SYSTEM NOTEBOOK

D M
ITEM OWNER SUBMIT FOR RESTART EVALUATION

D M
EMERGENT ITEM IDENTIFIED BY DEPT. MGR (CATEGORIES IN ATT. 1-B)

IS ITEM MAINT. WR/WO, JCO, OR CAQ Y/N — YES

START

NO

D M
DEPT. MGR. DETERMINE PRIORITY FOR WORK, IF RESTART BRING TO MRRC FOR REVIEW. IF POST RESTART, ENSURE ITEM IS INCLUDED IN POST RESTART BACKLOG EVAL AND IS SCHEDULED POST RESTART

OPS RESTART CALL FOR MAINT. WR/WOs

CA MGT. REVIEW COMMITTEE REVIEWS RESTART CALL FOR CAQs & JCOs — YES

MAINT. WR/WO Y/N — YES / NO

NO

CA MGT REVIEW COMMITTEE

D M
EVALUATOR PROVIDE W/RESTART RECOMMENDATION TO DEPT. MGR. FOR PRESENTATION TO MRRC *

S E
INPUT TO SYSTEM READINESS

MRRC *
MRRC * CONCURRENCE Y/N — YES / NO

D M
POST RESTART BACKLOG COMPOSITION, NUMBER EVALUATION (ATT. 4)

D M
INPUT TO DEPT. READINESS

POST RESTART

* This review can be delegated to the daily corrective action management review committee

APPENDIX 5

APPENDIX 5

SYSTEM READINESS ASSESSMENT

A. Preliminary System Readiness Review (PSRR) (Attachment 5-2)

1. The list of systems subject to System Readiness evaluation is provided in Attachment 5-1. Systems not included for System Readiness are, in general, non-process systems.

2. System engineer review to ensure that:

   - Open items on the system prior to 5/1/93 have been dispositioned as restart or nonrestart

   - Emergent items since 5/1/93 have been properly dispositioned as restart or nonrestart, or outstanding system engineer concerns have been identified

   - The collective impact of open, nonrestart items on system ability to support safe, reliable startup and operation over the next operating cycle has been evaluated

   - Any outstanding system engineer concerns regarding system ability to support safe, reliable startup and operation over the next operating cycle are identified

3. Backlog review committee (BRC) review, concurrence with system engineer review

4. Technical Support Manager approval of system engineer review and BRC review

5. Management Restart Review Committee review (via presentation) and approval

B. System Walkdowns

Walkdowns will be conducted on focus systems identified in Attachment 5-1 to assess overall system material condition, allow identification of system hardware deficiencies for evaluation against the restart criteria and provide for correction of those deficiencies which could either individually or in the aggregate prevent safe, reliable startup and operation over the next operating cycle. Focus systems include key safety significant and plant reliability significant systems. Walkdowns will be conducted under the direction of the Technical Support Manager.

Following system restoration and return to service, walkdowns will be conducted at system normal operating temperature and pressure (NOTP) to identify leaks for those systems designated by the Technical Support Manager. Consideration will be given to the level of work conducted on the system during the forced outage, significance of potential leakage, system accessibility and ability to identify leakage through other mechanisms, e.g., inventory balances.

C. Final System Readiness Review (Attachment 5-3)

   1.   System engineer review and affirmation that:

      -   PSRR complete with any system engineers' concerns resolved

      -   System engineer material condition walkdowns on focus systems were complete

      -   Emergent items since completion of the PSRR have been properly dispositioned as restart or nonrestart

      -   Restart items for the system have been completed with minor identified exceptions

      -   Reviews of information related to recurring equipment/system problems (adverse trends) were completed and a plan to address is in place; compensatory measures have been established if appropriate

      -   Priorities for continued improvement of system performance and system material condition have been established

   2.   System engineer's supervisor review and approval

   3.   Technical Support Manager review and approval

SYSTEMS LIST

- 001 Main Steam System
- 002 Condensate System
- 003 Main and Auxiliary Feedwater System
- 005 Extraction Steam System
- 006 Heater Drains and Vents System
- 007 Turbine Extraction Traps and Drains System
- 012 Auxiliary Boiler System
- 013 Fire Protection (Other than High-Pressure Fire Protection and CO_2 Fire Protection)
- 014 Condensate Demineralizer System
- 015 Steam Generator Blowdown System
- 018 Fuel Oil System
- 020 Central Lubricating Oil System
- 024 Raw Cooling Water System
  025 Raw Service Water System
- 026 High Pressure Fire Protection System
- 027 Condenser Circulating Water System
  029 Potable (Treated) Water Distribution System
- 030 Ventilating System
  031 Air-Conditioning (Cooling - Heating) System
- 032 Control Air System
- 033 Service Air System
  034 Vacuum Priming System
- 035 Generator Hydrogen Cooling Systems
  036 Feedwater Secondary Treatment System
- 037 Gland Seal Water System
  039 CO_2 Storage, Fire Protection, and Purging System
  040 Station Drainage System
  041 Layup Water Treatment System
  042 Chemical Cleaning System
- 043 Sampling and Water Quality System
- 046 Feedwater Control System
- 047 Turbogenerator Control System
  050 Hypochlorite System
  052 System Test Facility (Seismic Instrumentation)
- 054 Injection Water System
- 055 Annunciator & Sequential Events Recording System
  056 Temperature Monitoring System
- 057 Associated Electrical Systems (Generator)
- 058 Generator Bus Cooling System
  059 Demineralizer Water & Cask Decontamination System
- 061 Ice Condenser System
- 062 Chemical and Volume Control System
- 063 Safety Injection System

SYSTEMS LIST

- 065   Emergency Gas Treatment System
- 067   Essential Raw Cooling Water System
- 068   Reactor Coolant System
- 070   Component Cooling System
- 072   Containment Spray System
- 074   Residual Heat Removal System
-   077   Waste Disposal System
-   078   Spent Fuel Pit Cooling System (Fuel Holding and Cranes)
-   079   Fuel Handling and Storage System
- 081   Primary Makeup Water System
- 082   Standby Diesel Generator System
- 083   Hydrogen Recombination System
-   084   Flood Mode Boration System
- 085   Control Rod Drive System
- 088   Containment Isolation System
- 090   Radiation Monitoring System
- 092   Neutron Monitoring System
- 094   Incore Monitoring System
- 099   Reactor Protection System
-   200   Status Monitor System
- 201   480-V Electrical Boards and Motor Control Center
- 202   6900-V Electrical Boards (Logic Panels)
- 234   Heat Tracing System
- 241   Switchyard and Transformers (Including 22.5, 161, & 500-kV)
-   244   Communications System
-   245   Security System
-   247   Lighting System
- 250   AC/DC Low Voltage Power System
-   263   Condenser Tube Cleaning System
- 268   Permanent Hydrogen Mitigation System
-   301   P-250 Computer System
-   302   Penetrations and Sleeves (Mechanical and Electrical)
-   305   Sewage System
- 311   Control Building Heating, Ventilating, Air-Conditioning (Instruments and Valves) (was 31A)
- 313   Auxiliary Building Heating, Ventilating, and Air-Conditioning (Instruments and Valves) (was 31C)
-   317   Miscellaneous
-   410   Building Doors and Hatches (Includes Architectural Doors)
-   928   Makeup Water Treatment Plant Electrical Equipment
-   959   Demineralizer Water Storage & Distribution System for Makeup Water Treatment Plant

- Focus Systems - System Engineer Walkdowns as a Part of System Readiness

SYSTEM NO / NAME	SYSTEM ENGR.

SYSTEM ENGR. REVIEW SUMMARY (The System Engr. shall initial each item below to indicate that required reviews have been completed)

_____ Open items identified for this system prior to 5/1/93 have been properly dispositioned.

_____ Emergent Items since 5/1/93 have been properly dispositioned. Attach any System Engineer concerns for emergent items recommending disposition.

_____ The collective impact of open non-restart backlog items identified to date on this system has been evaluated. Attach any system engineers concerns regarding backlog reviews on the collective impact of open non-restart items on the system

REMARKS

(The System Engineer can provide any additional relevant information deemed necessary to provide a complete summary of system readiness.)

System Engineer Signature _____ Date _____

BACKLOG REVIEW COMMITTEE (BRC) EVALUATION

(The BRC will review the System Engineer PSRR documented above. Changes recommended by BRC will be documented on applicable BRC forms, concurred with by the System Engineer via his initials/date, and attached to this form.)

BRC Review & Concurrence Signature _____ Date _____

TECHNICAL SUPPORT MANAGEMENT REVIEW AND APPROVAL

Technical Support Manager Signature _____ Date _____

MANAGEMENT RESTART REVIEW COMMITTEE (MRRC)

(The Technical Support Manager will present the results of the Preliminary System Readiness Review to MRRC. MRRC signature will signify concurrence with system readiness including restart/non-restart changes made by the system engineer as documented above or by BRC with system engineer concurrence as documented above. Changes made by MRRC during the system readiness presentation shall be documented on or attached to this form.)

MRRC Approval Signature _____ Date _____

DISPOSITION OF FORMS

Attachment 1 with attachments (original) – System notebook

Changes to Restart Decisions or New Restart Items as a result of the Preliminary System Readiness Review:

- New Restart or Changes from Non-Restart to Restart – Copies to restart schedule process per SSP-7.2 and to item owner.

- Changes from Restart to Non-Restart – Copies to Dept. Mgr. to be worked post restart and for inclusion in his/her Evaluation of Post Restart Backlogs.

SYSTEM NO / NAME	SYSTEM ENGR.

SYSTEM ENGR. REVIEW SUMMARY (The System Engr. shall initial each item below to indicate that required reviews have been completed)

_____ Open items identified for this system prior to 5/1/93 have been properly dispositioned.

_____ Emergent Items since 5/1/93 have been properly dispositioned. Attach any System Engineer concerns for emergent items recommending disposition.

_____ The collective impact of open non-restart backlog items identified to date on this system has been evaluated. Attach any system engineers concerns regarding backlog reviews on the collective impact of open non-restart items on the system

REMARKS

System Engineer Signature _____ Date _____

BACKLOG REVIEW COMMITTEE (BRC) EVALUATION

BRC Review & Concurrence Signature _____ Date _____

TECHNICAL SUPPORT MANAGEMENT REVIEW AND APPROVAL

Technical Support Manager Signature _____ Date _____

MANAGEMENT RESTART REVIEW COMMITTEE (MRRC)

MRRC Approval Signature _____ Date _____

DISPOSITION OF FORMS

Attachment 1 with attachments (original) – System notebook

Changes to Restart Decisions or New Restart Items as a result of the Preliminary System Readiness Review:

- New Restart or Changes from Non-Restart to Restart - Copies to restart schedule process per SSP-7.2 and to item owner.

- Changes from Restart to Non-Restart - Copies to Dept. Mgr. to be worked post restart and for inclusion in his/her Evaluation of Post Restart Backlogs.

(PROCESS FOR ATTACHMENT 5-2)


```
                          S E                    S E                        S E
                    ┌──────────┐          ┌──────────────────┐      ┌──────────────┐           S E
                    │ RESTART  │          │ EVALUATE FOR     │      │ BRC          │         ┌─────────┐
  ┌───────┐         │ ITEMS ON │   YES    │ SYSTEM IMPACT;   │      │ BRC          │         │ RESTART │
  │ START │────────▶│ SYSTEM   │─────────▶│ DOCUMENT         │─────▶│ PRESENTATION,│────────▶│ CALL    │── NO ──▶( 1 )
  └───────┘         │ COMPLETE │          │ CONCERNS & ATTACH│      │ RESOLUTION OF│         │ CHANGES │
                    │ Y/N      │          │ TO ATT. 2:       │      │ SYSTEM ENG.  │         │ (BACKLOG│
                    └──────────┘          │ - BRC 5/1/93 NON-│      │ CONCERNS     │         │ OR      │
                         │                │   RESTART        │      └──────────────┘         │ EMERGENT)│
                        NO                │ - EMERGENT NON-  │                               │ FROM BRC│
                         │                │   RESTART        │                               │ MTG. Y/N│
                         ▼                └──────────────────┘                               └─────────┘
              S E                                                                                 │
         ┌──────────────┐                                                                        YES
         │ PUNCHLIST,   │                                                                         │
         │ ATTACH TO    │                                                                         ▼
         │ ATT. 2       │                                                                 B R C
         └──────────────┘                                                          ┌──────────────┐
                                                                                   │ MODIFY BRC,  │
                                                                                   │ EMERGENT ITEM│
                                                                                   │ DOC; ATTACH  │
                                                                                   │ TO ATT. 2    │
                                                                                   └──────────────┘
```
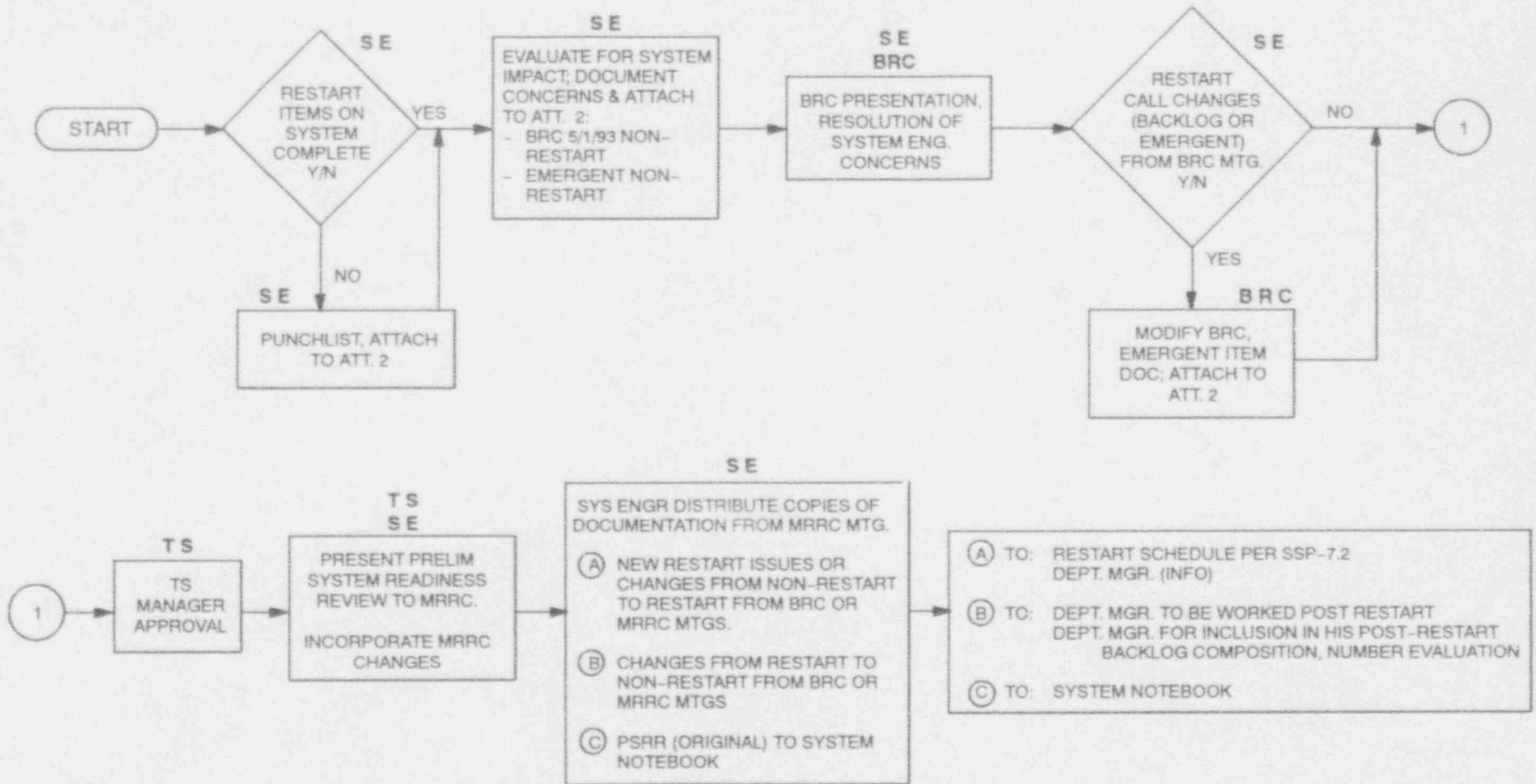
- **SE** — SYSTEM ENGINEER
- **BRC** — BACKLOG REVIEW COMMITTEE
- **TS** — TECHNICAL SUPPORT
- **MRRC** — MANAGEMENT RESTART REVIEW COMMITTEE

SYSTEM NO / NAME	SYSTEM ENGR.

SYSTEM ENGR. REVIEW SUMMARY (The System Engr. shall initial each item below to affirm that he/she has completed the indicated reviews and that they support restart)

_____ Preliminary System Readiness Review (PSRR) complete with ... s properly dispositioned and any System Engineer concerns resolved.

_____ Emergent items since PSRR have been properly dispositioned.

_____ System Engr. walkdowns on focus systems (Att. 4) and others as determined by the Technical Support Manager are complete.

_____ Reviews of information related to recurring equipment/system problems (trends) completed and a plan developed to address.

_____ Priorities for continued improvement of system performance and system material condition established.

REMARKS

(The System Engineer can provide any additional relevant information deemed necessary to provide a complete summary of system readiness.)

AFFIRMATION

(The System Engineer shall affirm by his/her signature below that, based on his/her evaluation of the areas listed in the SYSTEM ENGINEER REVIEW SUMMARY above and to the best of his/her knowledge/judgement, the system is in a condition of readiness to support safe and reliable restart and operation.)

System Engineer Signature _____ Date _____

TECHNICAL SUPPORT MANAGEMENT REVIEW AND APPROVAL

Supervisor Signature _____ Date _____

Technical Support Manager Signature _____ Date _____

SYSTEM NO / NAME	SYSTEM ENGR.

SYSTEM ENGR. REVIEW SUMMARY (The System Engr. shall initial each item below to affirm that he/she has completed the indicated reviews and that they support restart)

_____ Preliminary System Readiness Review (PSRR) complete with items properly dispositioned and any System Engineer concerns resolved.

_____ Emergent items since PSRR have been properly dispositioned.

_____ System Engr. walkdowns on focus systems (Att. 4) and others as determined by the Technical Support Manager are complete.

_____ Reviews of information related to recurring equipment/system problems (trends) completed and a plan developed to address.

_____ Priorities for continued improvement of system performance and system material condition established.

REMARKS

AFFIRMATION

System Engineer Signature _____ Date _____

TECHNICAL SUPPORT MANAGEMENT REVIEW AND APPROVAL

Supervisor Signature _____ Date _____

Technical Support Manager Signature _____ Date _____

APPENDIX 6

APPENDIX 6

DEPARTMENT RESTART READINESS ASSESSMENT

I. Objective

Departments will conduct an assessment of actions needed to support department readiness for restart, addressing the areas indicated in Attachment 6-1. Readiness will address both hardware and software considerations, for restart and beyond. The overall objective of this effort is not just to ready th? ˉ.ant and site for a moment in time but to lay the foundation to carry SQN forward with e .tive operations beyond restart.

II. Applicability

Site Vice President direct reports and their direct reports as indicated in Attachment 6-2. Full department readiness evaluations are required for those departments whose work and actions have the highest potential for impact on plant safety, reliability, and operations. Limited evaluations are required for other departments as indicated.

III. Department Restart Readiness Affirmation and Concurrence

Document department manager affirmation of restart readiness and Site Vice President/Management Restart Review Committee review and concurrence with the Attachment 6-3 form.

DEPARTMENT RESTART READINESS ASSESSMENT

Applicability

- Site Vice President direct reports and their direct reports

Department Manager Readiness Assessment and Affirmation

- Organization responsibilities and functions defined
- Programs and processes sufficient to support restart
- Restart items verified complete
- Personnel/management evaluation complete and short-term actions complete
- Necessary department training complete
- Standdowns and communication plan complete; effectiveness assessed
- Postrestart backlog composition defined and understood, workoff plan established (including workoff curves), performance/health indicators established, and periodic monitoring/assessment established
- Postrestart improvement areas defined in detail and added to Sequoyah Improvement Plan
- Assessment and performance monitoring processes in place

Department Manager Review of Above Items With Site Vice President

- Feedback, expectations, and coaching
- Status and process assessed
- Restart readiness affirmed
- Postrestart plan defined and controlled

Department Manager Documentation, Affirmation of Final Department Readiness

Management Restart Review Committee Review of Department Readiness Roll-up

	DEPARTMENT READINESS	SITE VP MEETINGS	MRRC MEETING	ORG. RESP. & FUNCTIONS DEFINED	PROGRAMS AND PROCESSES READY	RESTART ITEMS VERIFIED COMPLETE	PERSONNEL AND MANAGMENT EVALUATION COMPLETE AND SHORT-TERM ACTIONS COMPLETE	NECESSARY DEPARTMENT TRAINING COMPLETE	MAY, JUNE STANDDOWNS COMPLETE, DOCUMENTED	POST RESTART BACKLOG EVALUATION, PLANS COMPLETE	POST RESTART IMPROVEMENT AREAS DEFINED, ADDED TO SIP	ASSESSMENT AND PERFORMANCE MONITORING PROCESSES IN PLACE
R. J. Beecken		X										
J.S. Baumstark	F	X	X	X	X	X	X	X	X	X	X	X
L. S. Bryant	F	X	X	X	X	X	X	X	X	X	X	X
J. K. Gates	F	X	X	X	X	X	X	X	X	X	X	X
C. E. Kent	F	X	X	X	X	X	X	X	X	X	X	X
D. L. Lundy	F	X	X	X	X	X	X	X	X	X	X	X
M. D. Shepherd	L		X		X	X			X			
J. N. Ward		X										
R. V. Drake	F	X	X	X	X	X	X	X	X	X	X	X
R. R. Rausch	F	X	X	X	X	X	X	X	X	X	X	X
M. A. Scarzinski	F	X	X	X	X	X	X	X	X	X	X	X
M. J. Burzynski	F	X	X	X	X	X	X	X	X	X	X	X
L. J. Wheeler	F	X	X	X	X	X	X	X	X	X	X	X
R. F. Driscoll	L		X		X	X			X	X		
M. E. Miller	R				X	X			X			
M. E. Reinders	R				X	X			X			
L. Poage	R				X	X			X			
P. R. Wallace	L		X		X	X			X	X		
N. S. Catron	R				X	X						
M. J. Doyle	R				X	X						
A. J. LaMontagna	R				X	X			X	X		
J. R. Setliffe	R				X	X			X			
R. W. Martin												
J. Migyanka	L		X		^	X			X			
Licensing	L		X		X	X			X	X		

F – FULL
L – LIMITED
R – ROLLUP W/DEPT. MGR.
X – REQUIRED
"BLANK" – NOT REQUIRED

DEPARTMENT	DEPARTMENT MANAGER

DEPARTMENT MANAGER READINESS REVIEW AND AFFIRMATION (The Dept. Mgr. shall initial each item below to affirm department readiness in each area indicated)

_____ Organization responsibilities and functions defined

_____ Programs and processes sufficient to support restart

_____ Restart items verified complete

_____ Personnel/management evaluation complete and short-term actions complete

_____ Necessary department training complete

_____ Standdowns and communication plan complete; effectiveness assessed

_____ Post restart backlog composition defined and understood, workoff plan established (including workoff curves), performance/health indicators established, and periodic monitoring/assessment established

_____ Post restart improvement areas defined in detail and added to Sequoyah Improvement Plan

_____ Assessment and performance monitoring processes in place

REMARKS

(Dept. Mgr. can provide any additional relevant information deemed necessary to provide a complete summary of department readiness)

Department Manager Affirmation _____ Date _____

SITE VICE PRESIDENT REVIEW OF DEPARTMENT READINESS (Site VP shall initial each item below to indicate concurrence with Department Manager assessment and affirmation of readiness)

_____ Feedback, expectations, and coaching complete

_____ Status and process assessed

_____ Restart readiness affirmed

_____ Post restart plan defined and controlled

REMARKS

(Site VP can provide any additional relevant information deemed necessary to summarize his review and concurrence with Department Manager readiness

Site Vice President Concurrence _____ Date _____

MANAGMENT RESTART REVIEW COMMITTEE (MRRC) DEPT. READINESS REVIEW

MRRC Concurrence _____ Date _____

DEPARTMENT	DEPARTMENT MANAGER

DEPARTMENT MANAGER READINESS REVIEW AND AFFIRMATION (The Dept. Mgr. shall initial each item below to affirm department readiness in each area indicated)

_____ Organization responsibilities and functions defined

_____ Programs and processes sufficient to support restart

_____ Restart items verified complete

_____ Personnel/management evaluation complete and short-term actions complete

_____ Necessary department training complete

_____ Standdowns and communication plan complete; effectiveness assessed

_____ Post restart backlog composition defined and understood, workoff plan established (including workoff curves), performance/health indicators established, and periodic monitoring/assessment established

_____ Post restart improvement areas defined in detail and added to Sequoyah Improvement Plan

_____ Assessment and performance monitoring processes in place

REMARKS

Department Manager Affirmation _____ Date _____

SITE VICE PRESIDENT REVIEW OF DEPARTMENT READINESS (Site VP shall initial each item below to indicate concurrence with Department Manager assessment and affirmation of readiness)

_____ Feedback, expectations, and coaching complete

_____ Status and process assessed

_____ Restart readiness affirmed

_____ Post restart plan defined and controlled

REMARKS

Site Vice President Concurrence _____ Date _____

MANAGMENT RESTART REVIEW COMMITTEE (MRRC) DEPT. READINESS REVIEW

MRRC Concurrence _____ Date _____

DEPARTMENT READINESS SITE VP AND MRRC MEETING SCHEDULES

	INITIAL SITE VP MEETING	FINAL SITE VP MEETING	MRRC MEETING
FULL DEPT. READINESS ASSESSMENT			
J.S. Baumstark	6/4/93		
L. S. Bryant	5/12/93–C		
J. K. Gates	6/2/93		
C. E. Kent	6/1/93		
D. L. Lundy	5/17/93–C		
R. V. Drake	5/17/93–C		
R. R. Rausch	5/18/93–C		
M. A. Scarzinski	5/12/93–C		
M. J. Burzynski	5/17/93–C		
L. J. Wheeler	6/1/93		
LIMITED DEPT. READINESS ASSESSMENT			
M. D. Shepherd	N/A	N/A	
D. A. Smith	N/A	N/A	
P. R. Wallace	N/A	N/A	
R. F. Driscoll	N/A	N/A	
J. Migyanka	N/A	N/A	
Licensing	N/A	N/A	

C – COMLETE

	ORG. RESP. & FUNCTIONS DEFINED	PROGRAMS AND PROCESSES READY	RESTART ITEMS VERIFIED COMPLETE	PERSONNEL AND MANAGMENT EVALUATION COMPLETE AND SHORT-TERM ACTIONS COMPLETE	NECESSARY DEPARTMENT TRAINING COMPLETE	MAY, JUNE STANDDOWNS COMPLETE, DOCUMENTED	POST RESTART BACKLOG EVALUATION, PLANS COMPLETE	POST RESTART IMPROVEMENT AREAS DEFINED, ADDED TO SIP	ASSESSMENT AND PERFORMANCE MONITORING PROCESSES IN PLACE
FULL DEPT. READINESS ASSESSMENT									
J.S. Baurnstark									
L. S. Bryant									
J. K. Gates									
C. E. Kent									
D. L. Lundy									
R. V. Drake									
R. R. Rausch									
M. A. Scarzinski									
M. J. Burzynski									
L. J. Wheeler									

	ORG. RESP. & FUNCTIONS DEFINED	PROGRAMS AND PROCESSES READY	RESTART ITEMS VERIFIED COMPLETE	PERSONNEL AND MANAGMENT EVALUATION COMPLETE AND SHORT-TERM ACTIONS COMPLETE	NECESSARY DEPARTMENT TRAINING COMPLETE	MAY, JUNE STANDDOWNS COMPLETE, DOCUMENTED	POST RESTART BACKLOG EVALUATION, PLANS COMPLETE	POST RESTART IMPROVEMENT AREAS DEFINED, ADDED TO SIP	ASSESSMENT AND PERFORMANCE MONITORING PROCESSES IN PLACE
LIMITED DEPT. READINESS ASSESSMENT									
M. D. Shepherd	N/A			N/A	N/A		N/A	N/A	N/A
D. A. Smith	N/A			N/A	N/A	N/A	N/A	N/A	N/A
P. R. Wallace	N/A			N/A	N/A			N/A	N/A
R. F. Driscoll	N/A			N/A	N/A			N/A	N/A
J. Migyanka	N/A			N/A	N/A		N/A	N/A	N/A
Licensing	N/A			N/A	N/A			N/A	N/A

APPENDIX 7

APPENDIX 7

SITE READINESS ASSESSMENT

MRRC Chairman, PORC Site Readiness Assessment

- Organization and Personnel Readiness
- Systems Readiness
- Department Readiness
- Outage Closure
- Restart List Closure
- Postrestart Plans Established
- Assessments Complete
- Other

MRRC Chairman, PORC Review and Approval Prior to the Following Activities

- Initial Mode Change (Mode 5 to Mode 4), Attachment 7-1
- Unit Criticality (Mode 2), Attachment 7-1

ROLL UP AND REVIEW OF SITE READINESS ASSESSMENTS
(Principal Areas to be Reviewed)

* Organization and Personnel

* Systems Readiness

* Department Readiness

* Outage Closure

* Restart List Closure

* Post Restart Plans

* Assessments

* Other (Specify)

REVIEW AND APPROVAL FOR INITIAL MODE CHANGE (MODE 5 TO MODE 4)

MRRC REMARKS

(MRRC can provide any additional relevant information deemed necessary to complete this site readiness review for this mode change.)

PORC REMARKS

(PORC can provide any additional relevant information deemed necessary to complete this site readiness review for this mode change.)

(MRRC Chairman and PORC by their signature will affirm that the above and any other relevant areas have been reviewed and that each supports entry into mode 4 from mode 5.)

MRRC Chairman Approval _____ Date _____

PORC Approval _____ Date _____

REVIEW AND APPROVAL FOR UNIT CRITICALITY (MODE 2)

MRRC REMARKS

(MRRC can provide any additional relevant information deemed necessary to complete this site readiness review for this mode change.)

PORC REMARKS

(PORC can provide any additional relevant information deemed necessary to complete this site readiness review for this mode change.)

(MRRC Chairman and PORC by their signature will affirm that the above and any other relevant areas have been reviewed and the Full Site Readiness Assessment completed such that each supports entry into mode 2.)

MRRC Chairman Approval _____ Date _____

PORC Approval _____ Date _____

ROLL UP AND REVIEW OF SITE READINESS ASSESSMENTS
(Principal Areas to be Reviewed)

* Organization and Personnel

* Systems Readiness

* Department Readiness

* Outage Closure

* Restart List Closure

* Post Restart Plans

* Assessments

* Other (Specify)

REVIEW AND APPROVAL FOR INITIAL MODE CHANGE (MODE 5 TO MODE 4)

MRRC REMARKS

PORC REMARKS

MRRC Chairman Approval _____ Date _____

PORC Approval _____ Date _____

REVIEW AND APPROVAL FOR UNIT CRITICALITY (MODE 2)

MRRC REMARKS

PORC REMARKS   **NOT APPLICABLE**

MRRC Chairman Approval _____ Date _____

PORC Approval _____ Date _____

ROLL UP AND REVIEW OF SITE READINESS ASSESSMENTS
(Principal Areas to be Reviewed)

* Organization and Personnel

* Systems Readiness

* Department Readiness

* Outage Closure

* Restart List Closure

* Post Restart Plans

* Assessments

* Other (Specify)

REVIEW AND APPROVAL FOR INITIAL MODE CHANGE (MODE 5 TO MODE 4)

MRRC REMARKS

PORC REMARKS

NOT APPLICABLE

MRRC Chairman Approval _____ Date _____

PORC Approval _____ Date _____

REVIEW AND APPROVAL FOR UNIT CRITICALITY (MODE 2)

MRRC REMARKS

PORC REMARKS

MRRC Chairman Approval _____ Date _____

PORC Approval _____ Date _____

APPENDIX 8

APPENDIX 8

SITE LICENSING REGULATORY CLOSURE AFFIRMATION

****

Restart Readiness Affirmation Will Include:

* Affirmation that objective evidence exists verifying completion of all restart actions required by TVA and NRC letters associated with the subject outage for the respective unit.

Site Licensing Manager

APPENDIX 9

APPENDIX 9

DEPARTMENT PROGRAM OWNER REVIEWS

(See Department Head)

APPENDIX 10

APPENDIX 10

RESTART ITEM CLOSURE

I. Objective

This appendix provides the process for documenting completion of Restart Items. This process provides requirements for closure documentation, assignment of responsibilities and appropriate levels of management review to ensure proper closure. (see Reference 37)

II. Applicability

This process applies to closure of all Restart Items listed on the Restart Evaluations for SQN listing maintained by Project Management and Controls (Reference 14). This process is in addition to normal site activity closeout processes, e.g., WR/WO completion, corrective action document completion etc.

III. Implementation

Closure for each restart item will be accomplished through use of a Restart Item Closure Form as illustrated in Attachment 10-1. The Attachment 10-1 form is an example; closure of restart items using department established recreations/renditions of this form is acceptable provided the department rendition provides for the same information and signatures.

As detailed in Attachment 10-2, use of the form will provide for brief documentation of the restart item, what actions were taken to resolve/address the item, reference to supporting documentation, signature of the evaluator of completion and review signature of the Department manager. The department manager will be responsible for maintaining the supporting documentation and ensuring the accuracy of the closure documentation. Upon completion of the form, the original should be maintained in the department operational readiness notebook with copies forwarded to the SQN Restart Manager (O&PS-4C) and Project Management & Controls (O&PS-4G).

RESTART ITEM CLOSURE FORM

RESTART ITEM #: _____

ITEM OWNER: _____

I.   PROBLEM

II.   ACTIONS TAKEN:

III.   REFERENCE DOCUMENT (DCN, WP, WR, ETC.)

_____ / _____
Evaluator   Date

_____ / _____
Department Mgr   Date

ITEM 1:

RESTART ITEM #: List restart item number from the Restart Evaluations for SQN listing maintained by SQN Project Management & Controls. Ensure accurate unit identification.

ITEM 2:

ITEM OWNER: The name of the restart item owner as listed on the Restart Evaluation list.

ITEM 3:

PROBLEM: Provide a brief statement of the restart item problem/issue. This may be nothing more than the restart item description if sufficient clarity is provided, or may require further explanation of the problem/issue. If there is any question regarding the full scope of the restart item, contact Project Management & Controls to review supporting restart item documentation. If further definition is still required, MRRC should be consulted.

ITEM 4:

ACTIONS TAKEN: Provide a brief description of what actions were taken to address/resolve the restart item/issue. With the exception for restart WRs described below, Reference to implementing document numbers alone is not acceptable. Description of actions taken will ensure that the full scope of the restart item is being fully addressed and will provide basis for department manager approval.

A restart item which is fully resolved through a restart coded WR may be closed by reference to the restart WR number. It is the responsibility of the department manager to ensure that in fact the full scope is being addressed by the WR and that the WR is coded as restart under the outage management controls before signing closure of a restart item in this manner.

ITEM 5:

REFERENCE DOCUMENT: List the document or documents that implemented the actions taken to address/resolve the item, e.g., WR/WOs, PERs, etc. This process does not create a stand-alone closure document, but should provide the basis for the full closure "paper trail".

ITEM 6:

EVALUATOR: Signature of the person completing the evaluation of closure/completion of the restart item. This person is responsible for submitting restart item closure to the department manager approval following the guidance provided in this Appendix.

ITEM 7:

DEPARTMENT MGR: The department manager shall sign affirming that the restart item has been fully addressed/resolved by the above indicated actions. The department manager is responsible and accountable under signature for the accuracy and appropriateness of the closure. The department manager signature cannot be delegated, except to a higher management level.

APPENDIX 11

APPENDIX 11

STARTUP AND POWER ASCENSION PLAN

I. OBJECTIVE

This appendix describes the management plan for ensuring the safe, controlled, and deliberate return to service of Sequoyah Nuclear Plant (SQN). This plan defines and describes assessment hold points where reviews, affirmations, and approvals will be conducted. This plan also describes additional oversight and checks during the startup and power ascension to review plant equipment and personnel performance. This plan integrates portions of other Restart Plan processes, outage closeout processes, and site startup processes and procedures with additional requirements set forth by this appendix.

II. ASSESSMENT HOLD POINTS

This plan establishes the following assessment hold points at which plant conditions are maintained until a prescribed assessment of site readiness for further progression, as defined by this appendix, is completed.

- Mode 5 prior to Mode 4 entry
- Mode 3 prior to Administrative Mode 2 entry (prior to pulling control rods to approach and achieve criticality)
- 30 percent reactor power +/- 10 percent
- 65 percent reactor power +/- 10 percent
- 90 percent reactor power +/- 5 percent
- 100 percent reactor power (assessment to approve continued operation)

Corresponding holdpoints requiring Plant Manager approval for further increase in plant mode or power level will be established in the applicable general operating instructions. The basis for Plant Manager approval is addressed in this appendix. These holdpoint and associated operational allowances, e.g., +/- 10%, shall not preclude licensed responsibilities to take the unit, if determined necessary, to a reduced power level or operating mode to ensure safe and stable unit operation.

III. STARTUP AND POWER ASCENSION REVIEW AND APPROVAL MATRIX

The Startup and Power Ascension Review and Approval Matrix (attachment 11-1) identifies the review and assessment areas and the types of reviews and approvals for each assessment hold point. Supporting detail for the matrix requirements and associated assessment hold point checklist is contained in Sections IV. - IX.

Approval checklists (Attachment 11-2) and supporting approval checklist continuation forms (Attachment 11-3) will be completed for the associated assessment hold points. The assessment hold point, as defined in Section II above will be entered at the top of Attachment 11-2 and 11-3 forms. The checklists will be completed for the associated assessment hold points and reviewed by the Plant Manager before providing his approval in the General Operating procedure for unit progression beyond that hold point defined condition.

IV. ASSESSMENT HOLD POINT NO.1 - MODE 5 PRIOR TO ENTRY INTO MODE 4

This section describes the reviews, affirmations, and approvals that will be conducted before the initial entry into Mode 4 and subsequent plant heatup to the next holdpoint in Mode 3. This section also provides the basis for completing the Mode 5 to Mode 4 approval checklist. Associated comments/remarks, outstanding actions, and/or identified issues/concerns should be listed on the approval checklist continuation form.

IV.A.PLANT EQUIPMENT

OUTAGE PHYSICAL WORK COMPLETION

A.1. Outage Scope - The outage scheduled activities required for Mode 4 or Mode 3 operation will be verified complete by the Outage Planning Manager. Any outstanding activities will be listed on the Approval Checklist Continuation Form. A summary of outage activities to be conducted in Mode 4 and Mode 3 will be attached to the Mode 5 to Mode 4 approval checklist continuation form. When outage activities to support Mode 4 entry are verified complete, the Outage Planning Manager shall affirm completion by signing the approval checklist.

A.2. New WRs - SROs will review new WRs for impact on Mode 4 or Mode 3 operation. An SRO will affirm acceptability of any new unworked WRs on Mode 4 entry by signing the approval checklist.

SYSTEM READINESS

A.3. System Readiness Affirmation - The Final System Readiness Review Forms from Appendix 5 of the Restart Plan will be completed for systems required for Mode 4 operation. The Technical Support Manager will have reviewed the completion status of outstanding system related restart activities at the time of completion of the Final System Readiness Review Forms and will list any outstanding restart activities on the Approval Checklist Continuation Form. The list and status of any incomplete Final System Readiness Review

Forms (for any operating condition or mode) will be listed on the Approval Checklist Continuation Form. When the status of outstanding items is determined acceptable, the Technical Support Manager shall affirm readiness of th systems required for Mode 4 entry by signing the Mode 5 to Mode 4 approval checklist.

A.4. System Performance - Results of any walkdowns conducted to identify leaks and results of any activities to assess/monitor system performance (e.g., normal operator rounds, post maintenance or modification testing, operations and system engineer monitoring of plant/equipment performance) will be reviewed for completion of appropriate action to support reliable system performance for Mode 4 or Mode 3 operation. Uncorrected leaks documented on WRs or unresolved issues will be identified on the Mode 5 to Mode 4 approval checklist continuation form. When the operational status of systems is determined to be acceptable for mode change, the Technical Support Manager and Operations Manager shall affirm readiness of the systems for Mode 4 or Mode 3 operation by signing the Mode 5 to Mode 4 approval checklist.

OPERATIONS READINESS

A.5. System Alignments - The Operations Superintendent will verify correct plant alignment for Mode 4 entry after reviewing system checklists and system status files, and conducting thorough board w:: downs. Any concerns or issues shall be documented on the Mode 4 Approval Checklist Continuation Form. When the system lineups are determined ready for Mode 4 entry, the Operations Superintendent will affirm readiness by signing the Mode 5 to Mode 4 approval checklist.

A.6. GOI Requirements Satisfied - Operations will review the completion status of GOI-1 for Mode 4 entry. Any concerns or issues shall be documented on the approval checklist continuation form. When GOI-1 requirements for mode change have been verified complete, the Operations Superintendent shall affirm that the requirements are satisfied by signing on the Mode 5 to Mode 4 approval checklist. Any exceptions shall be noted on the approval checklist continuation form.

A.7. Housekeeping and Material Condition - Plant management shall conduct a general plant tour to verify that the general plant housekeeping and material condition is ready to support Mode 4 operation. Any identified issues or concerns shall be documented on the Mode 4 approval checklist. The Plant Manager shall affirm that housekeeping and material condition are acceptable for plant heatup and return to service by signing the Mode 5 to Mode 4 approval checklist.

A.8. Chemistry Parameters - The Radiological and Chemistry manager shall review and verify acceptability of plant chemistry parameters for plant heatup from Mode 5 to Mode 4. The Radiological and Chemistry manager shall affirm acceptability be signing the Mode 5 to Mode 4 approval checklist.

IV.B.DEPARTMENT AND PERSONNEL

B.1. DEPARTMENT READINESS

The Site Vice President and MRRC shall review the status of completion of department readiness reviews being conducted in accordance with Appendix 6 of this Restart Plan. The Site Vice President will affirm review and satisfactory progress/status of department readiness to support entry into Mode 4 by signing the Mode 5 to Mode 4 approval checklist.

AUGMENTED OVERSIGHT

B.2. Plant Management - A management oversight team, under the direction of the Plant Manager, shall be established and in place prior to Mode 4 entry for the purposes of monitoring and evaluating overall plant and personnel performance during the startup and power ascension period. Oversight will be maintained around the clock using rotating management oversight duty assignment and will continue through successful accomplishment of the final 100% power assessment conducted in section IX. Coverage will include both SRO level experienced individuals to monitor Operations performance and other management level individuals to monitor control and performance of overall plant activities. Identified issues or concerns will be reported to the Duty Plant Manager. The Plant Manager may suspend coverage if there are prolonged holds at any point or other warranting bases. The Site Vice President will be notified of such suspension. The Plant Manager will affirm that the oversight team coverage has been established by signing the Mode 5 to Mode 4 approval checklist.

B.3. Nuclear Assurance (NA) - An NA team shall be established by the Site Quality Manager and in place prior to Mode 4 entry for the purposes of assessing specific and overall conduct and performance of startup and power ascension activities. Team assessment methodology and coverage will be established under the direction of the Site Quality Manager. This oversight activity will continue through successful accomplishment of the final 100% power assessment conducted in section IX. Identified issues or concerns will be reported to the Site Quality Manager who will brief the Plant Manager on a periodic basis. Issues or concerns may be reported directly to the Duty Plant Manager as warranted. The Site Quality Manager shall affirm the NA team is established and in place by signing the Mode 5 to Mode 4 approval checklist.

IV.C.OVERALL READINESS

C.1. MANAGEMENT RESTART REVIEW COMMITTEE (MRRC) - The MRRC shall approve the readiness for entry into Mode 4 based on review of the Site Readiness Assessment conducted in accordance with Appendix 7 of this Restart Plan; review of the Mode 5 to Mode 4 approval checklist completion, including review of the Mode 5 to Mode 4

approval checklist continuation form and any attachments; and review of any current NRC concerns as presented by the Site Licensing Manager. The MRRC Chairman shall affirm completion of the Site Readiness Assessment for initial mode change (Mode 5 to Mode 4), completion and detailed review of Sections A and B of the Mode 5 to Mode 4 approval checklist including the continuation form and any attachments, and readiness for Mode 4 entry by signing the Site Readiness Assessment Form in accordance with Appendix 7 of the Restart Plan and in Section C of the Mode 5 to Mode 4 approval checklist.

C.2. PLANT OPERATIONS REVIEW COMMITTEE (PORC) - The PORC shall review the plant's readiness for Mode 4 entry. This review will be conducted concurrent with the MRRC review. The PORC Chairman will affirm PORC approval for the initial mode change from Mode 5 to Mode 4 by signing the Site Readiness Assessment Form in accordance with Appendix 7 of the Restart Plan and Section C of the Mode 5 to Mode 4 approval checklist.

C.3. SENIOR TVA MANAGEMENT - The Site Vice President shall review the plant's readiness with the Vice President, Nuclear Operations and President, Generating Group. After receiving concurrence from the Vice President, Nuclear Operations and President, Generating Group for entry into Mode 4, the Site Vice President shall sign the Mode 5 to Mode 4 approval checklist indicating that concurrence.

C.4. NUCLEAR REGULATORY COMMISSION (NRC) - The Site Vice President shall ensure that the NRC Regional Administrator has been notified of TVA approval for the initial mode change from Mode 5 to Mode 4 and that any NRC concerns which could impact this mode change have been resolved by signing the Mode 5 to Mode 4 approval checklist.

C.5. PLANT MANAGER - The Plant Manager shall verify completion of the Mode 5 to Mode 4 approval checklist before providing approval in GOl-1 for entry into Mode 4. The Plant Manager shall affirm completion and readiness by signing the Mode 5 to Mode 4 approval checklist.

V. ASSESSMENT HOLD POINT NO. 2 - MODE 3 PRIOR TO ENTRY INTO ADMINISTRATIVE MODE 2 (PRIOR TO PULLING CONTROL RODS TO APPROACH AND ACHIEVE CRITICALITY)

This section describes the reviews, affirmations, and approvals that will be conducted in Mode 3 before beginning to pull control rods to approach and achieve criticality and begin power operation up to the next holdpoint at 30% reactor power +/- 10%. This section also provides the basis for completing the Mode 3 to Mode 2 approval checklist. Associated comments/remarks, outstanding actions, and/or identified issues/concerns should be listed on the Mode 3 to Mode 2 approval checklist continuation form.

V.A. PLANT EQUIPMENT

OUTAGE PHYSICAL WORK COMPLETION

A.1. Outage Scope - The outage scheduled activities required for Mode 2 operation up to 30% +/- 10% reactor power will be verified complete by the Outage Planning Manager. Any outstanding activities will be listed on the Mode 3 to Mode 2 Approval Checklist Continuation Form. A summ r of outage activities to be conducted in Mode 2 and up to 40% reactor power will be attached to the approval checklist continuation form. When outage activities to support Mode 2 entry are verified complete, the Outage Planning Manager shall affirm completion by signing the Mode 3 to Mode 2 approval checklist.

A.2. New WRs - SROs will review new WRs for impact on Mode 2 or power operation up to 40% reactor power. An SRO will affirm acceptability of any new unworked WRs on Mode 2 entry by signing the Mode 3 to Mode 2 approval checklist.

SYSTEM READINESS

A.3. System Readiness Affirmation - The Final System Readiness Review Forms will be completed for systems in accordance with Appendix 5 of this Restart Plan. The Technical Support Manager will have reviewed the completion status of outstanding system related restart activities at the time of completion of the Final System Readiness Review Forms and will list any outstanding restart activities on the Mode 3 to Mode 2 Approval Checklist Continuation Form. When the status of outstanding items is determined acceptable, the Technical Support Manager shall affirm completion of the Final System Readiness Forms and readiness of plant systems for Mode 2 entry by signing the Mode 3 to Mode 2 approval checklist.

A.4. System Performance - Results of any walkdowns conducted to identify leaks and results of any activities to assess/monitor system performance (e.g., normal operator rounds, post

maintenance or modification testing, operations and system engineer monitoring of plant/equipment performance) will be reviewed for completion of appropriate action to support reliable system performance for Mode 2 and power operation up to 40% reactor power. Uncorrected leaks documented on WRs or unresolved issues will be identified on the Mode 3 to Mode 2 approval checklist continuation form. When the operational status of systems is determined to be acceptable for mode change, the Technical Support Manager and Operations Manager shall affirm readiness of the systems for Mode 2 and power operation up to 40% reactor power by signing the Mode 3 to Mode 2 approval checklist.

OPERATIONS READINESS

A.5. System Alignments - The Operations Superintendent will review plant alignment for Mode 2 entry from reviewing the GO status, hold orders and TSCCR logs, and conducting thorough board walkdowns. Any concerns or issues shall be documented on the Mode 3 to Mode 2 approval checklist continuation form. When the system lineups are determined ready for Mode 2 entry, the Operations Superintendent will affirm readiness by signing the Mode 3 to Mode 2 approval checklist.

A.6. GO Requirements Satisfied - Operations will review the completion status of 0-GO-2-1 for Mode 2 entry. Any concerns, issues, deviations or incomplete actions shall be documented on the Mode 3 to Mode 2 Approval Checklist Continuation Form. When 0-GO-2-1 requirements for mode change have been verified complete, the Operations Superintendent shall affirm that the requirements are satisfied by signing on the Mode 3 to Mode 2 approval checklist. Any exceptions shall be noted on the approval checklist continuation form.

A.7. N/A

A.8. Chemistry Parameters - The Radiological and Chemistry manager shall review and verify acceptability of plant chemistry parameters for taking the unit critical and beginning power increase to 30% reactor power. The Radiological and Chemistry manager shall affirm acceptability be signing the Mode 3 to Mode 2 approval checklist.

V.B.DEPARTMENT AND PERSONNEL

DEPARTMENT READINESS

B.1. DEPARTMENT READINESS

The Site Vice President and MRRC shall review the completion of department readiness reviews being conducted in accordance with Appendix 6 of this Restart Plan. The Site Vice President will affirm review and completion of department readiness review and affirmation forms by signing the Mode 3 to Mode 2 approval checklist.

AUGMENTED OVERSIGHT

B.2. Plant Management - The management oversight team shall report oversight activity results since Mode 4 entry to the Plant Manager for consideration in assessing readiness for Mode 2 entry using Attachment 11-4. The Plant Manager will attach this report to the Mode 3 to Mode 2 approval checklist continuation form and affirm acceptable disposition of identified concerns/issues by signing the Mode 3 to Mode 2 approval checklist.

B.3. Nuclear Assurance (NA) - The NA oversight team shall report oversight activity results since Mode 4 entry to the Site Quality Manager. The Site Quality Manager shall summarize (or attach) the results on the Mode 3 to Mode 2 approval checklist continuation form. The Site Quality Manager shall affirm acceptable disposition of identified concerns/issues by signing the Mode 3 to Mode 2 approval checklist.

V.C.OVERALL READINESS

C.1. MANAGEMENT RESTART REVIEW COMMITTEE (MRRC) - The MRRC shall approve the readiness for entry into Mode 2 based on review of the Site Readiness Assessment conducted in accordance with Appendix 7 of this Restart Plan; review of the Mode 3 to Mode 2 approval checklist completion, including review of the approval checklist continuation form and any attachments; and review of the Regulatory Closure Affirmation (Appendix 8) and any current NRC concerns as presented by the Site Licensing Manager. The MRRC Chairman shall affirm completion of the Site Readiness Assessment for Mode 2 entry, completion and detailed review of Sections A and B of the Mode 3 to Mode 2 approval checklist including the continuation form and any attachments, and readiness for mode 2 entry by signing the Site Readiness Assessment Form in accordance with Appendix 7 of the Restart Plan and the Mode 3 to Mode 2 approval checklist.

C.2. PLANT OPERATIONS REVIEW COMMITTEE (PORC) - The PORC shall review the plant's readiness for Mode 2 entry. This review will be conducted concurrent with the MRRC review. The PORC Chairman will affirm PORC approval for Mode 2 entry by signing the Site Readiness Assessment Form in accordance with Appendix 7 of the Restart Plan and the Mode 3 to Mode 2 approval checklist.

C.3. SENIOR TVA MANAGEMENT - An executive readiness review will be conducted following site readiness review. Readiness presentations will be made by both site and corporate management to the SQN Site Vice President; Vice President, Nuclear Operations; Vice President, Technical Support; and President, Generating Group. After reaching concurrence on readiness for unit restart, the Site Vice President will indicate Senior TVA management approval by signing the Mode 3 to Mode 2 approval checklist.

C.4. NUCLEAR REGULATORY COMMISSION (NRC) - The Site Vice President shall ensure that the Confirmation of Action Letter (Reference 1) has been satisfied, that the NRC Regional Administrator has provided approval for entry into Mode 2 and that any NRC concerns which could impact this mode change have been resolved by signing the Mode 3 to Mode 2 approval checklist.

C.5. PLANT MANAGER - The Plant Manager will verify completion of the Mode 3 to Mode 2 approval checklist before providing approval in 0-GO-2-1 to begin pulling control rods for approach to criticality. The Plant Manager will affirm completion and readiness by signing the Mode 3 to Mode 2 approval checklist.

VI. ASSESSMENT HOLD POINT NO.3 - 30% REACTOR POWER +/- 10%

This section describes the reviews, affirmations, and approvals that will be conducted before increasing power beyond 30% +/- 10% up to the next holdpoint at 65% reactor power +/- 10%. This section also provides the basis for completing the 30% approval checklist. Associated comments/remarks, outstanding actions, and/or identified issues/concerns should be listed on the 30% Approval Checklist Continuation Form.

VI.A.PLANT EQUIPMENT

OUTAGE PHYSICAL WORK COMPLETION

A.1. Outage Scope - The outage scheduled activities required for operation up to 75% reactor power will be verified complete by the Outage Planning Manager. Any outstanding activities will be listed on the 30% power approval checklist continuation form. A summary of outage activities to be conducted up to 75% reactor power will be attached to the 30% power approval checklist continuation form. When outage activities to support power increase to 65% +/- 10% are verified complete, the Outage Planning Manager shall affirm completion by signing the 30% approval checklist.

A.2. New WRs - SROs will review new WRs for impact on continued power operation and up to 75% reactor power. An SRO will affirm acceptability of any new unworked WRs by signing the 30% power approval checklist.

SYSTEM READINESS

A.3. N/A

A.4. System Performance - Results of any walkdowns conducted to identify leaks and results of any activities to assess/monitor system performance (e.g., normal operator rounds, post maintenance or modification testing, operations and system engineer monitoring of plant/equipment performance) will be reviewed for completion of appropriate action to support reliable system performance for power operation up to 75% reactor power. Uncorrected leaks documented on WRs or unresolved issues will be identified on the 30% power approval checklist continuation form. When the operational status of systems is determined to be acceptable for power increase, the Technical Support Manager and Operations Manager shall affirm readiness of the systems for power operation up to 75% reactor power by signing the 30% power approval checklist.

OPERATIONS READINESS

A.5. System Alignments - The Operations Superintendent will review plant alignment for power increase up to 75% reactor power. Any concerns or issues shall be documented on the 30% power Approval Checklist Continuation Form. When the system lineups are determined ready for power increase, the Operations Superintendent will affirm readiness by signing the 30% power approval checklist.

A.6. GO Requirements Satisfied - Operations will review the completion status of 0-GO-2-3 for power increase beyond 30%. Any concerns, issues, deviations or incomplete actions shall be documented on the 30% Power Approval Checklist Continuation Form. When 0-GO-2-3 requirements have been verified complete for power increase, the Operations Superintendent shall affirm that the requirements are satisfied by signing on the 30% approval checklist.

A.7. N/A

A.8. Chemistry Parameters - The Radiological and Chemistry manager shall review and verify acceptability of plant chemistry parameters for power increase up to 75% reactor power. The Radiological and Chemistry manager shall affirm acceptability be signing the 30% power approval checklist.

VI.B. DEPARTMENT AND PERSONNEL

DEPARTMENT READINESS

B.1. N/A

AUGMENTED OVERSIGHT

B.2. Plant Management - The management oversight team shall report oversight activity results since Mode 2 entry to the Plant Manager for consideration in assessing readiness for further power increase using Attachment 11-4. This will include assessment of personnel, department, and program/process performance. The Plant Manager will attach this oversight report to the 30% power approval checklist continuation form and affirm acceptable disposition of identified concerns/issues by signing the 30% approval checklist.

B.3. Nuclear Assurance (NA) - The NA oversight team shall report oversight activity results since Mode 2 entry to the Site NA Manager. The Site NA Manager shall summarize (or attach) the results on the 30% power approval checklist continuation form. The Site Quality Manager shall affirm acceptable disposition of identified concerns/issues by signing the 30% power approval checklist.

VI.C.OVERALL READINESS

C.1. MANAGEMENT RESTART REVIEW COMMITTEE (MRRC) - The MRRC shall approve the readiness for further power increase to 65% +/- 10%. Approval will be based on review of the 30% power approval checklist, including review of the 30% approval checklist continuation form and attachments. This review addresses completion of outage related activities to support readiness for the power increase; scheduling and control of activities up to the next hold point; system/plant performance since Mode 2; and oversight team results considering personnel, department, and program/process performance since Mode 2. The MRRC Chairman shall affirm completion and detailed review of Sections A and B of the 30% power approval checklist including the continuation form and attachments and readiness for power increase to 65% +/- 10% by signing the 30% power approval checklist.

C.2. PLANT OPERATIONS REVIEW COMMITTEE (PORC) - The PORC shall review the plant's readiness for further power increase to 65% +/- 10%. This review will be conducted concurrent with the MRRC review. The PORC Chairman will affirm PORC approval by signing the 30% power approval checklist.

C.3. SENIOR TVA MANAGEMENT - The Site Vice President shall review the plant's readiness for further power increase with the Vice President Nuclear Operations and President, Generating Group. After receiving concurrence with the decision to increase power to 65% from the Vice President, Nuclear Operations and President, Generating Group, the Site Vice President shall sign the 30% power approval checklist indicating that concurrence.

C.4. NUCLEAR REGULATORY COMMISSION (NRC) - The Site Vice President shall ensure that the NRC Regional Administrator has provided approval for further power increase to 65% power and that any NRC concerns regarding further power increase have been addressed by signing the 30% power approval checklist.

C.5. PLANT MANAGER - The Plant Manager will verify completion of the 30% power approval checklist up to this final signature before providing approval in GOI-5 for further power increase up to the 65% +/- 10% holdpoint. The Plant Manager will affirm completion and readiness by signing the 30% power approval checklist.

VII. ASSESSMENT HOLD POINT NO. 4 - 65% REACTOR POWER +/- 10%

This section describes the reviews, affirmations, and approvals that will be conducted before increasing power beyond 65% +/- 10% up to the next holdpoint at 90% reactor power +/- 10%. This section also provides the basis for completing the 65% approval checklist. Associated comments/remarks, outstanding actions, and/or identified issues/concerns should be listed on the 65% approval checklist continuation form.

VII.A. PLANT EQUIPMENT

OUTAGE PHYSICAL WORK COMPLETION

A.1 Outage Scope - The outage scheduled activities required for 65% operation up to 95% reactor power will be verified complete by the Outage Planning Manager. Any outstanding activities will be listed on the 65% power approval checklist continuation form. A summary of outage activities to be conducted up to 95% reactor power will be attached to the 65% power approval checklist continuation form. When outage activities to support power increase to 95% are verified complete, the Outage Planning Manager shall affirm completion by signing the 65% approval checklist.

A.2. New WRs - SROs will review new WRs for impact on continued power operation up to 95% reactor power. An SRO will affirm acceptability of any new unworked WRs by signing the 65% power approval checklist.

SYSTEM READINESS

A.3. N/A

A.4. System Performance - Results of any walkdowns conducted to identify leaks and results of any activities to assess/monitor system performance (e.g., normal operator rounds, post maintenance or modification testing, operations and system engineer monitoring of plant/equipment performance) will be reviewed for completion of appropriate action to support reliable system performance for power operation up to 95% reactor power. Uncorrected leaks documented on WRs or unresolved issues will be identified on the 65% power approval checklist continuation form. When the operational status of systems is determined to be acceptable for power increase, the Technical Support Manager and Operations Manager shall affirm readiness of the systems for power operation up to 95% reactor power by signing the 65% power approval checklist.

OPERATIONS READINESS

A.5. System Alignments - The Operations Superintendent will review plant alignment for power increase up to 95% reactor power. Any concerns or issues shall be documented on the 65% power Approval Checklist Continuation Form. When the system lineups are determined ready for power increase, the Operations Superintendent will affirm readiness by signing the 65% power approval checklist.

A.6. GOI Requirements Satisfied - Operations will review the completion status of GOI-5 for power increase beyond 65%. Any concerns, issues, deviations or incomplete actions shall be documented on the 65% Power Approval Checklist Continuation Form. When GOI-5 requirements for further power increase have been verified complete, *(Verify step number)*, the Operations Superintendent shall affirm that the requirements are satisfied by signing on the 65% approval checklist. Any exceptions shall be noted on the approval checklist continuation form.

A.7. N/A

A.8. Chemistry Parameters - The Radiological and Chemistry manager shall review and verify acceptability of plant chemistry parameters for power increase up to 95%. The Radiological and Chemistry manager shall affirm acceptability be signing the 65% approval checklist.

VII.B. DEPARTMENT AND PERSONNEL

DEPARTMENT READINESS

B.1. N/A

AUGMENTED OVERSIGHT

B.2. Plant Management - The management oversight team shall report oversight activity results since the 30% holdpoint assessment to the Plant Manager for consideration in assessing readiness for further power increase using Attachment 11-4. This will include assessment of personnel, department, and program/process performance. The Plant Manager will attach this report to the 65% power approval checklist continuation form and affirm acceptable disposition of identified concerns/issues by signing the 65% approval checklist.

B.3. Nuclear Assurance (NA) - The NA oversight team shall report oversight activity results since the 30% hold point assessment to the Site Quality Manager. The Site Quality Manager shall summarize (or attach) the results on the 65% power approval checklist continuation form. The Plant Manager shall affirm acceptable disposition of identified concerns/issues by signing the 65% power approval checklist.

VII.C. OVERALL READINESS

C.1. MANAGEMENT RESTART REVIEW COMMITTEE (MRRC) - The MRRC shall approve the readiness for further power increase to 90% +/- 5%. Approval will be based on review of the 65% power approval checklist, including review of the 65% approval checklist continuation form and attachments. This review addresses completion of outage related activities to support readiness for the power increase; scheduling and control of activities up to the next hold point; system/plant performance to this point; and oversight team results considering personnel, department, and program/process performance. The MRRC Chairman shall affirm completion and detailed review of Sections A and B of the 65% power approval checklist including the continuation form and attachments and readiness for power increase to 90% +/- 5% by signing the 65% power approval checklist.

C.2. PLANT OPERATIONS REVIEW COMMITTEE (PORC) - The PORC shall review the plant's readiness for further power increase to 90% +/- 5%. This review will be conducted concurrent with the MRRC review. The PORC Chairman will affirm PORC approval by signing the 65% power approval checklist.

C.3. SENIOR TVA MANAGEMENT - The Site Vice President shall review the plant's readiness for further power increase with the Vice President, Nuclear Operations and President, Generating Group. After receiving concurrence with the decision to increase power to 90% +/- 5% from the Vice President, Nuclear Operations and President, Generating Group, the Site Vice President shall sign the 65% power approval checklist indicating that concurrence.

C.4. NUCLEAR REGULATORY COMMISSION (NRC) - The Site Vice President shall ensure that the NRC Regional Administrator has been notified of TVA approval for further power increase to 90% +/- 5% power and that any NRC concerns regarding further power increase have been addressed by signing the 65% power approval checklist.

C.5. PLANT MANAGER - The Plant Manager will verify completion of the 65% power approval checklist up to this final signature before providing approval in GOI-5 for further power increase up to the 90% +/- 5% holdpoint. The Plant Manager will affirm completion and readiness by signing the 65% power approval checklist.

VIII. ASSESSMENT HOLD POINT NO. 5 - 90% REACTOR POWER +/- 5%

This section describes the reviews, affirmations, and approvals that will be conducted before increasing power beyond 90% +/- 5% up to 100% reactor power. This section also provides the basis for completing the 90% approval checklist. Associated comments/remarks, outstanding actions, and/or identified issues/concerns should be listed on the 90% approval checklist continuation form.

VIII.A.PLANT EQUIPMENT

OUTAGE PHYSICAL WORK COMPLETION

A.1 Outage Scope - The outage scheduled activities required for operation up to 100% reactor power will be verified complete by the Outage Planning manager. Any outstanding activities will be listed on the 90% power approval checklist continuation form. A summary of outage activities to be conducted up to and at 100% reactor power will be attached to the 90% power approval checklist continuation form. When outage activities to support power increase to 100% are verified complete, the Outage Planning Manager shall affirm completion by signing the 90% approval checklist.

A.2. New WRs - SROs will review new WRs in for impact on continued power operation up to 100%. An SRO will affirm acceptability of any new unworked WRs by signing the 90% power approval checklist.

SYSTEM READINESS

A.3. N/A

A.4. System Performance - Results of any walkdowns conducted to identify leaks and results of any activities to assess/monitor system performance (e.g., normal operator rounds, post maintenance or modification testing, operations and system engineer monitoring of plant/equipment performance) will be reviewed for completion of appropriate action to support reliable system performance for power operation up to 100% reactor power. Uncorrected leaks documented on WRs or unresolved issues will be identified on the 90% power approval checklist continuation form. When the operational status of systems is determined to be acceptable for power increase, the Technical Support Manager and Operations Manager shall affirm readiness of the systems for power operation up to 100% reactor power by signing the 90% power approval checklist.

OPERATIONS READINESS

A.5. System Alignments - The Operations Superintendent will review plant alignment for power increase up to 100%. Any concerns or issues shall be documented on the 90% power Approval Checklist Continuation Form. When the system lineups are determined ready for power increase, the Operations Superintendent will affirm readiness by signing the 90% power approval checklist.

A.6. GOI Requirements Satisfied - Operations will review the completion status of GOI-5 for power increase beyond 90%. Any concerns, issues, deviations or incomplete actions shall be documented on the 90% Power Approval Checklist Continuation Form. When GOI-5 requirements for further power increase have been verified complete, the Operations Superintendent shall affirm that the requirements are satisfied by signing on the 90% approval checklist. Any exceptions shall be noted on the approval checklist continuation form.

A.7. N/A

A.8. Chemistry Parameters - The Radiological and Chemistry manager shall review and verify acceptability of plant chemistry parameters for power increase to 100%. The Radiological and Chemistry manager shall affirm acceptability be signing the 90% approval checklist.

VIII.B.DEPARTMENT AND PERSONNEL

DEPARTMENT READINESS

B.1. N/A

AUGMENTED OVERSIGHT

B.2. Plant Management - The management oversight team shall report oversight activity results since the 65% holdpoint assessment to the Plant Manager for consideration in assessing readiness for further power increase using Attachment 11-4. This will include assessment of personnel, department, and program/process performance. The Plant Manager will attach this report to the 90% power approval checklist continuation form and affirm acceptable disposition of identified concerns/issues by signing the 90% approval checklist.

B.3. Nuclear Assurance (NA) - The NA oversight team shall report oversight activity results since the 65% hold point assessment to the Site Quality Manager. The Site Quality Manager shall summarize (or attach) the results on the 90% power approval checklist continuation form. The Site Quality Manager shall affirm acceptable disposition of identified concerns/issues by signing the 90% power approval checklist.

VIII.C.OVERALL READINESS

C.1. MANAGEMENT RESTART REVIEW COMMITTEE (MRRC) - The MRRC shall approve the readiness for further power increase to 100%. Approval will be based on review of the 90% power approval checklist, including review of the 90% approval checklist continuation form and attachments. This review addresses completion of outage related activities to support readiness for the power increase; scheduling and control of activities up to 100% reactor power; system/plant performance to this point; and oversight team results considering personnel, department, and program/process performance. The MRRC Chairman shall affirm completion and detailed review of Sections A and B of the 90% power approval checklist including the continuation form and attachments and readiness for power increase to 100% by signing the 90% power approval checklist.

C.2. PLANT OPERATIONS REVIEW COMMITTEE (PORC) - The PORC shall review the plant's readiness for further power increase to 100%. This review will be conducted concurrent with the MRRC review. The PORC Chairman will affirm PORC approval by signing the 90% power approval checklist.

C.3. SENIOR TVA MANAGEMENT - The Site Vice President shall review the plant's readiness for further power increase with the Vice President, Nuclear Operations and President, Generating Group. After receiving concurrence with the decision to increase power to 100% from the Vice President, Nuclear Operations and President, Generating Group, the Site Vice President shall sign the 90% power approval checklist indicating that concurrence.

C.4. NUCLEAR REGULATORY COMMISSION (NRC) - The Site Vice President shall ensure that the NRC Regional Administrator has been notified of TVA approval for further power increase to 100% power and that any NRC concerns regarding further power increase have been addressed by signing the 90% power approval checklist.

C.5. PLANT MANAGER - The Plant Manager will verify completion of the 90% power approval checklist up to this final signature before providing approval in GOI-5 for further power increase up to the 100% reactor power. The Plant Manager will affirm completion and readiness by signing the 90% power approval checklist.

IX. ASSESSMENT HOLD POINT NO. 6 - 100% REACTOR POWER

This section describes the reviews, affirmations, and approvals that will be conducted upon reaching 100% reactor power. This assessment will be conducted after five days of continuous full power operation and will be documented on a 100% power approval checklist. The assessment will establish the basis for continued full power operation and, based upon favorable results, will mark the transition from this special power ascension monitoring process to the normal plant procedures and processes.

IX.A.PLANT EQUIPMENT

OUTAGE PHYSICAL WORK COMPLETION

A.1 Outage Scope - The outage scheduled activities required for full power operation will be verified complete by the Outage Planning Manager. Any outstanding activities will be listed on the 100% power approval checklist continuation form. The Outage Planning Manager shall affirm completion by signing the 100% power approval checklist.

A.2. New WRs - SROs will review new WRs for impact on continued power operation. An SRO will affirm appropriate prioritization and scheduling of any new unworked WRs by signing the 100% power approval checklist.

SYSTEM READINESS

A.3. N/A

A.4. System Performance - Results of any walkdowns conducted to identify leaks and results of any activities to assess/monitor system performance (e.g., normal operator rounds, post maintenance or modification testing, operations and system engineer monitoring of plant/equipment performance) will be reviewed for completion of appropriate action to support continued reliable full power operation. Uncorrected leaks documented on WRs or unresolved issues will be identified on the 100% power approval checklist continuation form. When the operational status of systems is determined to be acceptable for continued reliable full power operation, the Technical Support Manager and Operations Manager shall affirm readiness of the systems by signing the 100% power approval checklist.

OPERATIONS READINESS

A.5. System Alignments - The Operations Superintendent will review plant alignment for full power operation. Any concerns or issues shall be documented on the 100% power Approval Checklist Continuation Form. When plant alignment is reviewed and determined acceptable, the Operations Superintendent will affirm readiness for continued reliable operation by signing the 100% power approval checklist.

A.6. GOI Requirements Satisfied - Operations will review the completion status of GOI-5 for full power operation. Any concerns, issues, deviations or incomplete actions shall be documented on the 100% Power Approval Checklist Continuation Form. When GOI-5 requirements for continued full power operation have been verified complete, the Operations Superintendent shall affirm that the requirements are satisfied by signing on the 100% approval checklist.

A.7. N/A

A.8. Chemistry Parameters - The Radiological and Chemistry manager shall review and verify acceptability of plant chemistry parameters for continued full power operation. The Radiological and Chemistry manager shall affirm acceptability be signing the 100% approval checklist.

IX.B.DEPARTMENT AND PERSONNEL

DEPARTMENT READINESS

B.1. N/A

AUGMENTED OVERSIGHT

B.2. Plant Management - The management oversight team, using Attachment 11-4, shall prepare a report summarizing oversight activity results since the 90% holdpoint assessment and the collective results of oversight activity over the entire startup and power ascension evolution. This will include assessment of personnel, department, and program/process performance as well as review of any recent plant events. The Plant Manager shall review and attach this report to the 100% power approval checklist continuation form for overall MRRC and PORC consideration in assessment of acceptability of plant, personnel, and process performance to support safe and reliable continued operation. The Plant Manager shall sign the 100% power approval checklist indicating review and inclusion of this report.

B.3. Nuclear Assurance (NA) - The NA oversight team shall prepare a report summarizing oversight activity results since the 90% hold point assessment and the collective results of oversight activity during the entire startup and power ascension evolution. The Site Quality Manager shall attach the report to the 100% power approval checklist continuation form for overall MRRC and PORC consideration in assessment of acceptability of plant, personnel, and process performance to support safe and reliable continued operation. The Site Quality Manager shall sign the 100% power approval checklist indicating review and inclusion of this report.

IX.C.OVERALL READINESS

C.1. MANAGEMENT RESTART REVIEW COMMITTEE (MRRC) - The MRRC shall review and approve the readiness of the plant and site personnel and processes to support continued safe and reliable full power operation. Approval will be based on review of the 100% power approval checklist, including review of the 100% approval checklist continuation form and attachments. This review addresses completion of outage related activities; review of new maintenance WRs; review of system/plant performance; and oversight team results considering overall plant, personnel, department, and program/process performance. The MRRC Chairman shall affirm completion and detailed review of Sections A and B of the 100% power approval checklist including the continuation form and attachments and, based upon acceptable results, shall indicate readiness for continued safe and reliable full power operation by signing the 100% power approval checklist. This signature indicates approval to transition from the special processes outlined in the SQN Restart Plan and this power ascension program to the normal site processes for the associated unit. Outstanding or longer term improvements or action items resulting from this review will be identified and tracked through established site processes.

C.2. PLANT OPERATIONS REVIEW COMMITTEE (PORC) - The PORC shall review the plant's readiness for continued safe and reliable full power operation. This review will be conducted concurrent with the MRRC review. The PORC Chairman will affirm PORC approval by signing the 100% power approval checklist.

C.3. SENIOR TVA MANAGEMENT - The Site Vice President shall review with the Vice President, Nuclear Operations and President, Generating Group the collective results of site performance assessment conducted during the unit startup and power ascension and the basis for continued safe and reliable full power operation of the associated unit within established site processes. After receiving concurrence with this assessment from the Vice President, Nuclear Operations and President, Generating Group, the Site Vice President shall sign the 100% power approval checklist indicating this concurrence.

C.4. NUCLEAR REGULATORY COMMISSION (NRC) - The Site Vice President shall ensure that any NRC concerns regarding continued full power operation have been addressed and that the NRC Regional Administrator has been notified of TVA approval for continued

full power operation and transition to normal site processes for the associated unit. The Site VP shall indicate this notification by signing the 100% power approval checklist.

C.5. PLANT MANAGER - The Plant Manager will verify completion of the 100% power approval checklist before providing approval in GOI-5 to release the unit for continued full power operation within normal site processes. The Plant Manager will affirm completion and readiness by signing the 100% power approval checklist.

STARTUP AND POWER ASCENSION REVIEW AND APPROVAL MATRIX

ASSESSMENT HOLDPOINTS	Mode[1] 5	Mode[2] 3	30% Power	65% Power	90% Power	100% Power
A. PLANT EQUIPMENT						
OUTAGE PHYSICAL WORK COMPLETION						
Outage scope (for mode/power level)	C	C	C	C	C	C
New WRs	R	R	R	R	R	R
SYSTEM READINESS						
System Readiness Affirmation (for Mode)	C	C				
System Performance	R	R	R	R	R	R
OPERATIONS READINESS						
System Alignments (for mode/power level)	C	R	R	R	R	R
GO Requirements	R	R	R	R	R	R
Housekeeping and Material Condition	R					
Chemistry Parameters	R	R	R	R	R	R
B. DEPARTMENT AND PERSONNEL						
DEPARTMENT READINESS						
Department Readiness Affirmations	R	C				
AUGMENTED OVERSIGHT (Personnel/Processes)						
Plant Management	R	R	R	R	R	R
Nuclear Assurance (NA)	R	R	R	R	R	R
C. OVERALL READINESS						
MRRC/PORC	A	A	A	A	A	A
SR. TVA MANAGEMENT	R	A	R	R	R	R
NRC	R	A	A	R	R	R
PLANT MANAGER	A	A	A	A	A	A

[1] Mode 5 prior to entering Mode 4.

[2] Mode 3 prior to pulling control rods to achieve criticality.

C – COMPLETE   R – REVIEW   A – APPROVAL

_____ ASSESSMENT HOLD POINT
APPROVAL CHECKLIST

ITEM		POSITION	SIGNATURE	DATE
A.	PLANT EQUIPMENT			
A.1	OUTAGE SCOPE COMPLETE/SCHEDULE ATTACHED	OUTAGE MANAGER		
A.2	NEW WRs REVIEWED	WCG SRO		
A.3	SYSTEM READINESS AFFIRMED	TECHNICAL SUPPORT MANAGER		
A.4	SYSTEM PERFORMANCE ACCEPTABLE	TECHNICAL SUPPORT/OPS MANAGER		
A.5	SYSTEM ALIGNMENTS COMPLETE	OPERATIONS SUPERINTENDENT		
A.6	GO REQUIREMENTS SATISFIED	OPERATIONS SUPERINTENDENT		
A.7	HOUSEKEEPING & MATERIEL CONDITION ACCEPTABLE	PLANT MANAGER		
A.8	CHEMISTRY PARAMETERS ACCEPTABLE	RADCON & CHEMISTRY MANAGER		
B.	DEPARTMENT READINESS			
B.1	DEPARTMENT READINESS AFFIRMED	SITE VICE PRESIDENT		
B.2	PLANT MANAGEMENT OVERSIGHT REVIEWED[1]	PLANT MANAGER		
B.3	NA OVERSIGHT REVIEWED	SITE QUALITY MANAGER		
C.	OVERALL READINESS			
C.1	MRRC APPROVAL	MRRC CHAIRMAN		
C.2	PORC APPROVAL	PORC CHAIRMAN		
C.3	SR. TVA MANAGEMENT REVIEW	SITE VICE PRESIDENT		
C.4	NRC REVIEW & NOTIFICATION	SITE VICE PRESIDENT		
C.5	PLANT MANAGER APPROVAL	PLANT MANAGER		

(1) Review plant management oversight team assessment checklist (Att. 11-4).

ASSESSMENT HOLD POINT
APPROVAL CHECKLIST CONTINUATION FORM

Sheet _____ of _____

ITEM	INITIALS	DATE	

PLANT MANAGEMENT OVERSIGHT TEAM ASSESSMENT CHECKLIST
_____ ASSESSMENT HOLD POINT

OPERATIONS	Satisfactory[1] Yes/No	Initials	Date
• COMMAND AND CONTROL			
• COMMUNICATIONS			
–FORMALITY			
–EFFECTIVENESS			
• COGNIZANCE OF PLANT STATUS			
• RESPONSE TO ANNUNCIATORS/ALARMS			
• LOGKEEPING & TURNOVER			
• CONDUCT OF ROUNDS			
• PROCEDURAL ADHERENCE			
• MONITORING OF EQUIPMENT PERFORMANCE			
SITE PERSONNEL/PROCESSES			
• CONTROL OF WORK			
–COORDINATION & COMMUNICATION			
–PLANNING AND SCHEDULING			
–CONDUCT OF WORK			
• PROCEDURE ADHERENCE			
• ORGANIZATION COMMUNICATION AND COOPERATION			
• PROCEDURE AND WORK DOCUMENT ADEQUACY			
• S.T.A.R. UTILIZATION			
• OPERATIONS SUPPORT			

[1] For any "NO", provide additional detail under "issues" Att. 11–4 sheet 2 of 2.

PLANT MANAGEMENT OVERSIGHT TEAM ASSESSMENT CHECKLIST
_____ ASSESSMENT HOLD POINT

SUMMARY OF OVERSIGHT ACTIVITY CONDUCTED (Support documentation may be attached as needed): _____

_____

_____

_____

_____

_____

_____

ISSUES: _____

_____

_____

_____

_____

_____

CONCLUSION: _____

_____

_____

_____

_____

TEAM MEMBERS: _____

_____

_____

_____

_____

_____   _____
SIGNATURE   DATE

APPENDIX 12

APPENDIX 12

UNIT ONE
TRANSITION FROM RESTART PLAN TO NORMAL PROCESSES

I. OBJECTIVE

This appendix describes the management plan for ensuring the safe, controlled, and deliberate return to service of Sequoyah Nuclear Plant (SQN) Unit One. This appendix defines and describes assessment hold points where reviews and approvals will be conducted. This appendix also describes additional oversight and checks during the startup and power ascension to review plant equipment and personnel performance. This appendix integrates portions of other Restart Plan processes, outage closeout processes, and site startup processes and procedures with additional requirements set forth by this appendix.

The SQN restart plan and associated processes were established as management tools to fully develop, integrate, and manage a large number of hardware and software efforts aimed at establishing site readiness for safe and effective operations. The processes provided in the restart plan augmented the preexisting processes used for the normal day-to-day operations at SQN. The full transition to normal station processes will occur at such a time that the overall objectives of the Restart Plan are assured and adequate processes to support future effective operations are established.

II. PROCESS

The following information provides the approach to the application and transition of existing processes to Unit 1.

NRC Involvement - The last NRC hold point for Unit 2 has passed, and the NRC Restart Panel will be kept informed of the status of Unit 1 including any differences between the Unit 2 and Unit 1 restart approach. The regulatory oversight and inspection of TVA"s completion of the Unit 1 outage and startup will be provided as determined appropriate by the NRC. The regulatory interface, including management briefings/meetings and commitment closeout, will be completed through normal processes. The mode change and restart of Unit 1 will be coordinated with the NRC.

Restart List - A list of items has been generated as part of the original Restart Plan. The items on that list approved as restart items by the Management Restart Review Committee (MRRC) can only be removed by the MRRC.

Corrective Action Documents - The process currently being used to identify corrective action documents needing action or disposition before startup (Nuclear Assurance [NA] coding documents from the morning Management Review Committee meetings) will be

continued for the Unit 1 startup. NA will provide the status of corrective action documents.

Addition and Deletion of New Work Orders and Work Requests - Site Standard Practice (SSP) 7.2 "Outage Management" is the SQN procedure used to add or delete work orders and work request. Newly initiated work requests, meeting the restart criteria below, will be added to the Unit One outage scope by the Outage Manager. Deletion of previously defined outage scope is made by the Outage Manager with appropriate system engineer concurrence. Work activities that are deleted from the outage scope, for performance as either a nonoutage or future outage activity, are presented to the MRRC for final approval.

System Readiness - System walkdowns have been conducted on Unit 1. System engineers will track the completion of the outage scope on their systems and conduct additional system walkdowns (e.g., Normal Operating Temperature and Pressure [NOTP]). An activity to conduct NOTP walkdowns will be added to the outage schedule. The system engineers will review their system readiness with the Technical Support Manager, Operations Superintendent, and Plant Manager before restart.

Department Readiness - Department readiness reviews will be handled during the monthly SQN Management Assessment Review Team meetings.

Startup and Power Ascension - Outage closeout, startup, and power ascension will be conducted and controlled using SSP-7.2 and Operations' startup and operating procedures (e.g., checklists, general operating instructions technical specification component reports, etc.). The appropriate level of management involvement and oversight (e.g., special management reviews or Plant Operations Review Committee [PORC] reviews will be provided consistent with unit/outage/site performance. As a minimum, this will include senior TVA management approval before Mode 2 entry. SQN Site Vice President approval is required for all other mode changes.

A PORC review will be conducted before Mode 2 to review final closeout.

RESTART EVALUATION CRITERIA

- Actions needed to ensure technical specification (TS) operability will be completed before entering a mode for which the associated requirements are applicable except as allowed under the Limiting Condition for Operation 3.0.4 exception.
- Actions needed to satisfy NRC docketed commitments or agreements associated with the current outages (e.g., CAL items) will be completed before startup.

- The following screening criteria will be used to evaluate other open items/issues to determine what additional actions should be taken before the restart of the units from the current outages:

- Adverse impact on safety system availability or performance. For example, the potential for causing frequent entry into TS action statements, the potential for entry into short-term TS action statements, and the potential to render a component or system incapable of performing the intended design function.

- Significant challenge to plant/personnel performance because of individual or aggregate impact. For example, high numbers of compensatory actions, disabled annunciators, high backlog numbers, and degraded or unreliable equipment performance.

- High potential to impact plant operating reliability. For example, the likelihood for causing trips/transients. Common or single failure-point weaknesses necessitate entry into short-term TS action statements and the likelihood for hardware failure before the end of the next operating cycle.

The above criteria do not preclude the approval and inclusion of activities that do not meet the criteria but are determined desirable/prudent in consideration of the overall site objectives (e.g., activities associated with ALARA, industrial safety, and /or resource optimization).

III. ASSESSMENT HOLD POINTS

This appendix establishes the following assessment hold points at which plant conditions are maintained until a prescribed assessment of site readiness for further progression, as defined by this appendix, is completed.

- Mode 5 prior to Mode 4 entry
- Mode 3 prior to Administrative Mode 2 entry (prior to pulling control rods to approach and achieve criticality)
- 30 percent reactor power +/- 10 percent
- 65 percent reactor power +/- 10 percent
- 90 percent reactor power +/- 5 percent
- 100 percent reactor power (assessment to approve continued operation)

Corresponding holdpoints requiring Plant Manager approval for further increase in plant mode or power level will be established in the applicable general operating instructions. These holdpoint and associated operational allowances, e.g., +/- 10%, shall not preclude licensed responsibilities to take the unit, if determined necessary, to a reduced power level or operating mode to ensure safe and stable unit operation.

IV. STARTUP AND POWER ASCENSION REVIEW AND APPROVAL MATRIX

The Startup and Power Ascension Review and Approval Matrix (Attachment 12-1) identifies the review and assessment areas and the types of reviews and approvals for each assessment

hold point. Approval checklists (Attachment 12-2) and supporting approval checklist continuation forms (Attachment 12-3) will be completed for the associated assessment hold points. The assessment hold point, as defined in Section III above will be entered at the top of Attachment 12-2 and 12-3 forms. The checklists will be completed for the associated assessment hold points and reviewed by the Plant Manager and Site Vice President before providing approval in the General Operating procedure for unit progression beyond that hold point defined condition. Appropriate implementation of normal processes for Unit One will be as described in this Appendix.

STARTUP AND POWER ASCENSION REVIEW AND APPROVAL MATRIX

ASSESSMENT HOLDPOINTS	Mode[1] 5	Mode[2] 3	30% Power	65% Power	90% Power	100% Power
A. PLANT EQUIPMENT						
OUTAGE PHYSICAL WORK COMPLETION						
Outage scope (for mode/power level)	C	C	C	C	C	C
New WRs	R	R	R	R	R	R
SYSTEM READINESS						
System Readiness Affirmation (for Mode)	C	C				
System Performance	R	R	R	R	R	R
OPERATIONS READINESS						
System Alignments (for mode/power level)	R	R	R	R	R	R
GO Requirements	R	R	R	R	R	R
Housekeeping and Material Condition	R					
Chemistry Parameters	R	R	R	R	R	R
B. DEPARTMENT AND PERSONNEL						
DEPARTMENT READINESS						
Department Readiness Affirmations	R	C				
AUGMENTED OVERSIGHT (Personnel/Processes)						
Plant Management	R	R	R	R	R	R
Nuclear Assurance (NA)	R	R	R	R	R	R
C. OVERALL READINESS						
MRRC/PORC	A	A				
SR. TVA MANAGEMENT	R	A	R	R	R	R
NRC	R	R	R	R	R	R
SITE VP	A	A	A	A	A	A
PLANT MANAGER	A	A	A	A	A	A

[1] Mode 5 prior to entering Mode 4.

[2] Mode 3 prior to pulling control rods to achieve criticality.

C – COMPLETE   R – REVIEW   A – APPROVAL

_____ ASSESSMENT HOLD POINT
APPROVAL CHECKLIST

ITEM		POSITION	SIGNATURE	DATE
A.	PLANT EQUIPMENT			
A.1	OUTAGE SCOPE COMPLETE/SCHEDULE ATTACHED	OUTAGE MANAGER		
A.2	NEW WRs REVIEWED	WCG SRO		
A.3	SYSTEM READINESS AFFIRMED	TECHNICAL SUPPORT MANAGER		
A.4	SYSTEM PERFORMANCE ACCEPTABLE	TECHNICAL SUPPORT/OPS MANAGER		
A.5	SYSTEM ALIGNMENTS COMPLETE	OPERATIONS SUPERINTENDENT		
A.6	GO REQUIREMENTS SATISFIED	OPERATIONS SUPERINTENDENT		
A.7	HOUSEKEEPING & MATERIEL CONDITION ACCEPTABLE	PLANT MANAGER		
A.8	CHEMISTRY PARAMETERS ACCEPTABLE	RADCON & CHEMISTRY MANAGER		
B.	DEPARTMENT READINESS			
B.1	DEPARTMENT READINESS AFFIRMED	SITE VICE PRESIDENT		
B.2	PLANT MANAGEMENT OVERSIGHT REVIEWED[1]	PLANT MANAGER		
B.3	NA OVERSIGHT REVIEWED	SITE QUALITY MANAGER		
C.	OVERALL READINESS			
C.1	MRRC APPROVAL	MRRC CHAIRMAN		
C.2	PORC APPROVAL	PORC CHAIRMAN		
C.3	SR. TVA MANAGEMENT REVIEW	SITE VICE PRESIDENT		
C.4	NRC REVIEW & NOTIFICATION	SITE VICE PRESIDENT		
C.5	SITE VICE PRESIDENT APPROVAL	SITE VICE PRESIDENT		
C.6	PLANT MANAGER APPROVAL	PLANT MANAGER		

(1) Review plant management oversight team assessment checklist (Att. 12-4).

ASSESSMENT HOLD POINT
APPROVAL CHECKLIST CONTINUATION FORM

Sheet _____ of _____

ITEM	INITIALS	DATE	

PLANT MANAGEMENT OVERSIGHT TEAM ASSESSMENT CHECKLIST
_____ ASSESSMENT HOLD POINT

	Satisfactory[1] Yes/No	Initials	Date
OPERATIONS			
• COMMAND AND CONTROL			
• COMMUNICATIONS			
-FORMALITY			
-EFFECTIVENESS			
• COGNIZANCE OF PLANT STATUS			
• RESPONSE TO ANNUNCIATORS/ALARMS			
• LOGKEEPING & TURNOVER			
• CONDUCT OF ROUNDS			
• PROCEDURAL ADHERENCE			
• MONITORING OF EQUIPMENT PERFORMANCE			
SITE PERSONNEL/PROCESSES			
• CONTROL OF WORK			
-COORDINATION & COMMUNICATION			
-PLANNING AND SCHEDULING			
-CONDUCT OF WORK			
• PROCEDURE ADHERENCE			
• ORGANIZATION COMMUNICATION AND COOPERATION			
• PROCEDURE AND WORK DOCUMENT ADEQUACY			
• S.T.A.R. UTILIZATION			
• OPERATIONS SUPPORT			

[1] For any "NO", provide additional detail under "issues" Att. 12-4 sheet 2 of 2.

PLANT MANAGEMENT OVERSIGHT TEAM ASSESSMENT CHECKLIST
_____ ASSESSMENT HOLD POINT

SUMMARY OF OVERSIGHT ACTIVITY CONDUCTED (Support documentation may be attached as needed): _____

_____
_____
_____
_____
_____
_____

ISSUES: _____

_____
_____
_____
_____

CONCLUSION: _____

_____
_____
_____
_____

TEAM MEMBERS: _____

_____
_____
_____
_____

_____   _____
SIGNATURE   DATE