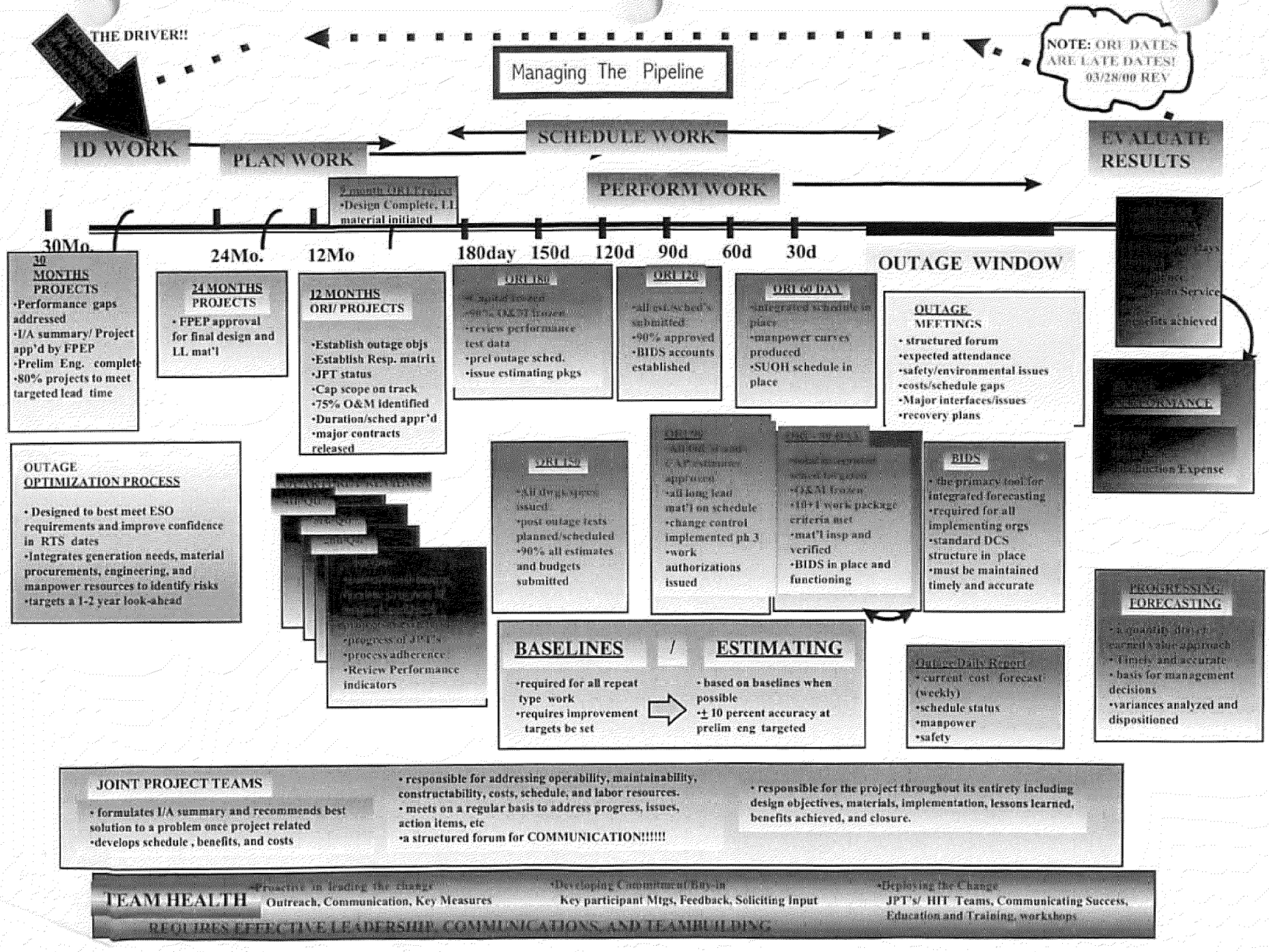
KIF 353 KIF COAL YARD RUNOFF POND PIPING UPGRADE

PROJECT FILE

TAB	TAB CONTENTS DESCRIPTION
Project Overview	Project Scope, Executive Summary
1	JPT Members with Addresses and Telephone Numbers/Project Checklist
2	Project Performance Reports
3	Schedules, Budget/Cost Data, Spendplan
4	Meeting Minutes, Action Items, Coorespondence, Miscellaneous
5	PAB and Capital Justification Process Forms
6	Cost Estimates, CERs, RFPs
7	Work Authorization Memos, Project Authorization Forms
8	Requisitions, Contracts
9	PDL
10	Installation Specs, Startup and O & M Procedures
11	EDR, Permits
12	I/A Summary
13	Turnover Documents, Punchlist
14	Closure Notices


THE DRIVER!!
Managing The Pipeline
NOTE: ORI DATES ARE LATE DATES! 03/28/00 REV
ID WORK
PLAN WORK
SCHEDULE WORK
PERFORM WORK
EVALUATE RESULTS
30Mo.
24Mo.
12Mo
180day
150d
120d
90d
60d
30d
OUTAGE WINDOW
3 month ORI Project
•Design Complete, LL material initiated
30 MONTHS PROJECTS
•Performance gaps addressed
•I/A summary/ Project app'd by FPEP
•Prelim Eng. complete
•80% projects to meet targeted lead time
24 MONTHS PROJECTS
• FPEP approval for final design and LL mat'l
12 MONTHS ORI/ PROJECTS
•Establish outage objs
•Establish Resp. matrix
•JPT status
•Cap scope on track
•75% O&M identified
•Duration/sched appr'd
•major contracts released
ORI 180
•review performance test data
•prel outage sched.
•issue estimating pkgs
ORI 120
•all est./sched's submitted
•90% approved
•BIDS accounts established
ORI 60 DAY
•integrated schedule in place
•manpower curves produced
•SUOH schedule in place
OUTAGE MEETINGS
• structured forum
•expected attendance
•safety/environmental issues
•costs/schedule gaps
•Major interfaces/issues
•recovery plans
OUTAGE OPTIMIZATION PROCESS
• Designed to best meet ESO requirements and improve confidence in RTS dates
•Integrates generation needs, material procurements, engineering, and manpower resources to identify risks
•targets a 1-2 year look-ahead
ORI ESP
•All dwgs/specs issued
•post outage tests planned/scheduled
•90% all estimates and budgets submitted
•progress of JPT's
•process adherence
•Review Performance indicators
•all long lead mat'l on schedule
•change control implemented ph 3
•work authorizations issued
•I&A Nl frozen
•10+1 work package criteria met
•mat'l insp and verified
•BIDS in place and functioning
BIDS
• the primary tool for integrated forecasting
•required for all implementing orgs
•standard DCS structure in place
•must be maintained timely and accurate
BASELINES / ESTIMATING
•required for all repeat type work
•requires improvement targets be set
• based on baselines when possible
•± 10 percent accuracy at prelim eng targeted
Outage Daily Report
• current cost forecast (weekly)
•schedule status
•manpower
•safety
PROGRESSING/ FORECASTING
• Timely and accurate
• basis for management decisions
•variances analyzed and dispositioned
JOINT PROJECT TEAMS
• formulates I/A summary and recommends best solution to a problem once project related
•develops schedule , benefits, and costs
• responsible for addressing operability, maintainability, constructability, costs, schedule, and labor resources.
• meets on a regular basis to address progress, issues, action items, etc
•a structured forum for COMMUNICATION!!!!!!
• responsible for the project throughout its entirety including design objectives, materials, implementation, lessons learned, benefits achieved, and closure.
TEAM HEALTH
•Proactive in leading the change
Outreach, Communication, Key Measures
•Developing Commitment/ Buy-in
Key participant Mtgs, Feedback, Soliciting Input
•Deploying the Change
JPT's/ HIT Teams, Communicating Success, Education and Training, workshops
REQUIRES EFFECTIVE LEADERSHIP, COMMUNICATIONS, AND TEAMBUILDING

FOSSIL POWER GROUP	LOCATION FOSSIL POWER GROUP	PROCEDURE NUMBER BS/BP/PP/ALL/1.2
	TITLE PROJECTS PROCESS	REV 0 ISSUE DATE: 03/22/2000 PAGE 1 OF 43

Users: All Fossil Power Group

W L Elliott

Approved by

March 22, 2000
Date

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REVISION LOG

REVISION DATE	PAGES AFFECTED	DESCRIPTION OF CHANGE
03/22/2000	All	This new process incorporates all project activities and replaces the following process/procedures: BS/BP/BPP/ALL/1.1 - "Business Planning Pipeline Process" TS/PROJ/JPTP/ALL/1.0 - "Joint Project Team Process" TS/PROJ/APPR/ALL/1.0 - "Project Approval process" TS/PROJ/SCHD/ALL/1.0 - "Schedule Tracking for Projects Procedure" TS/PROJ/CLOS/ALL/1.0 - "Project Closure Process"

REVISION DATE	PAGES AFFECTED	DESCRIPTION OF CHANGE

1.0 PROCESS DESCRIPTION

The purpose of this process is to ensure that identified problems, opportunities for improvements, unfavorable trends, or events are thoroughly investigated; that optimal solutions are developed in a timely manner and placed on the planning horizon for efficient resource planning and cash flow management; and that projects identified as solutions are properly scoped, estimated, scheduled, implemented and validated.

2.0 OBJECTIVE

The objective of this process is to provide a standardized method for developing and implementing solutions for problems, opportunities, trends, and events.

3.0 EVALUATION CRITERIA

There are six indicators associated with this process;

3.1 Process indicator P1 - project approved by the Fossil Project Evaluation Panel 36 months or more prior to the scheduled start of implementation.

3.2 Process indicator P2 - project authorized for Final Design and Long-Lead Procurement (phase 2) 24 months or more prior to scheduled start of implementation.

3.3 Process indicator P3 - project design completed and long-lead procurements initiated 9 months or more prior to the scheduled start of implementation.

3.4 Process indicator P4 - project authorized for Implementation (phase 3) 120 days or more prior to scheduled start of implementation.

3.5 Process indicator P5 - project closed within 90 days of return-to-service following implementation.

3.6 Quality indicator Q1 - project implemented on schedule, on budget, and achieved promised benefits.

4.0 REFERENCES

Business Planning Process (BS/BP/BPP/ALL/1.0)
Change Management Procedure for Maintenance/Modification Work (TS/ENG/CNFG/ALL/4.1)
Configuration (Drawing and Label) Control Procedure (TS/ENG/CNFG/ALL/4.4)
Drawing Issue and Distribution Procedure (TS/ENG/OPRS/ENGR/3.8)
Project Baselining/Improvement Process(TS/MODS/PBIP/ALL/1.0)
Quality Improvement Tools and Techniques Reference Manual

4.1 DEFINITIONS

4.1.1 Business Unit: Each Fossil Power Group (FPG) organization is a business unit. For this process, the smallest business unit for fossil operations is each plant and the smallest business unit for other FPG organizations is each major organizational division (Fuel Supply and Engineering Services, Business Services, etc.).

4.1.2 Support Organization: For this process, a support organization is any business unit supplying expertise or resources to another business unit.

4.1.3 Project: A work activity involving a new installation, replacement, repair, upgrade, or refurbishment of equipment or material that is not performed on a cyclic, repetitive basis. A "project" can be either capital or O&M.

a. Replacement of a retirement unit (component) is capital and is a project.
b. O&M activities that are needed to maintain the performance capability of an asset are NOT considered projects.

4.1.4 Project "On-track" Limits:

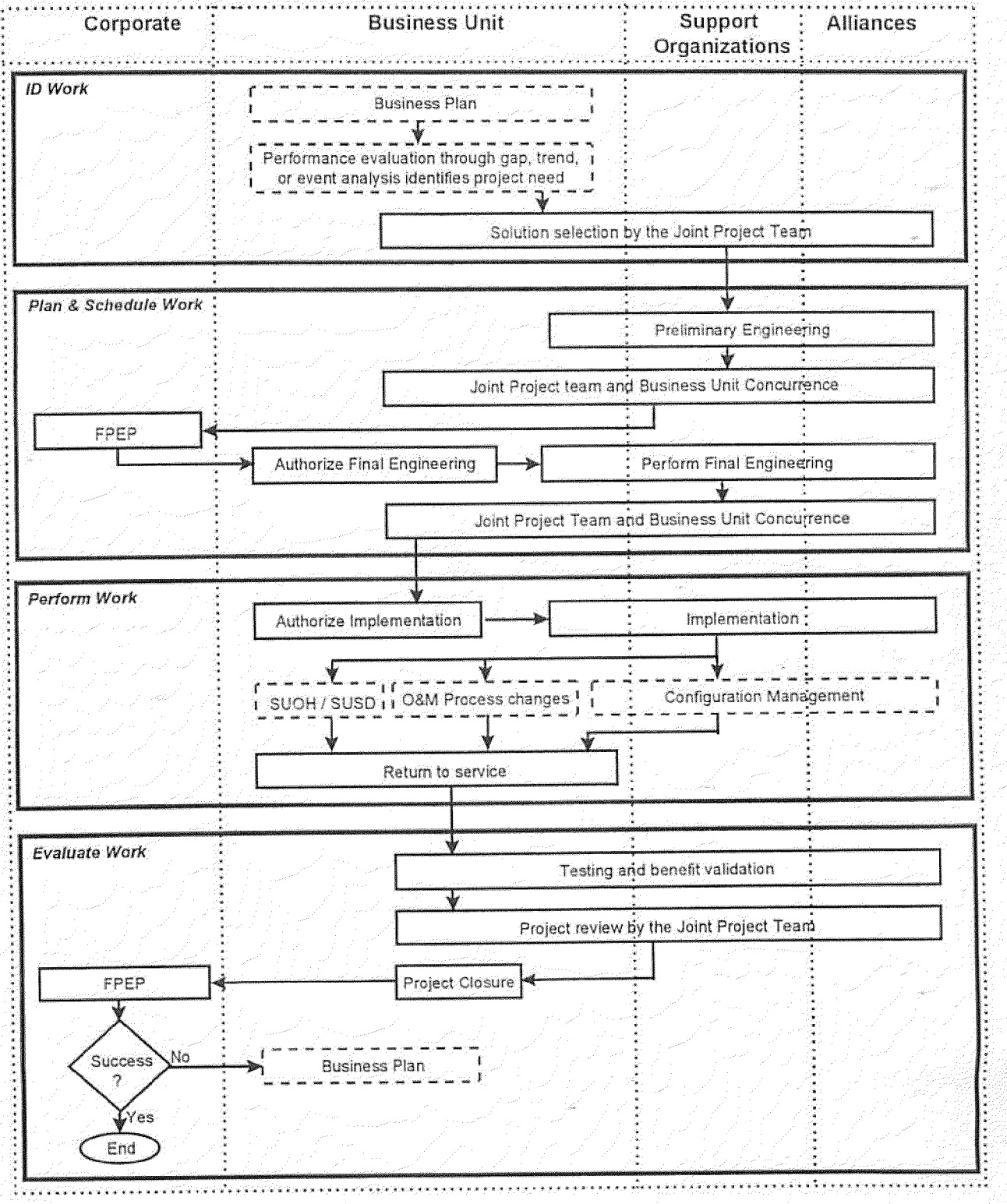
a. Budget - The FY forecast for the project is within $100,000 of the approved FY budget.
b. Budget - The project total forecast is within $100,000 of the approved project budget.
c. Schedule - The schedule for completion of the implementation (phase 3) is not impacted by other individual activity schedule changes.
d. Scope - No additions to or deletions from the scope defined at the initial (or current if the project has had revisions approved) FPEP project approval. Refinements to the scope or identification of unknowns from earlier approvals are not considered scope changes.
e. Benefits - No reduction in the project benefits defined at the initial FPEP project approval.

4.1.5 Underrun - Expenditures less than approved budget for a project (within a fiscal year) where the complete approved scope is performed. Underruns are obtained through improved performance or cost reductions for the approved scope.

Expenditures less than the approved budget for a project (within a fiscal year) that are obtained through schedule delays, scope reductions, project deferrals, or project cancellations are NOT considered underruns.

5.0 FLOW CHART - PROJECTS PROCESS

5.1 MACRO



5.0 FLOW CHART - PROJECTS PROCESS

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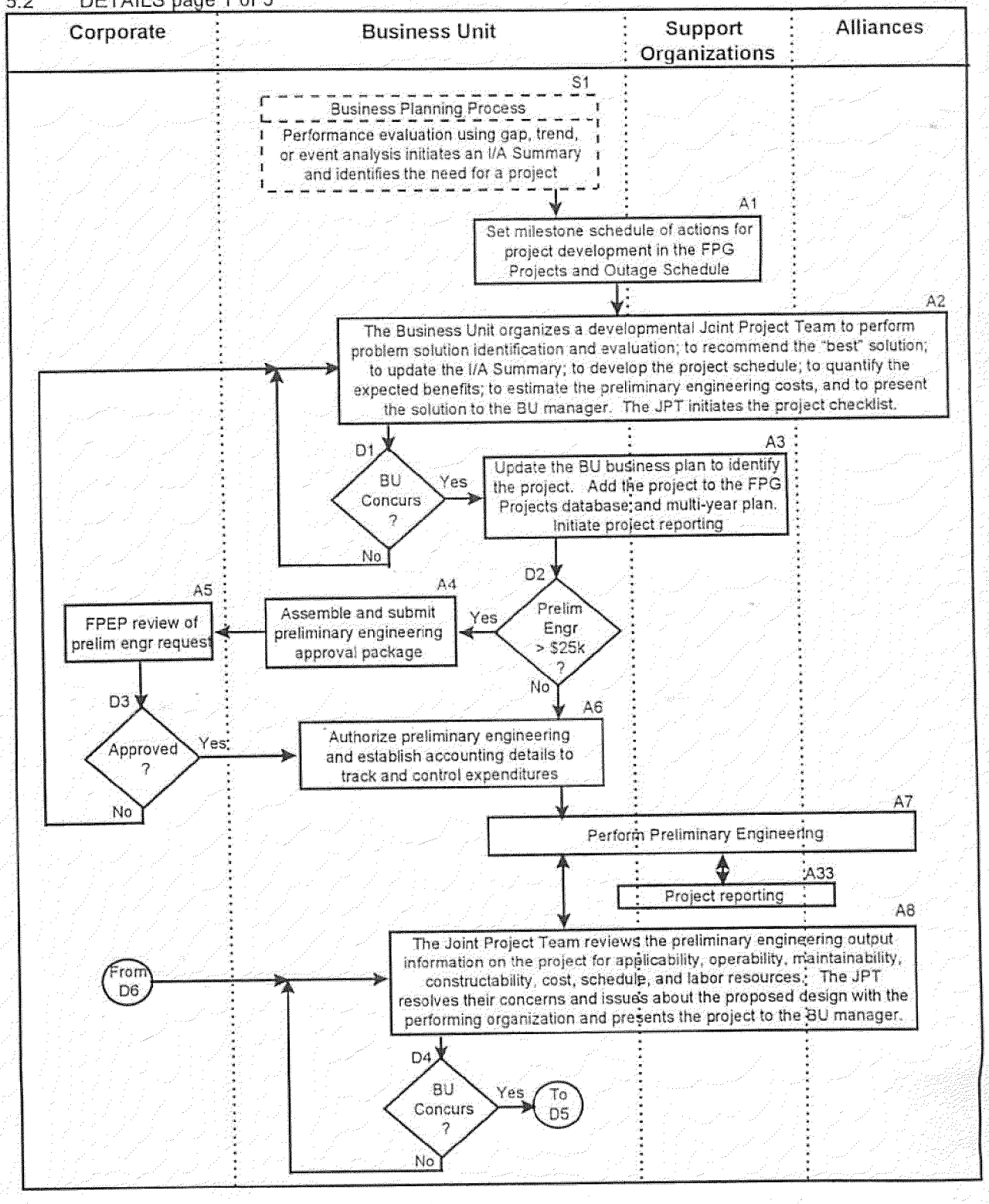

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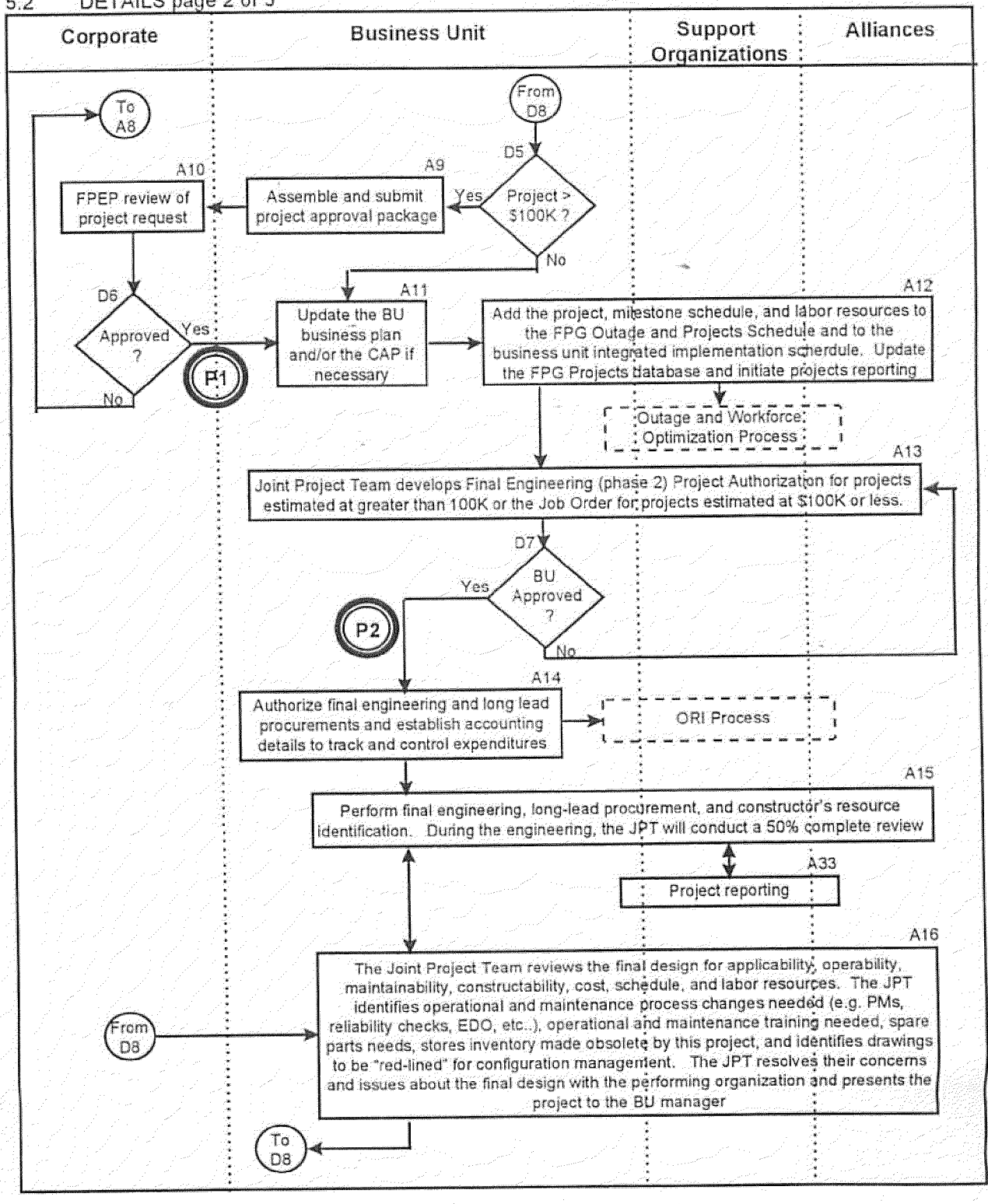

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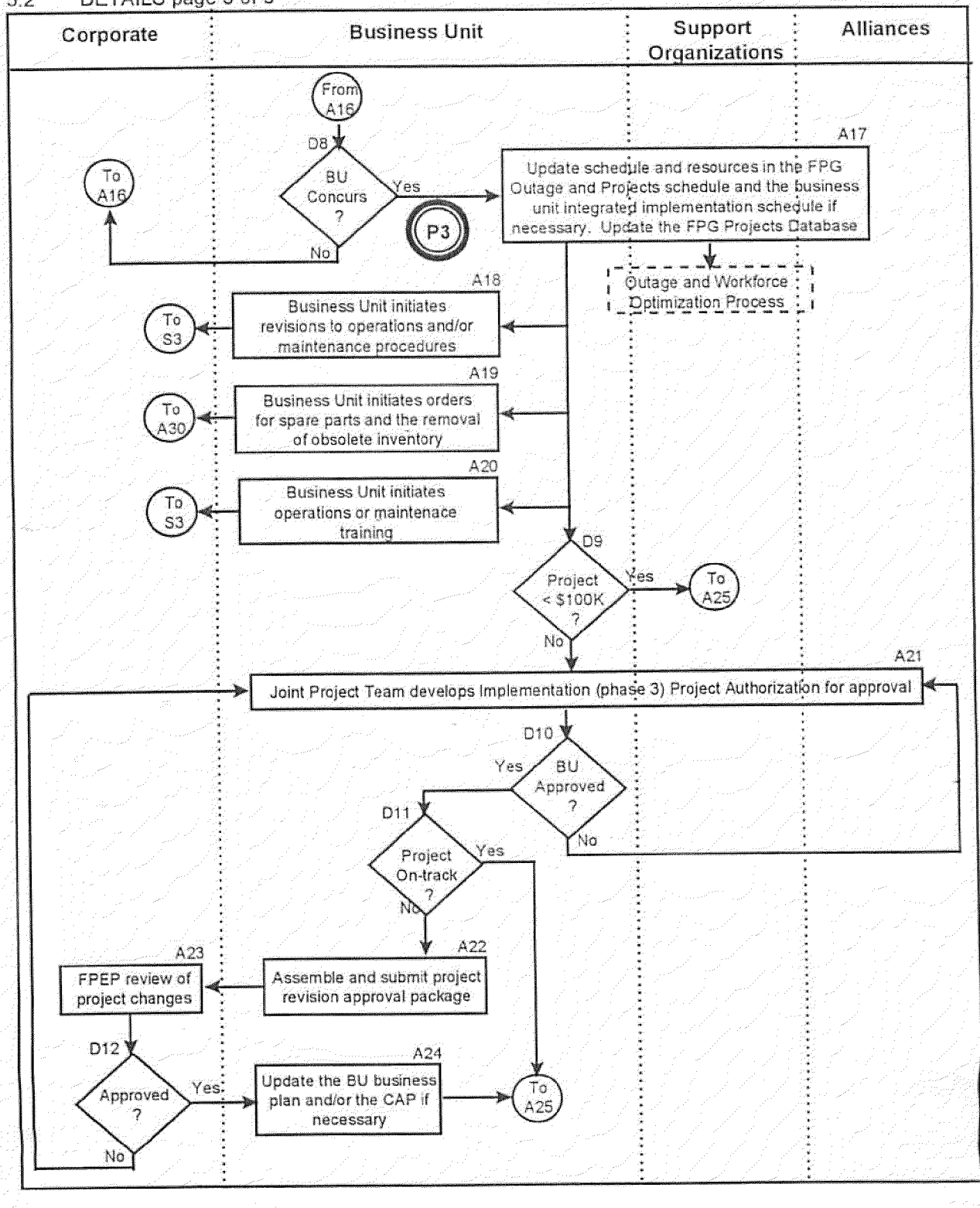

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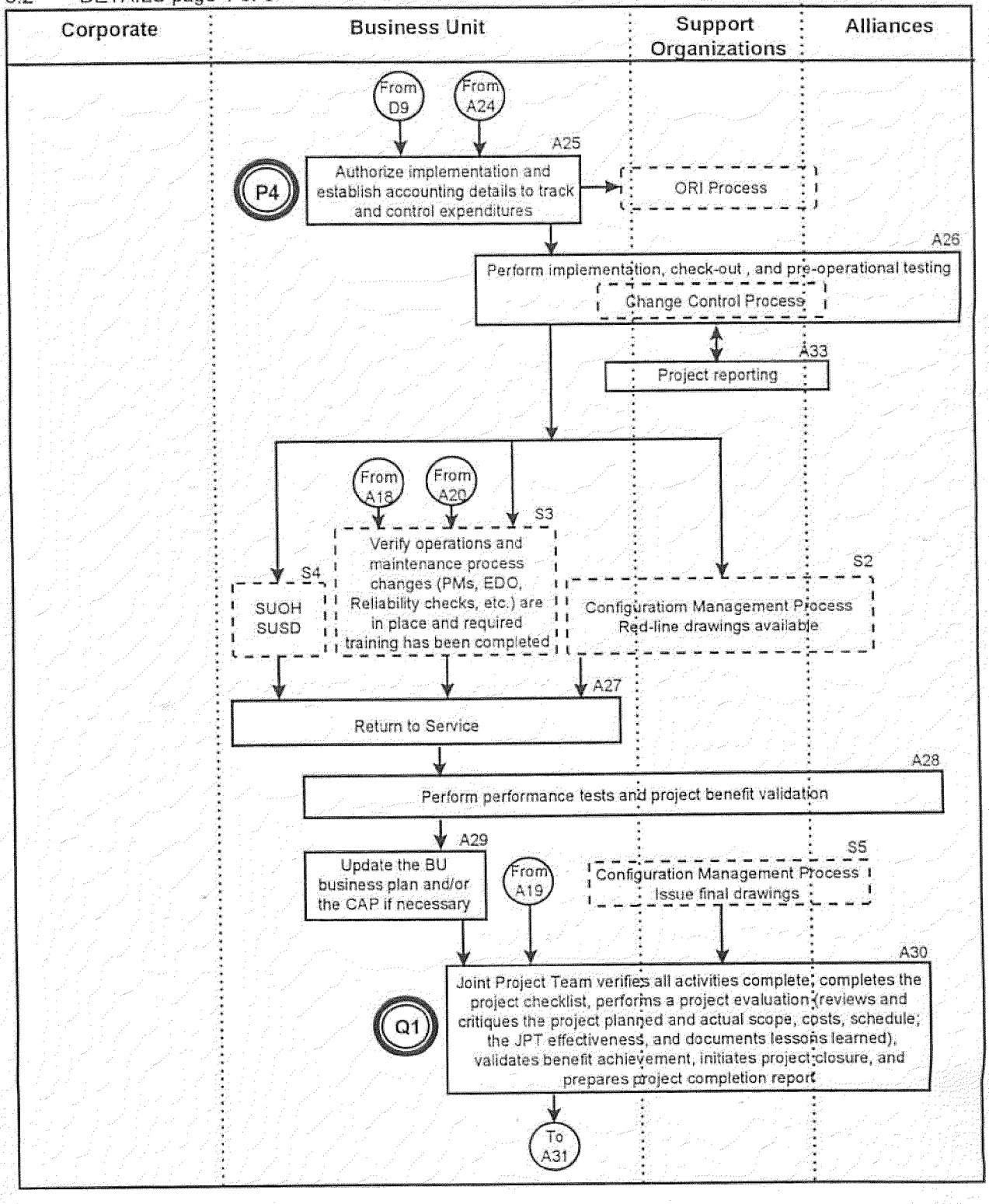

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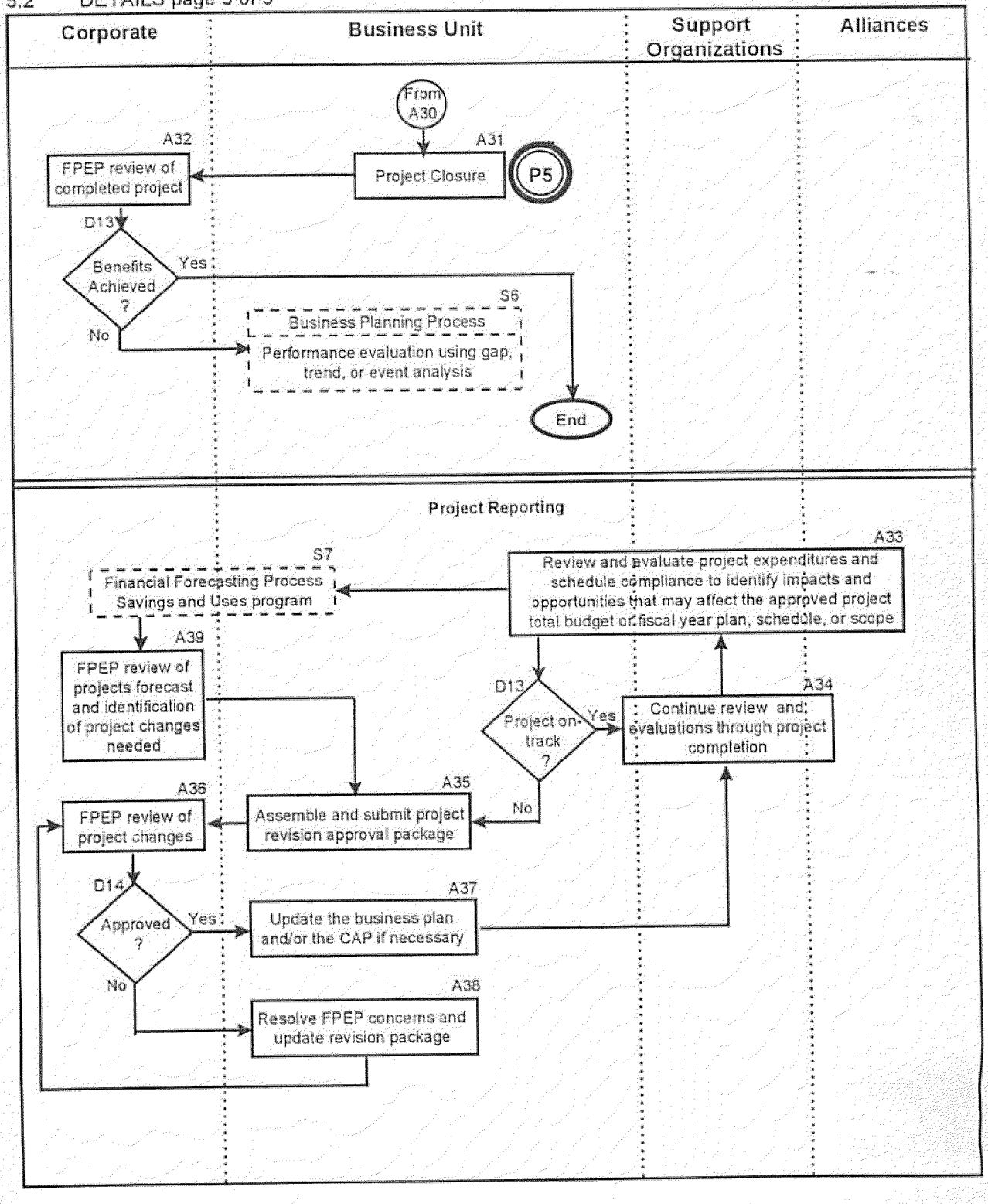

6.0 PROCEDURE

The performance of problem identification, analysis, and solution development is the responsibility of the affected business unit. The business unit is responsible for developing an I/A Summary to document and communicate the evaluations and analysis performed. For I/A summaries that result in a project type solution, the business unit will establish a Joint Project Team (JPT) and hand off the I/A summary to the JPT for completion and project development..

FPG management may assign other organizations the responsibility for evaluations of items with potential fleet impacts. That organization will be responsible for completing the process through the initial project approval (Decision D6) by the Fossil Project Evaluation Panel (FPEP) and for including representatives of the affected plants on the Joint Project Team (JPT).

The activities through business unit concurrence (Decision D1) of an I/A Summary development are to be charged to O&M. The work done by the business unit will be charged to a business unit O&M account. Work done by a supporting organization will be charged to an O&M account of the supporting organization. Support requested by the business unit from organizations or individuals without O&M funding will be charged to the responsible business unit's O&M account. The costs for these activities on a potential project should be collected to allow transfer of the costs to the project when it is approved.

6.1 Project Identification - Activities S1, A1, A2, A3, and Decision D1

6.1.1 Activity S1

Through various evaluation processes, the business unit will identify activities necessary to address gaps, opportunities, trends, and events. The business unit will initiate the I/A Summary (through step 3 and some solution identification in step 4) and identify those items for which the solution is expected to be a project.

6.1.2 Activity A1

For generating units, Production Support assumes primary responsibility for the project at this point to ensure consistency of approach.

The business unit will cause a summary schedule for project development activities to be added to the FPG Master Project and Outage Schedule (by the TSS Project Control specialist for the business unit). This schedule will cover the activities beginning with the establishment of the Joint Project Team (JPT-Activity A2) through the FPEP approval (Decision D6) of the project to be implemented.

6.1.3 Activity A2

The business unit shall initiate a developmental JPT and designate the team leader. The JPT initiates the Project Checklist (Attachment 9.1) and completes the project identification by performing the activities identified in section 7.1.

The JPT will present the project development package to the business unit manager to gain concurrence for proceeding with the project development.

6.1.4 Decision D1

The business unit manager concurs with the proposed project.
If YES, proceed to activity A3. If NO, return to activity A2 and initiate revisions to the project to address the business unit manager's concerns.

6.1.5 Activity A3

After the business unit manager concurs, the JPT leader will cause the proposed project to be added to the business unit's business plan and entered into the FPG projects database.

The JPT leader will submit to FPG Business Services, Resource Planning, the I/A Summary and preliminary project schedule.

Resource Planning will identify the proposed project in the FPG multi-year project plan.

6.2 Preliminary Engineering Authorization - Decisions D2, D3 , and Activities A4, A5, and A6.

6.2.1 Decision D2

If the estimate for performing the Preliminary Engineering is $25,000 or greater, concurrence must be obtained from the Fossil Project Evaluation Panel (FPEP) before proceeding with the development of the project.

If YES, GO to activity A4. If NO, proceed to activity A6.

The cost of the Preliminary Engineering activities are to be carried by the business unit except for those costs incurred by any individuals in support organization who are already funded as O&M. These costs should be collected in a manner to support incorporation into the project when it is submitted to FPEP for approval.

6.2.2 Activity A4

The business unit will compile a Preliminary Engineering approval package consisting of:

a. A completed Project Authorization (similar to Attachment 9.2 printed from the FPG Projects Database) requesting approval to conduct the Study (project phase 1).
b. The I/A Summary (to date) for the project.
c. The scope of work to be performed as the Preliminary Engineering.
d. The Preliminary Engineering cost estimate and schedule.
e. An identification of how the business unit proposes the request be funded.

The business unit will submit the Preliminary Engineering Request to the FPEP.

6.2.3 Activity A5

The FPEP will review the preliminary engineering request by performing the activities identified in Section 8.1.

6.2.4 Decision D3

FPEP approves the preliminary engineering request, schedule, and funding.

If YES, proceed to activity A6. If NO, return to activity A2 and initiate revisions to the preliminary engineering request to address concerns identified by FPEP.

6.2.5 Activity A6

The business unit will authorize the performing organization to proceed with the preliminary engineering. The business unit will develop the work breakdown structure and set up account numbers to facilitate tracking and evaluation of the project activities performance

6.3 Preliminary Engineering - Activities A7, A8 and Decision D4.

6.3.1 Activity A7

The organization assigned to perform the preliminary engineering will perform the work and deliver a project package to the JPT that contains the following deliverables. While performing the preliminary design, the performing organization will obtain input as needed from the constructing, operating, and maintaining organizations.

a. A preliminary engineering design of the project that includes:
   - detailed scope of the final design (phase 2) activities
   - conceptual scope of the implementation (phase 3) activities
   - identification of long-lead procurements
   - completion of an environmental review checklist
   - identification of required permitting
   - identification of the benefits expected from the proposed design
   - parameters to be measured or tested to verify the benefits
   - identification of the implementation resources (manpower by craft) estimated to perform the work

b. A summary level project schedule identifying major project activities and milestones.
c. A total project cost estimate.
d. A Project Justification (PJ) form.

The engineering organization will be responsible for entering all pertinent data into the Project Justification database to allow publication of the PJ form.

The completed project package will be delivered to the JPT for review.

The engineering organization will be responsible resolving concerns raised by the JPT during their review in Activity A8.

6.3.2 Activity A8

The JPT will review the Preliminary Engineering project package by performing the activities identified in Section 7.2. The JPT will concur with the design package or will identify any concerns with the design package and work with the designing organization to resolve those concerns.

Activities A7 and A8 will be repeated as necessary to complete the design package.

The JPT will present the project package to the business unit manager to obtain concurrence.

6.3.3 **Decision D4**

The business unit manager reviews the project package and concurs with the results.

If YES, proceed to decision D5. If NO, return to activity A8 and resolve the business unit manager's concerns.

6.4 **Project Approval - Decisions D5, D6, and Activities A9, A10, A11, and A12.**

6.4.1 **Decision D5**

Total project costs will exceed $100,000

If YES, proceed to activity A9. If NO, proceed to activity A12.

6.4.2 **Activity A9**

The business unit will assemble a project approval package consisting of the following items

a. The Project Justification form
b. The I/A Summary
c. The project scope
d. The project milestone schedule
e. The project cost estimate
f. The project checklist

The business unit will submit the project approval package to the FPEP for approval.

6.4.3 **Activity A10**

The FPEP will review project packages submitted by business units by performing the activities in Section 8.2.

6.4.4 **Decision D6**

The project is approved.

If YES, GO to activity A12. If NO, return to activity A8 and initiate revisions to the project package to address concerns identified by FPEP and/or the TVA Project Review Panel.

Process Indicator P1 - Projects are to be initially approved by the FPEP at least 36 months prior to the identified implementation start date. Monthly, the FPG Business Services (Business Planning) will identify the number of projects approved and determine and report to the FPEP the percentage of projects (in total and by business unit) presented that month that meet this criteria. The expected level of performance for each business unit is that at least 75% of the projects presented are approved at least 36 months prior to the proposed implementation date. FPG Business Services, Resource Planning will identify approved projects in the FPG multi-year project plan.

6.4.5 Activity A11

After FPEP approval of the project, the business unit will update the business plan.

If a project affects performance indicators, the indicators will be updated with reference to the project as the basis for the change. If the activity cost changes the business unit resource plans, the resource plans will be updated.

For projects, the business unit will include in their business plan a multi-year checkbook that lists the approved projects. The business unit will be responsible for maintaining the business plan checkbook in agreement with the FPEP project approval actions. FPG Business Services Resource Planning will maintain the FPG multi-year checkbook.

For projects less than $100,000, the business unit will include in their business plan a multi-year checkbook that lists the approved projects broken down by categories (capital job orders or O&M projects) and the project cost by fiscal year. The business unit will be responsible for maintaining the total fiscal year expenditures for capital job orders and O&M projects within the FPG established limits. As changes are made within fiscal years, the business unit will update the listing.

The business unit will update the Corrective Action Program (if applicable).

6.4.6 Activity A12

Approved project (from either Decision D5 or D6) milestone activities will be added to the FPG Project and Outage Schedule (by TSS Project Control Specialists) and the site's implementation schedule (by the site scheduling organization). The implementation activities will have the identified manpower resources added to the schedule.

The resource loaded Project and Outage Schedule is used in the Outage and Workforce Optimization Process.

6.5 Final Engineering (*phase 2*) Authorization - Activities A13, A14, and Decision D7

6.5.1 Activity A13

The JPT will perform the activities of Section 7.3 to develop the request for authorization (PA) to perform Final Engineering (phase 2) or to develop a Job Order for projects estimated at $100,000 or less.

The JPT will submit the request to the business unit manager for approval.

6.5.2 Decision D7

The business unit manager reviews the Final Engineering (phase 2) PA or the Job Order and authorizes the work by signature in the Plant Manager's blank.

If YES, proceed to activity A14. If NO, return to activity A13 for the JPT to revise the package to address the business unit manager's concerns.

When the Final Engineering is approved, the business unit will immediately notify FPG Business Services (Business Planning) of this approval with a copy of the signed PA.

Process Indicator P2 - Projects are to be approved for Final Engineering (phase 2) at least 24 months prior to the identified implementation start date. Monthly, the FPG Business Services (Business Planning) will identify the number of projects approved for Final Engineering and report to the FPEP the percentage of projects (in total and by business unit) approved that month that meet this criteria. The expected level of performance for each business unit is that at least 80% of projects have Final Engineering approval at least 24 months prior to the proposed implementation date.

6.5.3 Activity A14

The business unit will authorize the performing organization to proceed with the Final Engineering and long-lead procurements. The business unit will develop the work breakdown structure and set up account numbers to facilitate tracking and evaluation of the project activities performance

For projects where the implementation phase will be performed during a planned outage, this activity is an input point to the Outage Readiness Index (ORI) process.

6.6 Final Engineering Performance - Activities A15, A33, A17, A18, A19, A20, A21, and Decision D8.

Once the Final Engineering (Activity A15) is initiated, project reporting (Activity A16) and related downstream activities (forecasting and budget change approvals) will be performed concurrently.

During the performance of the Final Engineering (Activity A15), the performing organization will pause at a point where the design is approximately 50% complete (in accordance with engineering processes) and contact the JPT leader. The JPT leader will determine if the 50% design review should be conducted utilizing the following criteria:

a. *The total cost of the project is greater than $2,500,000*
b. *The engineering is being done outside TVA (either by an engineering partner or under contract)*
c. *No projects like or similar have been done within the TVA fossil fleet*
d. *Any other project the JPT leader deems appropriate*

If the 50% design review is to be conducted, the JPT will perform the activities of Section 7.4. If the 50% design review is not to be conducted, the JPT leader will so note in the project checklist for the project.

Concerns raised by the JPT during the 50% review must be resolved before the Final Engineering can be completed.

6.6.1 Activity A15

The organization assigned responsibility shall perform the Final Engineering, initiate long-lead procurement, and obtain input from the other organizations involved with the project (either directly or through the JPT). The deliverables from the final design phase are:

a. A description of the scope of the project.
b. A Project Drawing List (PDL) and a complete package of detail design drawings.
c. Long lead materials/ major procurement contracts issued. Included with the contracts are any needed fabrication quality control plans.
d. Material lists
e. A completed Environmental Decision Record with evidence the requirements are included in the design and implementation.
f. Required permits are requested and obtained.
g. An updated project cost estimate based upon the completed detail design that has been coordinated with and agreed upon by the construction partner (or contractor).
h. An identification of the operational spare parts and materials needed to support the equipment to be installed by the project that has been coordinated with and agreed upon by the affected business unit.
i. Implementation (phase 3) detailed resource loaded schedule.
j. Updates of the I/A Summary (especially the solution description) to reflect any changes in scope, cost, schedule, or other data as a result of the completed design. Update the project economic analysis.

The completed project design package will be delivered to the JPT for review.

6.6.2 Activity A33

The responsible project control specialist will maintain the status of all active projects for the business unit. GO to Section 6.10 (activity A33) to identify and perform reporting related activities.

6.6.3 Activity A16

Following completion of the final design, the JPT will review the design and identify and address operational interfaces by performing the activities of Section 7.4

The JPT will review the Final Engineering project package and identify and address operational interfaces by performing the activities identified in Section 7.4. The JPT will concur with the design package or will identify any concerns with the design package and work with the designing organization to resolve those concerns.

Activities A15 and A16 will be repeated as necessary to complete the design package.

The JPT will present the project package to the business unit manager for approval.

6.6.4 Decision D8

The Business Unit Manager reviews and concurs with the final engineering project package.

If YES, proceed to activity A17. If NO, return to activity A16 for the JPT to resolve the business unit manager's concerns.

When the Final Engineering is accepted by the business unit manager , the JPT will cause the milestone for this activity to be shown complete in the FPG Projects and Outage Schedule.

Process Indicator P3 - Projects are to have the Final Engineering completed and Long Lead procurements initiated at least 9 months prior to the identified implementation start date. Monthly, the FPG Business Services (Business Planning) will identify the number of projects shown complete for the Final Engineering and report to the FPEP the percentage of projects (in total and by business unit) approved that month that meet this criteria. The expected level of performance for each business unit is that at least 85% of projects have phase 2 completed at least 9 months prior to the proposed implementation date.

6.6.5 Activity A17

The JPT will cause an update of the project schedule (and manpower resources) in the FPG Master Project Schedule and the plant unit integrated schedule. The JPT will cause an update of the FPG Projects Database for the project.

The resource loaded schedule information update is used in the Outage and Workforce Optimization Process.

6.6.6 Activity A18

The business unit will initiate the development or revision of the operational and/or maintenance procedures or processes identified by the JPT.

6.6.7 Activity A19

The business unit will initiate the actions necessary to remove parts and materials from stores that have identified as obsolete by the JPT. This activity may be charged to the project.

The business unit will initiate the orders for operational spare parts needed for the equipment installed by the project.

6.6.8 Activity A20

The business unit will initiate the operations and maintenance training identified by the JPT. This activity may be charged to the project.

6.7 Implementation (*phase 3*) Authorization - Activities A21, A22, A23, A24, A25, and Decisions D9, D10, D11 and D12.

6.7.1 Decision D9

The project cost is equal to or less than $100K.

If YES, GO to Activity A25. If NO, GO to Activity A21.

6.7.2 Activity A21

The JPT will develop the request for approval to perform the implementation (phase 3) by performing the activities in Section 7.3.

The JPT will submit the request to the business unit manager for approval.

6.7.3 Decision D10

The business unit manager reviews the Implementation (phase 3) PA and authorizes the work by signature in the Plant Manager's blank.

If YES, proceed to Decision D11. If NO, return Activity A21 for the JPT to address the business unit manager's concerns.

6.7.4 Decision D11

The business unit manager determines if the project is "On-track" for cost, schedule, scope, and benefits.

If YES, the business unit manager enters "Not required" in the FPEP signature blank and signs in the Business Unit Manager's blank and then proceeds to Activity A25.

When the Implementation is approved, the business unit will immediately notify FPG Business Services (Business Planning) of this approval with a copy of the signed PA.

If NO, GO to Activity A22.

6.7.5 Activity A22

The business unit will submit the project revision package developed by the JPT (Activity A21) to the FPEP secretary for FPEP review.

6.7.6 Activity A23

The FPEP will review "Off-track" project packages submitted by the business units by performing the activities in Section 8.3.

6.7.7 Decision D12

The project is approved.

If YES, the FPEP Secretary will notify the originating business unit. The business unit will proceed with Activity A24. If NO, the FPEP Secretary will return the project request to the originating business unit to address the concerns of the FPEP and/or the TVA Project Review Panel in activity A21.

6.7.8 Activity A24

Following the FPEP approval of requested changes to the project, the business unit will update the Business Plan and/or the Corrective Action program to reflect any changes to the

performance indicators or resource plans (multi-year checkbooks) caused by the project being "off-track".

6.7.9 Activity A25

The business unit will authorize the performing organization to proceed with the Implementation of the project. The business unit will develop the work breakdown structure and set up account numbers to facilitate tracking and evaluation of the project activities performance

For projects where the implementation phase will be performed during a planned outage, this activity is an input point to the Outage Readiness Index (ORI) process.

Process Indicator P4 - Projects are to be approved for Implementation (phase 3) at least 120 days prior to the identified implementation start date. Monthly, the FPG Business Services (Business Planning) will identify the number of projects approved for Implementation and report to the FPEP the percentage of projects (in total and by business unit) approved that month that meet this criteria. The expected level of performance for each business unit is that at least 95% of projects have phase 3 approval at least 120 days prior to the proposed implementation date.

6.8 Implementation Performance and Return-to-Service - Activities A26, A27, A28, S2, S3, S4, and A33.

Once the Implementation (Activity A26) is initiated, project reporting (Activity A33) and related downstream activities (forecasting and budget change approvals) will be performed concurrently.

6.8.1 Activity A26

The organization assigned responsibility shall perform the implementation, check-out, and pre-operational testing in accordance with the approved design.

Scope changes needed during the implementation phase will be identified, reviewed, and approved in accordance with TS/ENG/CNFG/ALL/4.1, "Change Management Procedure for Maintenance/Modification Work".

6.8.2 Activity A33

The responsible project control specialist will maintain the status of all active projects for the business unit. GO to activity A33 (Section 6.13) to identify and perform other reporting related activities.

6.8.3 Activity S2

In accordance with TS/ENG/CNFG/ALL/4.4, "Configuration (Drawing and Label) Control Procedure", the performing and engineering organizations will provide the red-line drawings previously identified by the JPT and place them in the Curator As-Built Library.

6.8.4 Activity S3

The business unit will verify the operations and maintenance process changes developed in Activity 18 have been issued.

The business unit will verify that the maintenance or operations training initiated in Activity 20 has been conducted.

6.8.5 Activity S4

The business unit will implement the appropriate operations process (from SUOH or SUSD) to prepare the affected equipment for a return to service.

6.8.6 Activity A27

The business unit will place the affected equipment in service.

6.8.7 Activity A28

The business unit will perform the performance tests necessary to prove the equipment affected by the project is capable of performing as expected. The business unit will take measurements and collect data to verify the claimed benefits for the project are achieved.

6.9 Project Closure - Activities A29, S5, A30, A31, A32, and Decision D13

6.9.1 Activity A29

Following the implementation, testing, and return to service, the business unit will update the Business Plan to reflect the completion of the project.

The business unit will update the Corrective Action Program (if applicable).

6.9.2 Activity S5

In accordance with TS/ENG/OPRS/ENGR/3.8, "Drawing Issue and Distribution Procedure", the engineering organization will issue the drawings of record affected by the project.

6.9.3 Activity A30

The JPT will evaluate the project and initiate project closure by performing the activities in Section 7.6.

6.9.4 Activity A31

The business unit manager will review the project closure package prepared by the JPT. The manager will complete the Project Completion Report by signature.

The business unit will notify Fixed Assets Accounting (FAA) of the project completion by forwarding a copy of the Completion Report to FAA.

The business unit manager will submit the entire project closure package to the FPEP

Process Indicator P5 - Projects are to be formally closed no more than 90 days following the return-to-service of the affected equipment or systems. Monthly, the FPG Business Services (Business Planning) will identify the number of projects closed and report to the FPEP the percentage of projects (in total and by business unit) closed that month that meet this criteria. The expected level of performance for each business unit is that at least 90% of projects are closed within 90 days following the return-to service date.

6.9.5 Activity A32

The FPEP will evaluate the project success by performing the activities in Section 8.4.

Quality Indicator Q1 - Completed projects are to be evaluated for compliance with budget, schedule, scope, and benefit projections using the Project Success Index (PSI) calculated in the Project Completion Report (Attachment 9.4). Monthly, the FPG Business Services (Business Planning) will identify the PSI for projects closed that month (in total and by business unit) and report to the FPEP. The expected level of performance is that 80% of the projects completed will score 3 or higher on the PSI.

6.9.6 Decision D13

The benefits claimed for the project were achieved.

If YES, no other action is required. If NO, the FPEP will direct the FPEP Secretary to notify the affected business unit of the need to address the failure to meet the project claimed benefits as a performance gap to be evaluated.

6.10 Projects Reporting - Activities A33, A34, A35, A36, A37, A38, A39, and Decisions D14 and D15.

Projects reporting is to begin once the business unit manager concurs (Decision D1) with the recommendation for a project by the JPT. Project cost and schedule compliance and scope control will be reported on a routine basis for the activities performed during Preliminary Engineering (Activity A7), Final Engineering (Activity A15), and Implementation (Activity A26). Additionally, all milestones that support of these activities, return to service, and project closure will be tracked for schedule compliance.

6.10.1 Activity A33

The TSS project control specialist (PCS) for the business unit has the responsibility for collecting, compiling, and initiating analysis of the project status and reporting to the JPT. Each organization involved in work on the project is required to provide input to the PCS. The report will be used to identify and document impacts or opportunities that affect the project cost, schedule, or scope (either for the fiscal year and/or the total project).

The individual project reports are to be submitted to the business unit Business Analyst Consultant as necessary to support the Financial Forecasting Process.

6.10.2 Decision D14

Continuously during the performance of project activities, the business unit manager will (with input from the PCS and JPT) determine that the project is "On-track" for cost and schedule compliance, and scope control.

If the project is "on-track", proceed to Activity A34. If the project is not "on-track", proceed to Activity A35.

6.10.3 Activity A34

The project review and reporting shall be continued through project closure, return to Activity A35 and continuously perform the reporting activity.

6.10.4 Activity A35

The business unit will assemble a project revision package containing the following information:

a. A project change summary (Attachment 9.3).
b. A revised PA form signed by the business unit manager
c. A revised PJ form

The business unit will submit the project revision package to the FPEP secretary for review by the FPEP within the following constraints:

- For projects approved for phase 2, if the activities will force the phase 2 budget and/or schedule outside the acceptable limits, the project must be submitted to FPEP before committing to the changes. This limitation is applicable only to the phase 2 activities. Identified changes for the phase 3 activities will be addressed during the JPT review of the design and the subsequent request for phase 3 approval.
- For projects approved for phase 3, if the activities will drive the project budget or schedule outside the acceptable limits, the project must be submitted to FPEP. If the increase for the project can be offset with underruns from other approved projects for the business unit, such that the plant's fiscal year(s) budget will not increase, the project (and the underunning projects) can be brought to FPEP after the affected equipment is returned to service.
- For projects approved for phase 3, if the activities will drive the project budget or schedule outside the acceptable limits, the project must be submitted to FPEP. If the project cost increase can NOT be offset with underruns from other approved projects for the business unit, the project must be brought to FPEP before expenditures exceed the approved budget.
- If the project completion schedule (and any associated outage schedule) is delayed during the implementation phase, the business unit must report the impact during the "morning call", obtain the concurrence of the appropriate FPG General Manager, and follow-up with a submittal to the FPEP for the next schedules FPEP meeting.

6.10.5 Activity A36

The FPEP will review "Off-track" project revision packages submitted by the business units by performing the activities in Section 8.3.

6.10.6 Decision D14

The project is approved.

If YES, the FPEP Secretary will notify the originating business unit of the approval. GO to Activity A37.

If NO, the FPEP Secretary will return the project request to the originating business unit to address the concerns of the FPEP and/or the TVA Project Review Panel. GO to Activity A38.

6.10.7 **Activity A37**

Following the FPEP approval of requested changes to the project, the business unit will update the Business Plan and/or the Corrective Action program to reflect any changes to the performance indicators or resource plans (multi-year checkbooks) caused by the project being "off-track". Return to Activity A34 and continue the project review and evaluation.

6.10.8 **Activity A38**

The business unit will address the concerns of the FPEP and/or the TVA Projects Review Board, revise the project revision package, and return the request to the FPEP Secretary. GO to Activity A36.

6.10.9 **Activity S7**

The business unit will utilize the monthly project reports provided by the PCS to develop input for the Savings and Uses program (Financial Forecasting process) and to provide a summary listing of all capital and all O&M projects with expenditures within the current fiscal year. The summary listing will be submitted to the FPEP Secretary for review by FPEP.

6.10.11 **Activity A39**

The FPEP will review the monthly forecast summaries by performing the activities in Section 8.5.

7.0 JOINT PROJECTS TEAM (JPT)

The mission of a Joint Project Team (JPT) is to ensure effective planning and implementation of projects.

It is the responsibility of the affected business unit to form a developmental JPT and appoint a JPT leader to complete the I/A Summary by developing project type solutions to problems. Subsequently, the JPT will bring multiple perspectives to the project for optimum decision making associated with the planning, design, constructability, maintainability, and operability of the project to be implemented.

A JPT should be comprised of individuals with the expertise necessary to carry out the JPT's assigned responsibilities. The membership in a particular JPT may change as the project moves through the process when differing abilities and expertise are needed. The roles and responsibilities of Fossil Engineering Services and the Modifications Partners for project activities are outlined in Attachments 10-1, 10-2, and 10.3.

7.1 Activity A9 - Solution Development

7.1.1 The JPT completes the solution development for the problem by performing the following activities:

a. The JPT identifies a number of possible solutions that will address and correct the identified root cause.
b. The JPT develops a conceptual project scope and benefit assumptions for each feasible solution.
c. The JPT gathers information regarding outage plans, cost of outage time, conceptual cost estimates for each solution, and the value of the expected benefits for each solution.
d. The JPT performs a cost/benefit analysis including a risk assessment on each of the possible solutions.
e. The JPT uses the cost/benefit analysis for each scope to rank the possible solutions. Utilizing this information, the JPT will identify the "best" solution for the problem.

7.1.2 The JPT will update the Improvement Activity (I/A) Summary by documenting the solutions considered and identifying the "best" solution. The I/A Summary will include the problem identification data, the problem definition and supporting data, the root cause analysis, the various solutions proposed, the cost and benefit assumptions made for each solution, the economic evaluation of each solution, the solution selected, and basis for that selection. The "best" solution will be called the "project" from this point.

7.1.3 The JPT will develop a schedule for implementation of the project with ties to outages as necessary.

7.1.4 The JPT will define the benefit assumptions and quantify the benefits for the project and include an identification of the indicator(s) that will be used to measure project benefit success. The indicator used to measure success should be the same indicator (or a more detailed subordinate indicator) as used to identify the problem that initiated the problem. This information will be added to the I/A Summary.

Project success indicators must be defined in a way that will allow measurement within 60 days of the return to service of the equipment affected or installed by the project

7.1.5 The JPT will estimate the cost for performing the Preliminary Engineering for the project. The JPT will also recommend the organization to perform the Preliminary Engineering.

Preliminary Engineering includes any special testing, evaluation, or analysis needed to support project development.

7.1.6 The JPT will compile a project development package for presentation to the business unit manager. This package will consist of the I/A Summary, the Preliminary Engineering cost estimate, and the project schedule.

7.2 Activity A14 - Preliminary Engineering Review

7.2.1 The JPT Leader will initiate a Project Checklist (Attachment 9.4). This checklist will be maintained and updated by the team leader as the project proceeds through the process and will be included in each and all packages developed for approvals.

7.2.2 The JPT will review the project package and address the following items:

a. Does the project scope address correcting the identified problem ?
b. Are the benefits identified for the project attainable and measurable ?
c. Can the equipment affected or installed by the project be operated and maintained ?
d. Can the project be constructed as designed ?
e. Is the cost estimate acceptable ?
f. Is the proposed schedule achievable and acceptable ?
g. Are the labor resources identified for implementation appropriate and obtainable ?

7.3 Phase 2, Phase 3, or Job Order Authorization Package

7.3.1 The JPT will review the approved project package to determine if the approved cost, schedule, and scope are still valid. If there are any changes to the project necessary, the JPT will perform the following activities.

a. Complete a project change summary (Attachment 9.3).
b. Revise (and denote the changes) the affected items in the current FPEP (or plant for under $100K projects) approved project approval package

7.3.2 For projects estimated to cost more than $100K, the JPT will utilize the FPG Projects Database to develop the Final Engineering (phase 2) or Implementation (phase 3) PA form.

If applicable, the JPT will attach the change summary and the revised project approval package to the Project Authorization (PA) form.

7.3.3 For projects estimated to cost $100K or less, the JPT will prepare a Job Order requesting approval for the project.

If applicable, the JPT will attach the change summary and the revised project approval package to the Job Order.

7.4 JPT 50% Design Review

7.4.1 For projects to be given the 50% review, the JPT will review the design in progress to address the following items:

a. Will the project correct the identified problem ?
b. Can the project be constructed as designed ?
c. Can the equipment affected or installed by the project be operated and maintained ?

7.4.2 The JPT will notify the engineering organization performing the work when they can resume work and identify any concerns or problems that must be addressed.

7.5 Review of completed Final Design

7.5.1 The JPT Leader will update the Project Checklist to document completion of the JPT review of the final design package for the project.

7.5.2 The JPT will review the final design package for applicability, operability, maintainability, constructability, cost, schedule, and labor resources by addressing the questions included in Section 7.2.2.

7.5.3 The JPT will identify any changes needed (revisions to existing processes or new processes) to the operational (reliability checks, EDOs, etc.) or maintenance (preventive, predictive, or periodic, etc.) processes as a result of implementing the project.

7.5.4 The JPT will identify and initiate arrangements for any operational or maintenance training needed as a result of implementing the project.

7.5.5 The JPT will review and ensure that sufficient operational spare parts (and quantities) for the equipment installed by the project have been identified and ordered by the engineering organization.

7.5.6 The JPT will identify the storeroom inventory parts and/or materials made obsolete by the project.

7.5.7 The JPT will update the project estimate as necessary to address the operational spares, the obsolete inventory, the operational or maintenance training, and other project support activities.

7.5.8 The JPT will identify the drawings to be provided as "red-line" drawings needed to support the return-to-service of the affected equipment.

7.6 Project Closure

Following the return-to-service of the equipment affected by a project, the JPT will meet to evaluate the project and initiate the closure of the project by performing the following tasks:

7.6.1 The JPT completes the Project Checklist.

7.6.2 The JPT completes the Project Completion Report (Attachment 9.4) to analyze and evaluate the project performance on budget, schedule, scope, and benefit attainment.

7.6.3 The JPT attaches the Project Checklist to the completion report. The JPT submits the package to the business unit manager for review and concurrence.

8.0 FOSSIL PROJECT EVALUATION PANEL (FPEP)

The mission of the Fossil Project Evaluation Panel (FPEP) is to review, evaluate, approve, and track projects implemented at or for fossil owned or controlled assets within established spending limits.

The FPEP consists of the following direct reports to the FPG VP and two plant managers who will serve for six month terms.

Vice President - Fuel Supply and Engineering Services
Vice President - New Generation and System Projects
General Manager - Business Services
General Manager - Failure Prevention
General Manager - Fossil Operations (East)
General Manager - Fossil Operations (West)
General Manager - Maintenance and Testing Services
General Manager - Methods and Processes
Plant Manager (Eastern Plants)
Plant Manager (Western Plants)

A quorum of six (6) of these individuals is required to conduct business. Designees may attend but cannot vote nor count toward the quorum.

The FPEP will schedule and conduct monthly meetings to carry out their responsibilities.

The FPEP will designate an FPEP Secretary to coordinate FPEP activities.

8.1 Activity A11 - Study Request Review

For studies estimated to exceed $25,000 in cost, the affected business unit will submit a study request to the FPEP for review (Section 6.5.2)

8.1.1 The FPEP will review the study request to determine if it should be performed and if done, determine if it should be performed on the schedule submitted.

8.1.2 For a study FPEP agrees should be performed, the FPEP will determine how the study will be funded. If available, the study will be funded by underuns within the responsible business unit. If underuns are not available within the responsible business unit, FPEP will determine if the study can be funded through underuns within other FPG business units or whether a request will be made to the TVA Projects Review Panel for the funding.

If a request for funding is to be made to the TVA Projects Review Panel, the FPEP secretary will develop a Project Justification package for submittal and initiate the request to that panel.

8.2 Activity A16 - Initial Project Review

8.2.1 The FPEP will review project packages submitted by the business units by executing the following responsibilities:

a. Evaluate the I/A Summary to concur that the best solution was chosen for implementation as the project and that the data supports the proposed project.

b. Evaluate the scope of the proposed project and ensure it addresses the problem.
c. Evaluate the cost and schedule of the proposed project to determine if it is acceptable.

8.2.2 The FPEP may agree with the package as presented, may approve the package with schedule changes, or may return the package to the originating organization for rework or cancellation.

8.2.3 For those projects the FPEP accepts, the panel will identify any spend plan changes necessary to maintain the multi-year spending plan for fossil within the established limitations.

The FPEP will direct the FPEP Secretary to notify any business unit affected by changes to the multi-year plan of those decisions and the impact.

Additionally, the FPEP will direct the FPEP secretary to present the project and any associated spend plan changes to the TVA Project Review Panel for approval.

The PJ developed during the preliminary design of the project will be marked for Business Unit approval in the CPJ database and forwarded to the TVA Projects Review Panel.

For emergency projects, the FPG Executive VP may authorize expenditures on the project prior to approval by the FPEP and the TVA Projects Review Panel.

8.3 Activity A21 - Review of "Off-track" Projects

8.3.1 The FPEP will review "Off-track" project packages submitted by the business units and execute the following responsibilities:
a. Evaluate the change in cost, schedule, scope, or benefits from the initial project approval to determine if the project should be continued.
b. Evaluate the revised scope of the proposed project and ensure it addresses the initiating problem.
c. Evaluate the revised cost or schedule of the proposed project.

8.3.2 The FPEP may agree with the package as presented, may approve the package with schedule changes, or may return the package to the originating organization for rework or cancellation.

8.3.3 For those project changes the FPEP accepts, the panel will identify any spend plan changes necessary to maintain the multi-year spending plan for fossil within the established limitations.

The FPEP will direct the FPEP Secretary to notify any business unit affected by changes to the multi-year plan of those decisions and the impact.

Additionally, the FPEP will direct the FPEP secretary to present the project and any associated spend plan changes to the TVA Project Review Panel for approval.
The revised PJ developed during the phase PA development or revision will be marked for Business Unit approval in the CPJ database and forwarded to the Review Panel.

8.4 Review of Completed Projects - Activity A48

8.4.1 The FPEP will review the completed project closure package and evaluate the success of the project for budget, schedule, scope, and benefit compliance.

8.4.2 The FPEP will direct the FPEP Secretary to include the project success information in the next quarterly Completed Projects Report submitted to the Project Review Board.

8.5 Monthly Review of Project Forecasts

The business units are required by the Financial Forecasting process to submit a monthly forecast for the fiscal year expenditures on all FPEP approved projects (capital or O&M).

8.5.1 The FPEP will review the forecasted project budgets (by cost classification, by project, by plant) and the total FPG forecast.

8.5.2 If the FPG forecast is adverse (i.e. exceeding the budget), the FPEP will identify any spend plan changes necessary to bring the FPG expected expenditures to within the approved budget for the year and to maintain the multi-year spending plan for FPG within the established limits.

The FPEP will direct the FPEP Secretary to notify any business unit affected by changes to the multi-year plan of those decisions and the impact.

Additionally, the FPEP will direct the FPEP secretary to present those projects required to the TVA Project Review Panel for approval.

Attachment 9.1
PROJECT CHECKLIST

PLANT_____ PCN_____

PROJECT NAME _____

PROJECT TEAM SPONSOR:_____ PROJECT TEAM LEADER:_____

TEAM MEMBERS: _____ _____ _____

_____ _____ _____

The Team Leader shall utilize this checklist to document completion of each action or deliverable by placing the date or "N/A" in the appropriate blanks. The signed checklist (to date) shall be included in all project submittals requesting approvals or authorizations and in the project report delivered to the Fossil Project Evaluation Panel following project closure.

ACTION OR DELIVERABLE DESCRIPTION		DATE COMPLETE
1.0	**Project Development**	
1.1	Root cause analysis completed	_____
1.2	Project team initiated, members assigned, and team leader designated	_____
1.3	"Best" solution identified	_____
1.4	Project benefits quantified and measurement indicator identified	_____
1.5	I/A Summary completed	_____
1.5	Project entered into the FPG Projects database and PCN obtained	_____
1.6	Project development schedule finalized and entered into the FPG Projects and Outage Schedule.	_____
1.7	Preliminary Engineering scope and cost estimate developed	_____
1.8	Preliminary engineering authorization package developed for presentation to the business unit manager	_____
1.9	Preliminary Engineering authorized (BU and FPEP, if required)	_____
1.10	Preliminary Engineering work authorization documents issued	_____
2.0	**Preliminary Engineering**	

Attachment 9.1
PROJECT CHECKLIST

2.1	Project objectives and design basis established	_____
2.2	Targeted improvement to total project cost and/or schedule selected in accordance with the Project Baselining/Improvement Process	_____
2.3	Perform walkdown to confirm actual configuration	_____
2.4	Project scope and detailed Final Engineering scope developed	_____
2.5	Long-lead procurements identified, costs included in estimate, and responsibilities assigned for each	_____
2.6	Project milestone schedule developed	_____
2.7	Identification of expected benefits from proposed design and parameters to be baselined and measured to validate claimed benefits	_____
2.8	Estimate of implementation resource (manpower by craft) needs	_____
2.9	Total project cost estimate developed	_____
2.10	Environmental review checklist complete	_____
2.11	All permitting identified and included in milestone schedule	_____
2.12	Project Justification form developed	_____
2.13	Joint Project Team review of preliminary engineering design for applicability, constructability, maintainability, and operability	_____
2.14	Project approval package assembled	_____
2.15	Project approved by business unit manager	_____
2.16	Project approved by FPEP	_____
2.17	Project schedule entered into the FPG milestone schedule and site integrated schedule and update FPG Projects Database	_____
2.18	Assemble and submit final engineering authorization package	_____
2.19	Final Engineering and procurement of Long Lead Material approved	_____
2.20	Final Engineering work authorization documents issued (memorandum and EMPAC work order).	_____

Attachment 9.1
PROJECT CHECKLIST

3.0 Final Engineering and Long Lead Procurement

3.1	Phase I package reviewed by JPT, and any updates agreed to by JPT prior to start of detailed design. Final scope of the project developed.	_____
3.2	Long-lead/major procurement contracts let and fabrication quality control plan implemented.	_____
3.3	Spare parts/obsolete material: Agreement reached with plant and parts ordered/removed from inventory.	_____
3.4	Material lists issued.	_____
3.5	Constructability/maintainability/operability review by project team complete.	_____
3.7	PDL issued to implementer.	_____
3.8	Project cost estimate updated based upon detailed design.	_____
3.9	Phase III Level 3/4 resource-loaded schedule.	_____
3.10	Prepared Environmental Decision Record received and utilized in work plan.	_____
3.11	Permits requested and obtained.	_____
3.12	Economic analysis updated, if required, utilizing latest estimates of costs and benefits.	_____
3.13	Project team concurs in staffing for field engineering and field technical support functions as defined in 10.1.	_____
3.14	Project team concurrence to proceed.	_____
3.15	Project team evaluates its performance and effectiveness.	_____
3.16	System tuning plan completed.	_____
3.17	Operations/maintenance training requirements determined.	_____
3.18	All PM's and operating procedures changes identified by JPT.	_____
3.19	System parameters to be baselined are finalized, and all post-outage testing identified.	_____
3.20	Startup plan complete.	_____

4.0 Implementation, Return-to-Service, and Project Closure

Attachment 9.1
PROJECT CHECKLIST

4.1	Plant manager approves proceeding with implementation.	_____
4.2	Implementation work authorization memorandum and project authorization issued to implementers (Partner, Power Service Shops, or Others).	_____
4.3	Environmental commitments implemented.	_____
4.4	Long-lead materials received.	_____
4.5	Project equipment received and set up.	_____
4.6	Project tools ordered and received.	_____
4.7	Work staging areas established.	_____
4.8	Lay-down areas established.	_____
4.9	Material staged.	_____
4.10	Nondestructive testing plan in place.	_____
4.11	Subcontracts in place.	_____
4.12	Quality control inspection holdpoints identified.	_____
4.13	Project CPM schedule integrated into outage schedule if applicable.	_____
4.14	Staffing plan, craft availability verified, craft orientation/training plans in place.	_____
4.15	Pre-outage plan in place and "on-schedule."	_____
4.16	Contingency plan in place.	_____
4.17	Emergency contacts identified.	_____
4.18	Restart/system test plan.	_____
4.19	Project turnover/punchlist established.	_____
4.20	Equipment labeled per Plant Labeling	_____
4.21	All project drawings are accurate and issued as "As-Constructed".	_____
4.22	Recommended as-built drawing files transferred to Production Engineering.	_____

Attachment 9.1
PROJECT CHECKLIST

4.23	Punchlist/post-tuning of systems complete.	_____
4.24	System testing completed.	_____
4.25	Project benefits measured and compared to plan.	_____
4.26	As-Constructed documentation and drawings completed by FES and issued.	_____
4.27	Project evaluation by Joint Project Team, applying lessons learned process.	_____
4.28	Root cause analysis on any performance indicator variances which are out of limits.	_____
4.29	Project Completion Notice to Production Manager, Support.	_____
4.30	Project documentation to Records Unit in Technical Support.	_____
4.31	Startup team established, startup plan reviewed.	_____
4.32	All PMs entered into plant EMPAC.	_____
4.33	All operating procedures updated.	_____

Attachment 9.2

FOSSIL POWER GROUP
PROJECT AUTHORIZATION SUMMARY

Capital Project ( ) or O&M Project ( ) Work Document Number: _____

Plant/Area: _____ Unit: _____

Project Name: _____

FPG Category: _____

CPJ Category: _____ New Phase ( ) or Revised Phase ( )

Approved Budget (Spend Plan)	0	0	0	0	0	0	0	0	0	0

REQUESTED APPROVAL FOR PHASE ___ COST SUMMARY ($000)

PROJECT PHASE ACTIVITY / SCHEDULE	Prior Years	2000	2001	2002	2003	2004	2005	2006	Future Years	Total Project
1-Study	0	0	0	0	0	0	0	0	0	0
2-Design/Long Lead Procurement	0	0	0	0	0	0	0	0	0	0
3-Implementation (incl Retirement)	0	0	0	0	0	0	0	0	0	0
Total Project (Requested Approval)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Project Benefit Summary

Net Present Value _____ Profitability Index _____

Estimate of detail items included in costs above:

Estimate for Long Lead procurement: _____

Estimate for Retirement/Removal:- _____

Explanation of Changes (Cost, Schedule, Scope, or Benefit revision)

PREVIOUS APPROVAL FOR PHASE ___ COST SUMMARY ($000)

PROJECT PHASE ACTIVITY	Prior Years	2000	2001	2002	2003	2004	2005	2006	Future Years	Total Project
1-Study	0	0	0	0	0	0	0	0	0	0
2-Design/Long Lead Procurement	0	0	0	0	0	0	0	0	0	0
3-Implementation	0	0	0	0	0	0	0	0	0	0
Total Project (Current Approval)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Project Benefit Summary

Net Present Value _____ Profitability Index _____

Estimate of detail items included in costs above:

Estimate for Long Lead procurement: _____

Estimate for Retirement/Removal: _____

_____ Joint Project Team Leader _____ Date

Plant Approval	FPEP Approval
_____ Plant Manager _____ Date	_____ FPEP Secretary _____ Date

Attachment 9.3
PROJECT CHANGE SUMMARY

Organization:_____

Project Name:_____ Project ID: _____

Location:_____

COST:

Original Project Cost : _____
Current Approved Project Cost : _____
Proposed Project Cost : _____

Explanation :

SCHEDULE:

Original In-Service Date : _____
Current Approved In-Service Date : _____
Proposed In-Service Date : _____

Explanation :

SCOPE:

Scope Changes from current approval:

Explanation :

BENEFITS:

Original Benefits : _____ _____ _____
Current Projected Benefits : _____ _____ _____
Proposed Benefits : _____ _____ _____

Explanation :

Recommend approval of changes _____ _____
JPT Leader Date

Plant Approval of Changes _____ _____
Plant Manager Date

Attachment 9.4

PROJECT COMPLETION REPORT

Organization: _____

Project Name: _____ **Project ID:** _____

Location: _____

COST:

Final Approved Project Cost : _____ Original Project Cost : _____
Actual Cost : _____
Explanation :

Rating Value: _____

Cost Performance Index (CPI)

Under Authorized Budget	5 pts
At Authorized Budget	3 pts
Over Authorized Budget	1 pt

SCHEDULE:

Final Approved In-Service Date : _____ Original In-Service Date : _____
Actual In-Service Date : _____
Explanation :

Rating Value: _____

Schedule Performance Index (SPI)

Earlier Than Approved Schedule	5 pts
On approved Schedule	3 pts
Later Than Approved Schedule	1 pt

SCOPE:

Scope Changes from original approval:

Explanation :

Rating Value: _____

Scope Churn

Less Than 10%	5 pts
Greater Than 10% Less Than 20%	3 pts
Greater Than 20%	1 pt

BENEFITS:

Original Benefits :	_____	_____	_____
Final Approved Benefits :	_____	_____	_____
Actual Benefits :	_____	_____	_____

Explanation :

Rating Value: _____

Benefit

Greater Than Expected	5pts
Equal To Expected	3pts
Less Than Expected	1pt

Calculated Project Success Rating (PSI)

PSI = 0.60 * [(.55 * CPI) + (.45 * SPI)] + 0.40 * [(.7 * Benefit) + (.3 * Churn)] = _____

Attachment 10.1
Preliminary Engineering Responsibilities

- Fixed scope (division of work (DOW) by discipline, project scope including demolition, detailed engineering scope, conceptual implementation)
- Joint Project Team (JPT) to include (as a minimum) Implementer(s), System Engineer (FES), Project Engineer, Plant (System Engineer, Operations, Procurement), and Project Control Specialist. All members to have a contributing role.
- Procurement required and Bill of Materials (long lead engineering, implementer, long lead implementer, spare parts)
- General arrangement drawings (equipment location/elevations/column lines, P&ID, mass and energy balances or process flow diagrams, block diagrams, typical foundations, steel modifications, location of underground utilities, equipment loading, motor lists, single lines, I/O list, schematics) (unissued documents)
- Environmental Decision Record (EDR) (or EA/EIS as appropriate)
- Marked up drawings/sketches
- Drawing list/sequential numbering scheme
- Detailed project schedule based on conceptual implementation (Primavera), (milestones for Phase 2 and 3 will be targeted upon FPEP approval at Phase 2)
- Testing/baselining, identify potential testing required/procedures
- Electrical load studies, and calculations required
- Design Basis
    - Design Criteria (i.e. applicable codes and standards, design life, redundancy, equipment ratings, max/min flow rates, pressure/temperature ratings, snow/wind/seismic loadings, temperatures for freeze protection, NEMA class)
    - System descriptions (electromechanical description of system and controls philosophy, air/water requirements, operating philosophy, required redundancy, fail modes, etc.)
    - O&M impacts
- List of outstanding issues for final design
- Determine existing plant configuration
- Demolition drawings
- Identify potential PM and/or Operation procedures etc. affected or new ones needed
- Typical examples of deliverables (drawings, preop documents, work packages)
- Project cost estimate (include escalation for future years as necessary) by Partner

Attachment 10.2
Fossil Engineering Services and Modifications Partners Functions – Projects

The purpose of this attachment is to clarify the general roles and responsibilities of Fossil Engineering Services and the Modifications Partners in regard to field engineering and field technical support on capital projects.

Modifications Partners are accountable for the functions on Attachment 10.2. It is their responsibility to provide personnel with knowledge and experience to perform these functions such that installation complies with the drawings and specifications. If any of these functions are to be performed by other than the Modifications Partners' personnel, assignments must be clearly documented.

Modifications Partners do not perform any "design engineering" service; i.e., service which requires a Professional Engineering (PE) license. When construction engineering as defined on Attachment 10.2 requires a PE, the Modifications Partners will subcontract to a licensed engineering firm or utilize a licensed affiliate company.

Fossil Engineering Services (FES) is accountable for design and project engineering. This includes the accountability for approving design changes and issuing all project drawings as "As Constructed" Drawings of Record. Please see Attachment 10.3 for a listing of the FES field engineering accountabilities on capital projects.

Attachment 10.2a
Modifications Partners Responsibilities – Projects

The modifications partners are responsible for performing or having performed the following functions related to the development and implementation of FPG projects:

- Participate on Joint Project Teams with design engineering, the plant, and other project participants during project development, preliminary engineering (phase 1 if applicable), final engineering (phase 2), and implementation (phase 3) to fully understand the project objectives and to maximize JPT effectiveness in terms of value engineering, long-lead procurement, constructability, and labor resource estimates, etc.
- Answer questions that do not affect design and obtain answers to field problems.
- Perform/assist with material take-off and "Bill of Materials."
- Assist FES in investigating/documenting existing conditions
- Assist in identifying cables, devices, etc., for removal or replacement
- Write construction test procedures.
- Identify value-engineering opportunities
- Review drawings for constructability and verify that the correct revision level is being used for implementation.
- Suggest material options for approval by engineering.
- Support ORI reviews
- Using project scope document, provide detailed work plans or packages for implementation.
- Initiate and track material procurements by partner and coordinate any suggested material changes.
- Perform receipt inspection of long-lead procurements assigned to partner to install to verify adherence to the technical specification requirements.
- Review vendor manuals of long-lead procurements assigned to partner to install for construction storage and maintenance, and construction testing requirements.
- Initiate design-related field change management and track implementation.
- Ensure all activities comply with the TVA clearance procedure
- Review/approve rigging plans.
- Assist craft in interpreting the information shown on drawings.
- Perform or assist with cable tray, conduit, and small pipe routing when such routing is designed as "field route."
- Oversight for concrete pours/rebar placement concrete testing
- Perform construction management of subcontracts and assigned contracts.
- Verify cable types and color codes match design output.
- Verify and document wiring terminations and overall equipment installation are completed in accordance with design drawings and industry or specified TVA standards.
- Review and approve cable continuity and megger checks and hi-pot test results (as applicable).
- Document installed quantities of cable tray and conduit for revision of cable schedule lengths as required to reflect major changes.
- Manage the functional loop check process using appropriate plant and partner resources with technical support from FES.
- Review job costs/forecasts and validate job progress.
- Verify construction complies with design documents.
- Assist in coordination of startup activities.
- Prepare "Red line" drawings to support equipment return-to-service in accordance with Change Management and Procedure for Maintenance/Modification Work.
- Ensure equipment is labeled per Plant Labeling (OFP/FO/PL/ALL/1.1)
- Document field lessons learned and provide to the JPT.

Attachment 10.2b
Fossil Engineering Services Responsibilities – Projects

The following is a list of projects responsibilities to be performed by Fossil Engineering Services:

- Participate (or lead) on Joint Project Teams with the modifications partner, the plant, and other project participants during project development, preliminary engineering (phase 1 if applicable), final engineering (phase 2), and implementation (phase 3) to fully understand the project objectives and to maximize JPT effectiveness in terms of value engineering, long-lead procurement, constructability, and labor resource estimates, etc.
- Develop or consolidate estimates and schedules for projects.
- Walk down plant systems and equipment to establish actual configuration and use as a basis for engineering solutions and final design.
- Perform Project Engineering:
- Conduct constructability, maintainability, and operability reviews at the site to obtain plant and partner input and incorporate into the final design.
- Conduct design and procurement progress reviews with JPT
- Initiate scope documents for Partner to review and update the Implementation (phase 3) estimate
- Review the Implementation (phase 3) estimates with the JPT
- Verify that Long Lead (phase 2) material deliveries are being tracked
- Support ORI reviews
- Maintain site presence to ensure that project goals are satisfied
- +Review and disposition project change requests
- Support the partner with technical expertise as requested.
- Support modifications partner when varying or unanticipated site conditions require changes to planned work or a design change.
- Interpret engineering deliverables and project scope for the partner, as required.
- Review and disposition requests for exceptions and correct errors in engineering deliverables.
- Support the partner's technical support staff in loop checks, equipment and system checkout, testing, and turnover; and support system startup, optimization, and tuning.
- Support the development and implementation of operational or maintenance training needed as a result of performing the project
- Support the development or revision of plant procedures affected by the project.
- With the JPT, recommend which of the project drawings should be included in the plant Curator "As Built" library and transmit those drawing files to Production Engineering per the Configuration Drawing and Label Control Procedure.
- Ensure that all drawings associated with the project accurately reflect plant configuration and are issued as "As Constructed" Drawings of Record.
- Participate in project lessons learned evaluations with the JPT