FLORIDA POWER & LIGHT COMPANY

ST LUCIE UNIT NO. 2

ENGINEERING VERIFICATION PROGRAM

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ENGINEERING VERIFICATION PROGRAM

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FLORIDA POWER & LIGHT COMPANY

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ENGINEERING VERIFICATION PROGRAM

I - Introduction

A program has been developed to conduct an in-depth (deep cut) engineering verification of Florida Power & Light Company's St Lucie Unit No. 2 Nuclear Power Plant. This engineering verification will be accomplished by Ebasco and Combustion Engineering Task Forces independent of the St Lucie Project teams. (See Attachment A1.1 for the Task Force Organization Chart)

The program is divided into the following tasks:

A - Selection of items to be reviewed in accordance with Section II of this procedure

B - Independent verification of the existing designs for the selected items in accordance with Section III of this procedure.

C - In-place examination of installed components to verify conformance with the drawings in accordance with Section III of this procedure.

D - Comparison of component design against actual performance based on startup testing completed to date in accordance with Section III of this procedure.

The independence of the verification Task Force is maintained in several ways:

1 - The Ebasco and CE personnel performing the verifications will be individuals who have had no prior involvement in the design, installation, or testing of the items being reviewed or in the review selection process. Resumes of Task Force members will be included in the program documentation.

2 - Task Force members will be located separately from the regular Project teams and will communicate with the Project teams only through the FPL EVP Task Force Manager who is functioning as the program coordinator. R1

3 - The existing design will not be available to the Task Force during preparation of the independent design.

4 - Regular status reports documenting progress of the verification program will be submitted in parallel to the NRC, FPL, Ebasco and CE.

II - Selection Process

The selection of items to be reviewed by the Task Force will consist of the following steps:

1 - A determination by FPL of all candidate items (components or isolated sections of a system).

2 - An appropriate division of the candidate items into separate groups by FPL, as outlined below.

3 - A random selection by FPL, from these groups of candidate items, of eight (8) specific items to be verified by the Task Force.

The candidate items include all "major components" which:

1 - are important to safety, and

2 - have multi-discipline interfaces

The candidates will be divided into A/E and NSSS items, and at least two (2) NSSS items will be chosen.

The candidates will also be divided by major disciplines as follows:

1 - Civil/Structural

2 - Mechanical

3 - Electrical

4 - Heating, Ventilation and Air Conditioning (HVAC)

5 - Instrumentation and Control

At least one item from each discipline will be selected.

The general boundaries of the items to be reviewed will include:

1 - The component support and/or foundation system including its interface with the building structure.

2 - Equipment-to-piping connection points, e.g. nozzles, weld ends, flanges, etc. | R1

3 - Local power supply, instrumentation and controls.

Specific boundaries will be established by the Task Force after the items have been selected, and component-specific boundary sketches will be prepared.

III - Engineering Verification Process

A - Task Force Activities

1 - The Task Force will determine the design inputs considered necessary to perform an independent design review for the items selected. Utilizing the latest design inputs, independent calculations and sketches will be generated and compared with the existing calculations and drawings. Differences between the independent and existing designs will be documented and analyzed. If the differences are determined to be acceptable, the rationale will be documented and the design review phase considered complete. If the differences cannot be resolved, the procedure outlined for unresolved items in Section III.B.1 hereunder will be followed.

2 - Upon completion of the design review phase for a specific item, the independent field installation verification phase can proceed. The Task Force will obtain copies of the latest drawings and other design documents used to install the item and will perform an in-place examination to verify the as-built installation against those drawings and documents. Differences will be documented and analyzed. If the differences are determined to be acceptable, the rationale will be documented and the field installation verification phase considered complete. If the differences cannot be resolved, the procedure outlined in Section III.B.1 will be followed.

3 - Upon completion of the field installation verification phase for a specific item, the independent start-up operation verification phase can proceed. The Task Force will obtain all applicable performance documents not previously provided in addition to pertinent start-up procedures and start-up test data completed to date. A comparison will then be made of the design requirements versus actual performance based on the start-up testing completed to date by Plant Operations. Differences will be documented and analyzed. If the differences are determined to be acceptable, the rationale will be documented and the start-up operation verification phase considered complete. If the differences cannot be resolved, the procedure outlined in Section III.B.1 will be followed.

4 - Task Force activities outlined above are depicted on the flow charts (Attachments A2 through A5).

B - Review Committee/Project Team Activities

1 - Any item for which the differences cannot be resolved by the Task Force -- whether in the design review phase, field installation verification phase, or start-up operation verification phase -- will be classified as an unresolved item (discrepancy), documented, and transmitted to the Review Committee for resolution.

2 - The Review Committee will consist of the FPL Engineering Project Manager, Ebasco Project Engineer, CE Project Manager, and the Task Force Managers. Technical support will be provided as necessary by FPL, Ebasco and CE Project team personnel. (See Attachment A1.2). R1

3 - Should the Review Committee determine through its own review -- supplemented as necessary by support from the Project team -- that the unresolved item (discrepancy) is actually acceptable, the rationale will be documented and the item recycled to the Task Force for its agreement and continuation of the verification procedure.

4 - Should the Review Committee determine through its own review -- supplemented as necessary by support from the Project team -- that the discrepancy is not acceptable, the rationale will be documented and the unresolved item identified as either a finding or an observation.

5 - Any unresolved item which could affect the safety of the plant will be identified as a finding. An unresolved item which results from either a generic technical process flaw or generic procedural program flaw will also be identified as a finding.

6 - An unresolved item not affecting plant safety but resulting from either an isolated technical process flaw or isolated procedural program flaw will be identified as an observation.

7 - The Review Committee will document all findings and observations before transmitting them to the Project team for its review and further processing.

8 - Following Project team determination of the corrective action to be taken for each finding and observation, but prior to actual implementation, Task Force concurrence will be obtained. This will enable the Task Force to assure itself that all aspects of the unresolved item it originally identified have been accounted for.

B - Review Committee/Project Team Activities (Cont'd)

9 - At the same time the Project team implements the necessary corrective action for a finding, it will determine reportability. Reportable findings require preparation and submittal to the NRC of the appropriate 10CFR 50.55(e) or 10CFR 21 reports.

10 - Documentation of item closeout by the Project team will follow implementation of corrective action for each finding and observation.

11 - Review Committee/Project team activities outlined above are depicted on the same flow charts illustrating Task Force activities (Attachments A2 through A 5).

IV - Documentation/Reports

The engineering verification program will have a high degree of visibility, with all process steps in each phase being properly documented for record purposes and the NRC being kept fully apprized of progress via regular status reports.

The following reports will be generated during the program:

1 - Weekly status summaries of the overall program

2 - Minutes of all Review Committee meetings

3 - Reportable findings, if any

4 - Component completion reports as the verification process for each selected item is completed

5 - A final report upon overall program completion

Copies of telephone conversation logs will be included in the weekly status summaries.

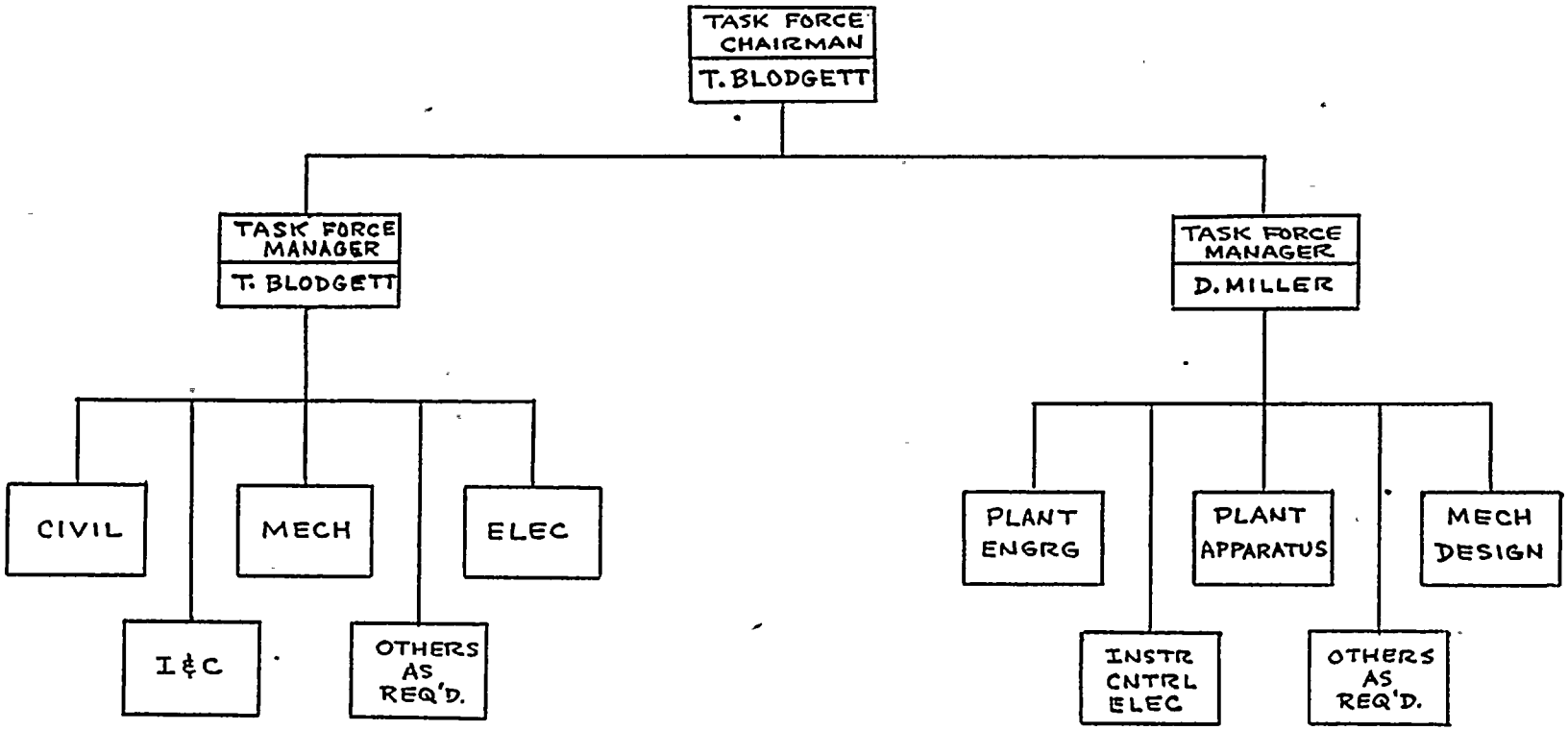
Distribution of correspondence will be made concurrently to the NRC, FPL, Ebasco and CE.

FLORIDA POWER & LIGHT COMPANY
ST. LUCIE UNIT NO. 2
ENGINEERING VERIFICATION PROGRAM

ATTACHMENT A1.1

DATE 06/23/82
REV. 07/30/82

ORGANIZATION CHART- TASK FORCE



EBASCO SERVICES INC

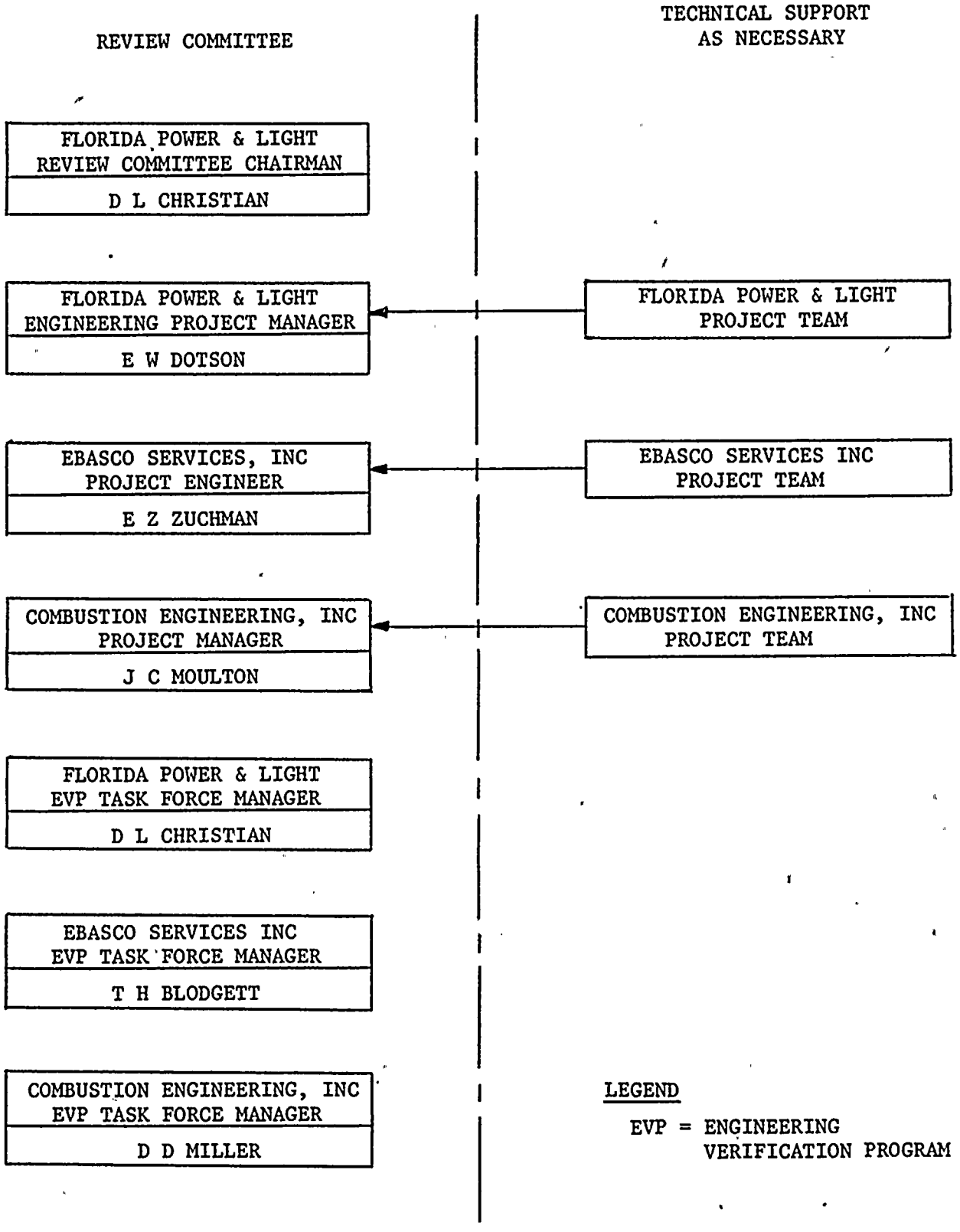
COMBUSTION ENGINEERING, INC

ATTACHMENT A1. 2

FLORIDA POWER & LIGHT COMPANY
ST LUCIE UNIT NO. 2
ENGINEERING VERIFICATION PROGRAM

DATE: 06/23/82
REV 07/30/82

ORGANIZATION CHART - REVIEW COMMITTEE



EBASCO SERVICES INCORPORATED

SHEET 1 OF 1

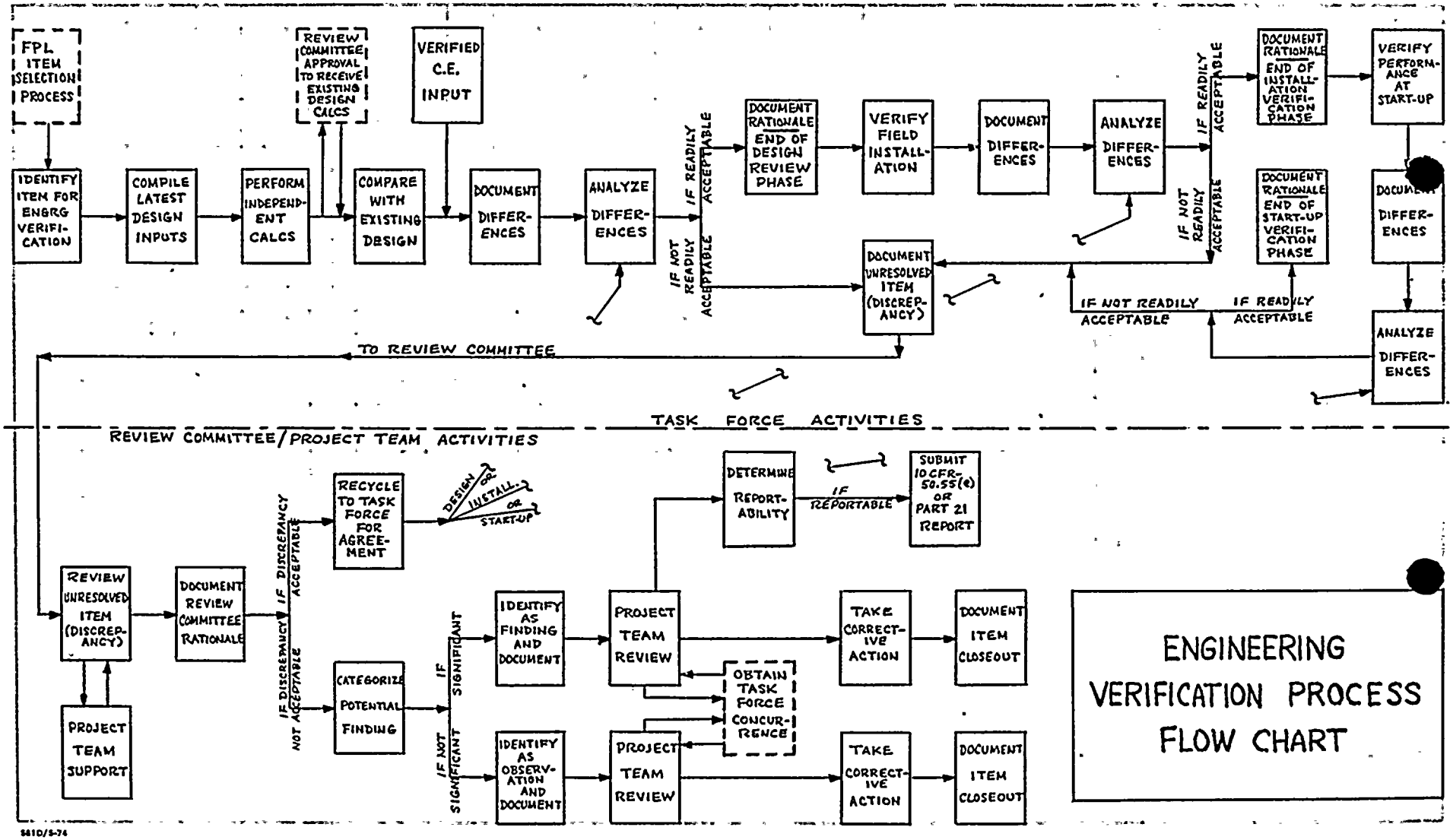
ATTACHMENT A2

CLIENT FLORIDA POWER & LIGHT COMPANY

PROJECT ST. LUCIE UNIT NO. 2

SUBJECT FPL ENGINEERING VERIFICATION

DATE 06/21/82



ENGINEERING VERIFICATION PROCESS FLOW CHART

5410/5-74

EBASCO SERVICES INCORPORATED

SHEET 1 OF 1

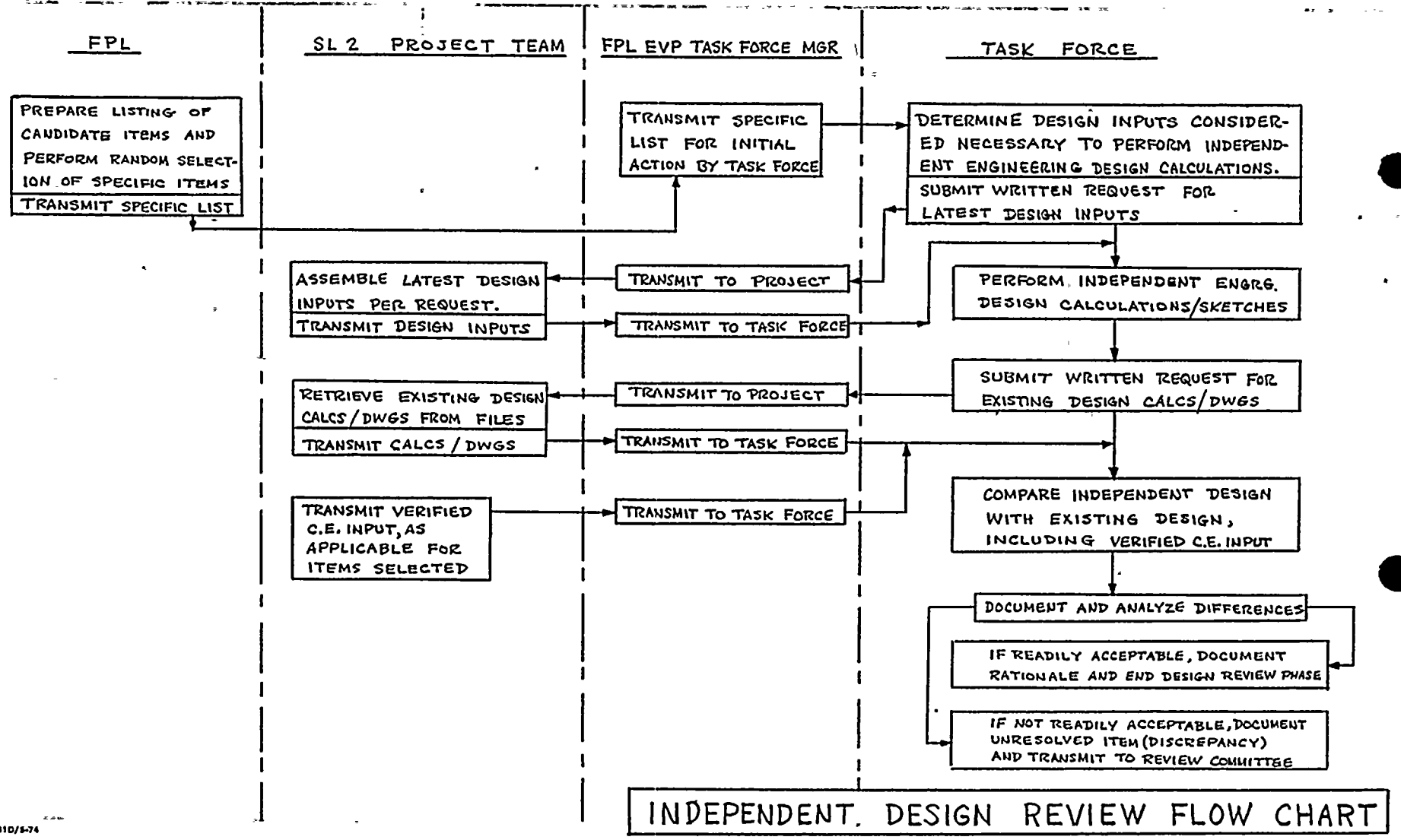
ATTACHMENT A3

CLIENT FLORIDA POWER & LIGHT COMPANY

PROJECT ST. LUCIE UNIT NO. 2

SUBJECT FPL ENGINEERING VERIFICATION

DATE 05/20/82
REV. 07/30/82



INDEPENDENT DESIGN REVIEW FLOW CHART

5410/5-74

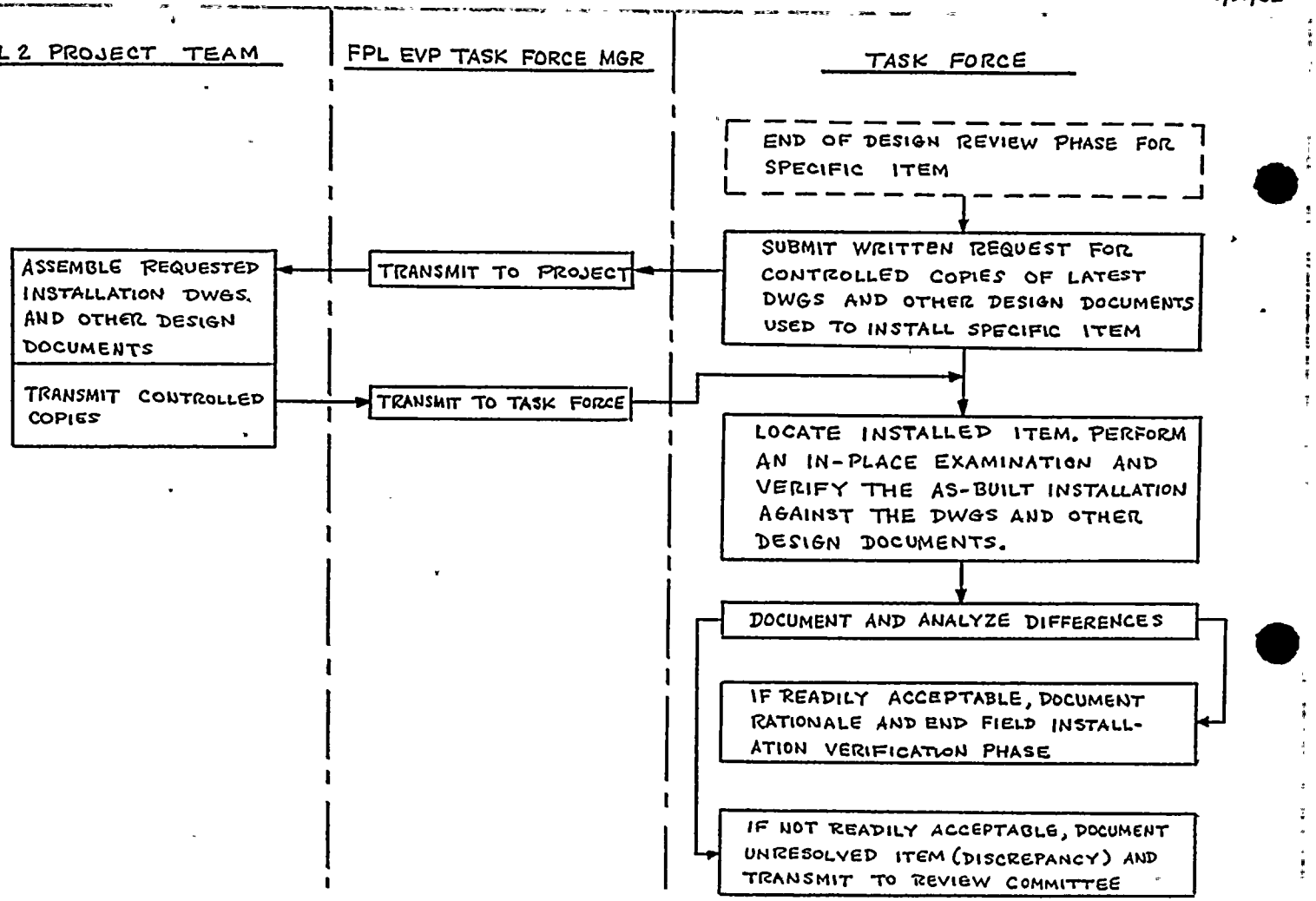
EBASCO SERVICES INCORPORATED

SHEET 1 OF 1

ATTACHMENT A4

CLIENT FLORIDA POWER & LIGHT COMPANY
PROJECT ST. LUCIE UNIT NO. 2
SUBJECT FPL ENGINEERING VERIFICATION

DATE 05/20/82
REV. 07/30/82



INDEPENDENT FIELD INSTALLATION VERIFICATION FLOW CHART

SEID/5-74

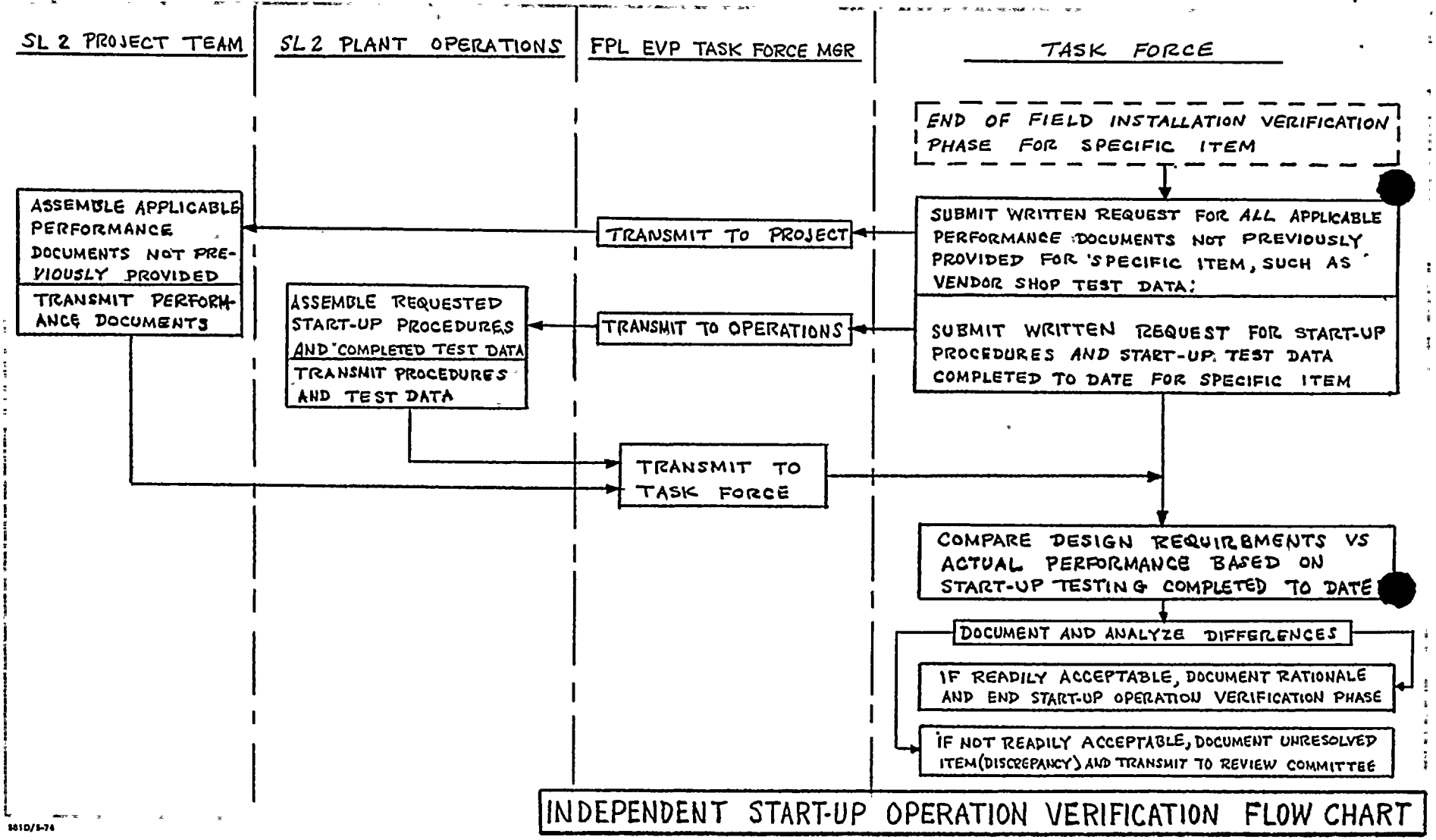
EBASCO SERVICES INCORPORATED

SHEET 1 OF 1

ATTACHMENT A5

CLIENT FLORIDA POWER & LIGHT COMPANY
PROJECT ST. LUCIE UNIT NO. 2
SUBJECT FPL ENGINEERING VERIFICATION

DATE 05/20/82
REV. 07/30/82



INDEPENDENT START-UP OPERATION VERIFICATION FLOW CHART

5810/5-76