

D13. ENGINEERING CHANGE PROCESS REDUCES COSTS AND IMPROVES RESULTS

Engineering change process reduces costs and improves results:

- * Engineering hours required to process engineering changes are reduced through use of the logic and screening contained in the Engineering Change Optimization (ECO) guidelines.
- * Engineers, freed from administrative burden and low-value technical tasks, are able to produce technically better engineering products.
- * The ECO logic results in the proper level of effort being applied to each engineering change instead of a "one-size-fits-all" engineering change process. As many as 85% of changes for a typical plant can be accomplished through simpler methods.
- * Flowcharts, screening questions and implementation recommendations contained in the ECO guidelines aid the engineer in achieving through treatment of each engineering change accomplished.

The research began with a survey. The data gathering convinced the Task Group that they must:

- * define what a design change is.
- * distinguish the level of detail, effort and review required for a change based on safety significance, cost, and complexity.
- * distinguish between real and perceived regulatory requirements.

The Task Group established four categories of engineering changes:

- * change outside of controlled plant equipment.
- * Document only changes, both technical and administrative.
- * Equivalent changes.
- * Hardware changes to controlled plant equipment.

A survey revealed that greater than 80% of utilities are using some portion of the ECO process. For a typical plant, approximately 40 engineering person-years per year are consumed by the engineering portion of the plant change process. At a loaded rate of \$45/hr., the value of a 20% saving is \$650,000 per year.

For more, "Guidelines for Optimizing the Engineering Change Process," EPRI TR-103586, March 1994.