

## ABSTRACT

### 1. OBJECTIVES

To perform an Ergonomic Evaluation on Site 5 DCS Control Room with the following objectives:

- To outline the DCS Operators task components that is of interest for this Study.
- To investigate the Environmental Conditions (or Physiological Factors) and Occupational Stressors (or Psychological Factors) at Site 5 Control Room that affect Operator Comfort, Health, Performance and Morale.
- To develop requirements and recommendations for reducing Control Room Stress on the operator by adapting the job to fit the Operator Requirements.

### 2. SCOPE OF PROJECT

The Ergonomics Evaluation of the DCS Control Room at Site 5 investigates the requirements of Control Rooms based on Job Requirements and Environmental Conditions. The project reviews accepted standards and recent relevant publications for comparison with actual conditions and makes recommendations for improvements.

A task analysis is done for the DCS Operators to investigate the elements of the job that are important to the Ergonomic Design of the workplace. Special emphasis is placed on job tasks that are related to the DCS Operator's complaints.

The Evaluation utilises the knowledge and expertise of Ergonomics to analyse and propose recommendations that would minimise the harmful effects of the Job and the Environment on the Operator. This would have benefits for both the Operators and Management.

### 3. METHODOLOGY

#### i. TASK ANALYSIS:

This would involve detailing the DCS Operator Job Task and identifying key Responsibilities and Activities that are affected by the Physical and Environmental Conditions. Information was gathered from Operators Job Specification, interviews and observations.

## ii. ERGONOMIC EVALUATION:

The project focuses on the DCS Operator's complaints made to management. The Seating Requirement was an item of major concern for the Operators. The Project had sought to utilize Operator preferences derived from Questionnaires, together with Ergonomics Requirements to develop guidelines for chair selection.

Illumination was another important issue for the Operators. The Illumination Requirements for the Control Room was derived from researching current data on Visual Display Terminal (VDT) Environments. Operator preferences were also investigated by using Questionnaires to identify the exact problems being experienced. Recommendation for minimizing these problems was then proposed.

## iii. CONTROL ROOM STRESS

The Project Identifies the various Stressors present for the DCS Operator and group them in the four (4) basic Classifications. The major stressors are then investigated through interviews and observations of the Operators. Strategies for Stress Management and Reduction were then proposed based on these findings

## 4. SUMMARY

The Project investigated the Seating Requirement for the DCS Control Room at Site 5 and recommended Guidelines for Selection of an Ergonomic Chair. A survey was done on the Local Chair Suppliers and the various chair designs they offered. The various chairs were compared with the selection guidelines and the most appropriate chair chosen.

The Project looked at the Lighting System at Site 5 and made recommendations for reducing Glare and its effect on the Operators by looking at Task Activity, Design of the DCS Console, Lighting Layout, Vision Disorders and Work Station Layout.

Also the Stressors at the DCS Control Room were determined and the major stressors analysed. Stress Prevention Strategies were then recommended based on these major stressors. These Strategies had beneficial implications for both Operators and Management.