

**WELCOME TO  
THE LECTURE ON  
CONFIGURATION MANAGEMENT**

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# **CONFIGURATION MANAGEMENT**

## **OBJECTIVES OF PRESENTATION**

- GENERAL PRINCIPLES
- PLANT INVOLVEMENT
- CHANGE CONTROL
- OSART EXPERIENCE

# **CONFIGURATION MANAGEMENT**

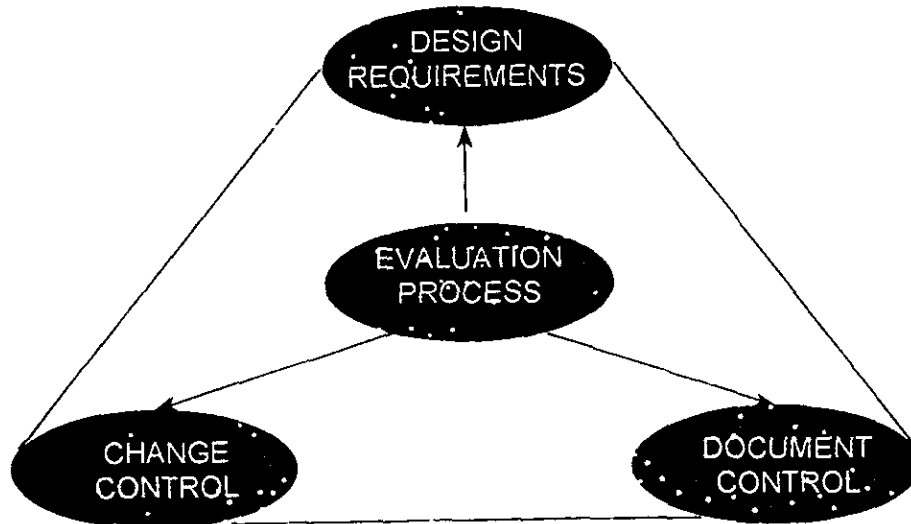
## **CONFIGURATION MANAGEMENT CONTROL OBJECTIVES**

TO DISCUSS THE FOLLOWING:

- **ATTRIBUTES AND MAJOR ISSUES OF CONFIGURATION MANAGEMENT**
- **INVOLVEMENT OF OPERATIONS IN CHANGE CONTROL**
- **CONTROL OF TEMPORARY MODIFICATIONS**
- **SYMPTOMS OF INADEQUATE CONFIGURATION MANAGEMENT**

# CONFIGURATION MANAGEMENT

## ESSENTIAL ELEMENTS



# **CONFIGURATION MANAGEMENT**

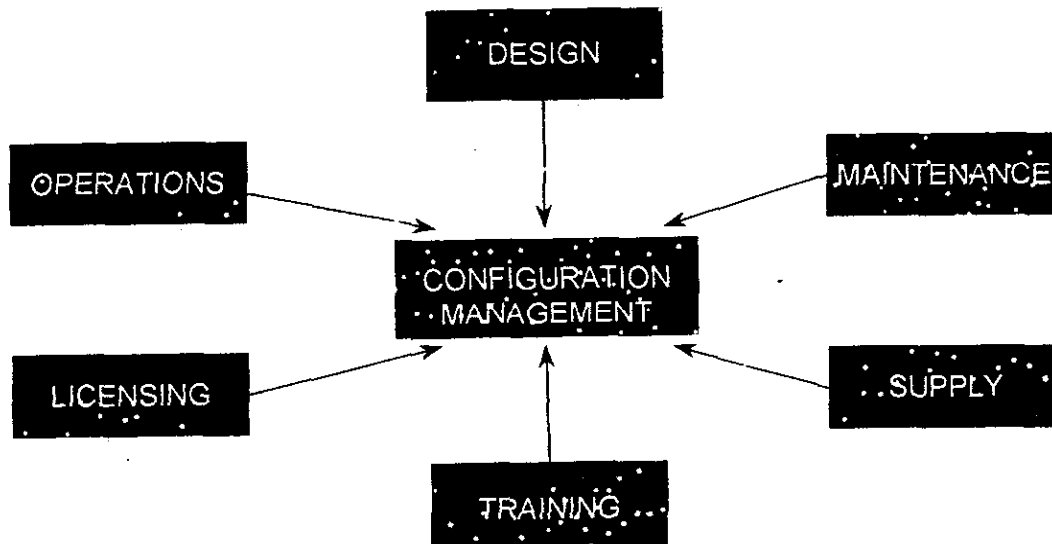
## **OBJECTIVES**

TO ENSURE THAT

- PLANT COMPONENTS CONFORM TO DESIGN REQUIREMENTS
- PLANT CHARACTERISTICS ARE REFLECTED IN DOCUMENTATION
- CHANGES ARE CONTROLLED AND DOCUMENTED
- ACCURATE RECORD OF PLANT CONFIGURATION IS AVAILABLE

# CONFIGURATION MANAGEMENT

## MAJOR INTERFACES



# **CONFIGURATION MANAGEMENT**

## **BENEFITS ARISE IN THE AREAS OF:**

- DESIGN CHANGES
- PROCEDURAL CHANGES
- PROCUREMENT
- LICENSING
- PLANT LIFE EXTENSION

# **CONFIGURATION MANAGEMENT**

## **ATTRIBUTES**

### **ESSENTIAL ELEMENTS:**

- DETERMINATION OF SCOPE
- DESIGN REQUIREMENTS
- CONTROL OF MODIFICATIONS
- CONTROL OF DOCUMENTATION

### **IN ORDER TO:**

- BENEFIT FROM OPEX
- SATISFY REGULATORS
- BENEFIT FROM NEW TECHNOLOGY



# CONFIGURATION MANAGEMENT

## MAJOR ISSUES

- MAINTENANCE OF DESIGN REQUIREMENTS
- CHANGE CONTROL
- CHANGES IN MAINTENANCE
- CHANGES IN OPERATIONS
- PLANT MODIFICATIONS
- DOCUMENT CONTROL
- TRAINING
- REVIEW OF PROCEDURES

## **CONFIGURATION MANAGEMENT**

- INTEGRATED PROCESS
- IDENTIFIES EXISTING DESIGN SPECIFICATIONS
- CONTROLS CHANGE TO ENSURE CONFORMANCE TO DESIGN SPECIFICATIONS
- ENSURES SELECTED PLANT DOCUMENTATION REFLECTS DESIGN SPECIFICATION
- PROVIDES INFORMATION BASE TO ENABLE THE PLANT TO BE IN AN ANALYZED SAFE STATE AT ALL TIMES

# **CONFIGURATION MANAGEMENT**

## **PLANT INVOLVEMENT**

- REVIEWING PROPOSED DESIGN CHANGES
- CONTROLLING INSTALLATION OF PERMANENT AND TEMPORARY CHANGE
- COMMISSIONING AND TESTING
- ENSURING THAT THE PLANT IS OPERATED AND MAINTAINED IN A MANNER CONSISTENT WITH THE DESIGN INTENT

## **PLANT REVIEW OF DESIGN CHANGES**

- WILL THE CHANGE CREATE OPERATING DIFFICULTIES?
- DOES THE PLANT HAVE THE SKILLS TO OPERATE AND MAINTAIN THE PROPOSED CHANGE?
- WILL LONG OUTAGES BE REQUIRED FOR INSTALLATION?
- WHAT IS THE IMPACT ON ACCESS TO PLANT EQUIPMENT?
- ARE THE CONTROLS APPROPRIATELY POSITIONED IN THE CONTROL ROOM?
- ARE THE ADVANTAGES OF THE CHANGE OUTWEIGHING THE DISADVANTAGES?

## **PERMANENT/TEMPORARY CHANGES**

### **PROCESS FOR INSTALLATION:**

- CHANGE REVIEWED, APPROVED & DOCUMENTED
- DOCUMENTATION INCLUDES TESTING, TRAINING, OPERATING & MAINTAINING THE CHANGE
- REACTOR PLACED IN A SAFE STATE
- SYSTEM PLACED IN A SAFE STATE
- EQUIPMENT CORRECTLY ISOLATED
- CHANGE INSTALLED
- QUALITY ASSURANCE CHECKS
- TESTING AND COMMISSIONING
- RESULTS REVIEWED
- SYSTEM RETURNED TO SERVICE

# TEMPORARY CHANGES

## EXAMPLES

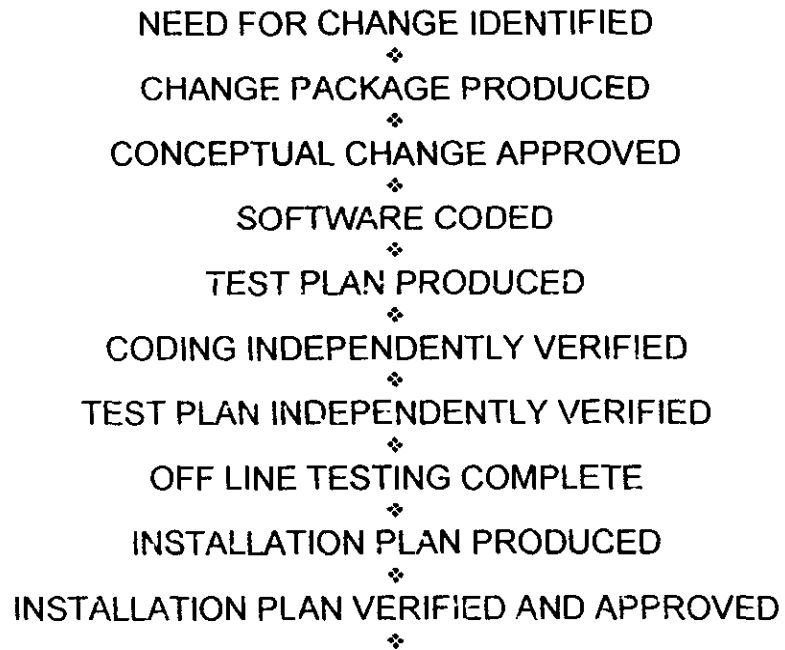
- LIFTED LEADS
- ELECTRICAL JUMPERS
- PULLED CIRCUIT BOARDS
- DISABLED ANNUNCIATORS
- MODIFIED PIPEWORK
- SETPOINT CHANGES
- BLANK FLANGES
- TEMPORARY FILTERS OR STRAINERS
- ETC.

# TEMPORARY CHANGES

## CONTROL OF TEMPORARY CHANGES

- TEMPORARY CHANGES MUST BE MINIMIZED
- THEY MUST BE APPROVED BY A KNOWLEDGEABLE INDIVIDUAL
- THEY MUST BE PROPERLY IDENTIFIED IN THE PLANT AND IN PLANT DOCUMENTATION
- TRAINING MUST BE GIVEN, AS REQUIRED
- MUST HAVE A LIMITED LIFETIME
- MUST BE INDEPENDENTLY VERIFIED
- THE PLANT MUST BE ROUTINELY INSPECTED TO ENSURE INAPPROPRIATE JUMPERS DO NOT EXIST

# THE COMPUTER CHANGE PROCESS





# THE COMPUTER CHANGE PROCESS

CONFIRM UNIT IS SUITABLE FOR INSTALLATION



INSTALL IN FIRST COMPUTER



INDEPENDENTLY VERIFY FIRST COMPUTER



TEST FIRST COMPUTER



WAIT TO EVALUATE IMPACT



INSTALL IN SECOND COMPUTER



TEST SECOND COMPUTER



REVIEW CHANGE EFFECTIVENESS



UPDATE SOFTWARE LIBRARY

# PROCEDURAL COMPLIANCE

## RESULTS

- HIGH QUALITY WORK PROCESSES THAT STAFF WILL FOLLOW

## MAJOR THRUSTS

- MAINTAIN CURRENT PROGRAMME FOCUS
- SELF CHECKING DURING WORK
- AIMS/EOPS MAINTAIN CURRENT PROGRAMME
- STREAMLINE PROCEDURE UPDATES/PROCESS
- REINFORCE IMPORTANCE OF SEQUENCE OF STEPS
- CLARIFY PROCEDURAL COMPLIANCE (VERBATIM VS GUIDELINE)

# PROCEDURAL COMPLIANCE

## MEASURES OF SUCCESS

- DEVELOP BETTER MEASURES OF USE IN FIELD
- MAINTAIN SCHEDULE OF UPDATES

# **OPERATIONS INVOLVEMENT**

## **OPERATIONS INVOLVEMENT IN CHANGE CONTROL**

### **PLANNING, PRIORITIZATION AND IMPLEMENTATION**

- LONG TERM PLAN FOR MODIFICATIONS
- EARLY APPROVAL IN PRINCIPLE
- PARTICIPATION IN MULTI-DISCIPLINARY DESIGN REVIEWS
- PERSONNEL ASSIGNED TO INTERACT CLOSELY WITH DESIGNERS

# TEMPORARY CHANGES

## CHARACTERISTICS

### 'JUMPERS'

- SHIFT SUPERVISOR'S APPROVAL
- INDEPENDENT VERIFICATION AND/OR FUNCTIONAL TEST
- OPERATING INSTRUCTIONS
- CLEAR IDENTIFICATION
- TIME LIMITED
- PERIODIC REVIEW
- RECORD IN CONTROL ROOM