

**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

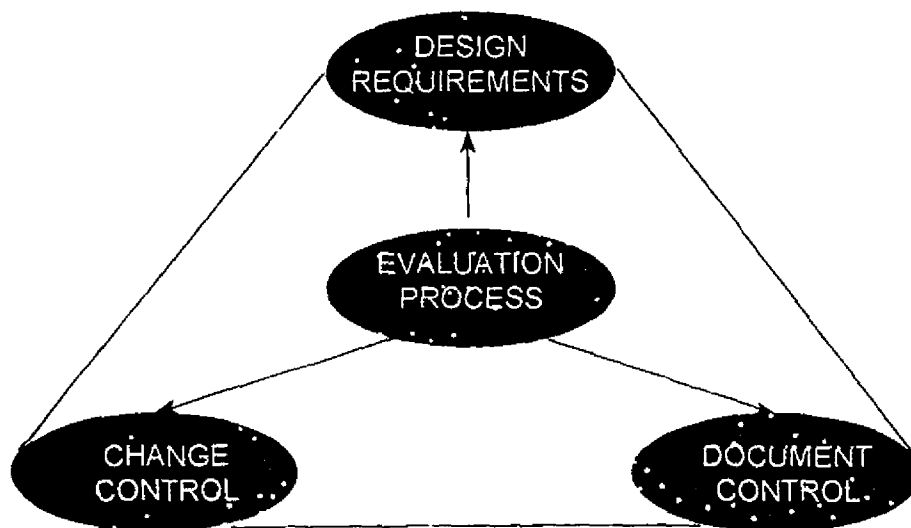
CONFIGURATION MANAGEMENT CONTROL OBJECTIVES

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

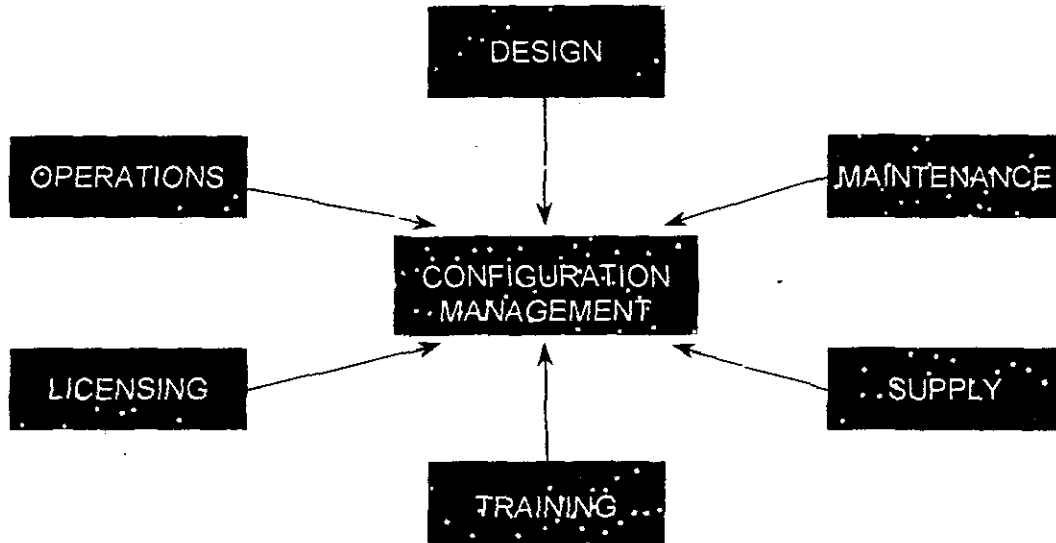
OBJECTIVES

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

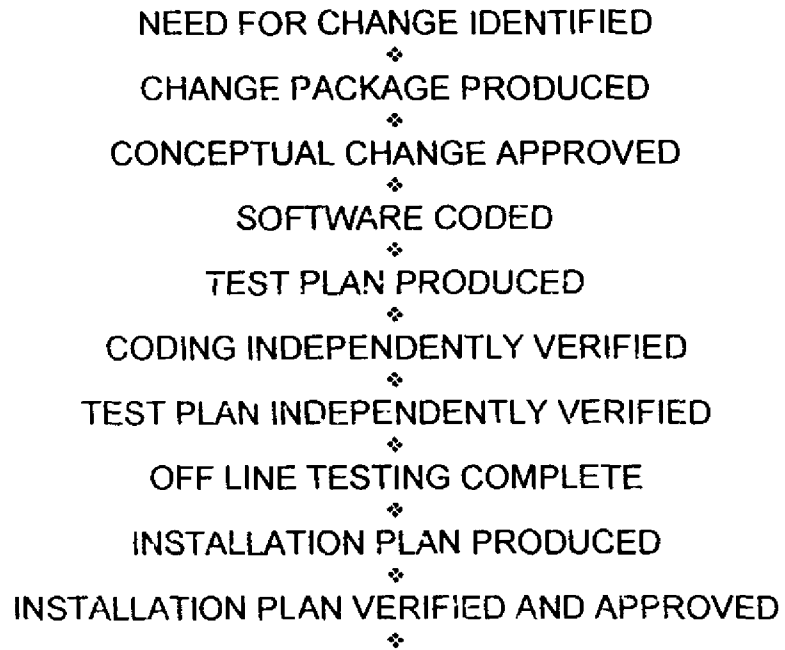
- LIFTED LEADS
- ELECTRICAL JUMPERS
- PULLED CIRCUIT BOARDS
- DISABLED ANNUNCIATORS
- MODIFIED PIPEWORK
- SETPOINT CHANGES
- BLANK FLANGES
- TEMPORARY FILTERS OR STRAINERS
- ETC.

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