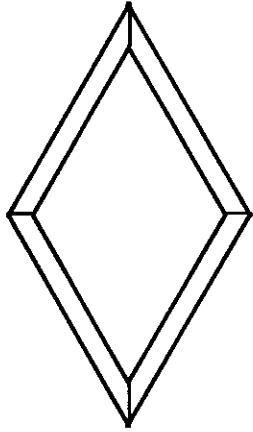*DEPT. OF* *NUCLEAR TECHNOLOGY*

CHULALONGKORN UNIVERSITY

Presentation - 2

" ESTABLISHING QUALITY

MANAGEMENT (QM) "

George Wieckowski
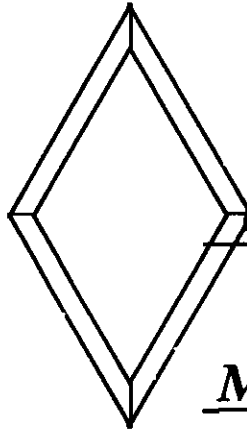
Operations Quality Corp.

Nov. 1996

ESTABLISHING QM

OBJECTIVES :

To review:

◆ **Structure and contents of QA program**

◆ **Requirements for procedures**

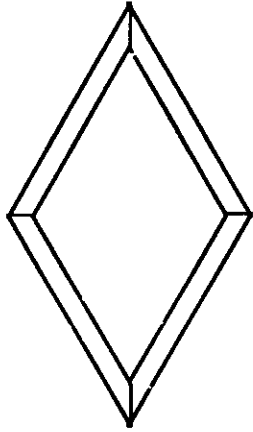◆ **QM program implementation**

QUALITY MANAGEMENT PROGRAM

MAIN OBJECTIVES :

* ❖ *Prevention* of errors
  and defects (QA)

* ❖ Continuous, incremental
  improvement Involving
  people

⬇

OPERATIONAL

EXCELLENCE

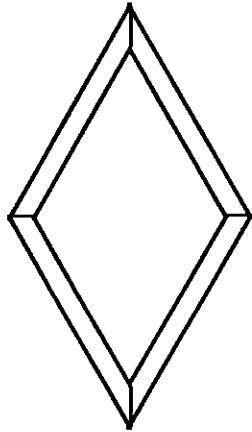Champion :   **PLANT MANAGER**

3

CONTENTS OF QA PROGRAM

ORGANIZATION

Plant organization must be defined and _must_

Clearly specify :
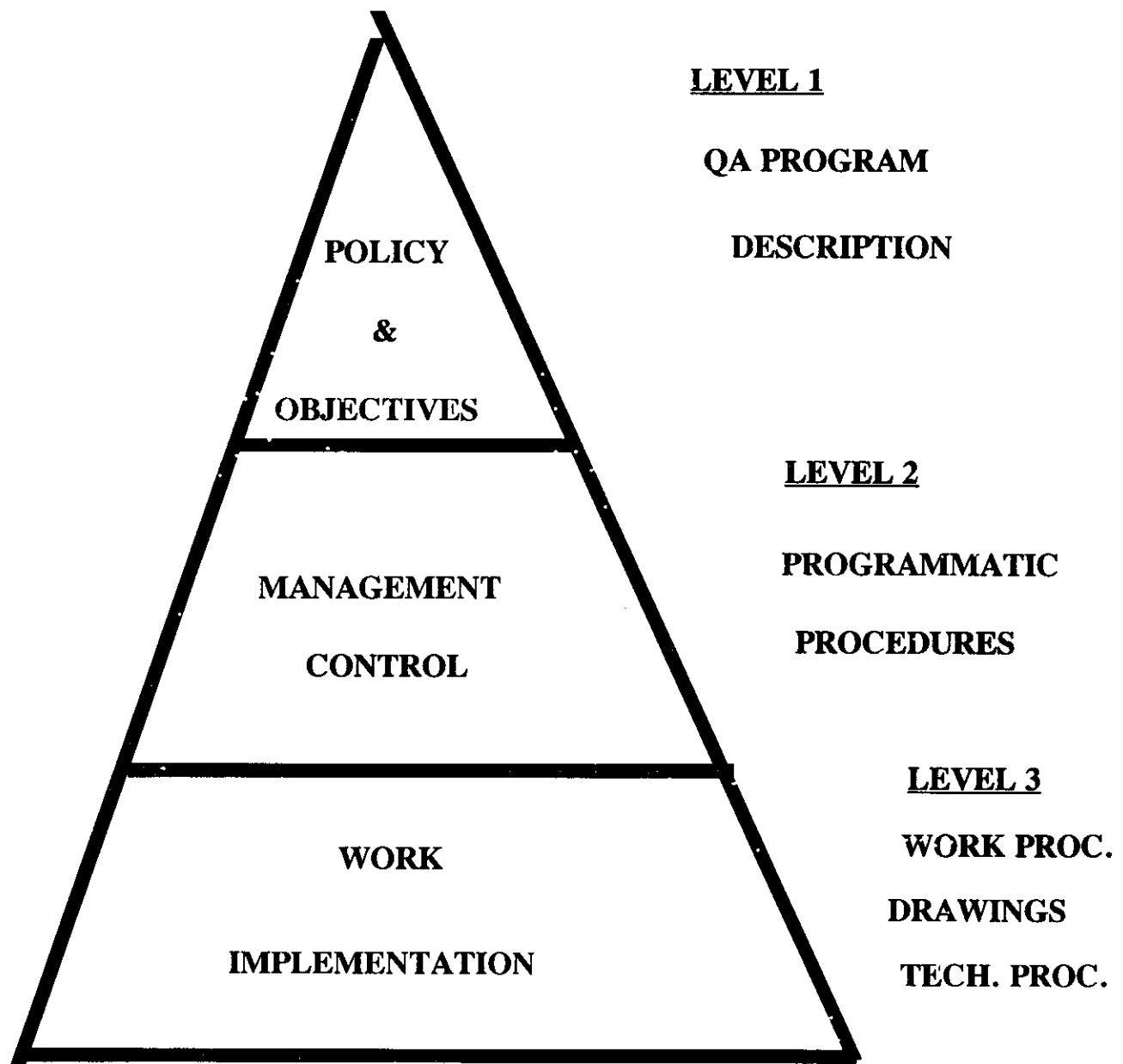
❖ Responsibilities and corresponding authority

❖ Quality requirements (criteria)

❖ Quality measures
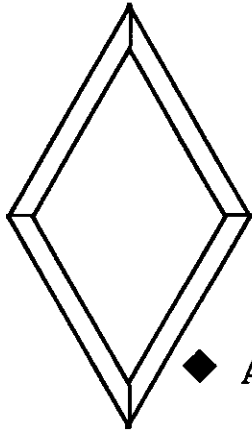
❖ Coordination responsi - bilities (interfaces)

STRUCTURE OF QA PROGRAM

DOCUMENTATION

TYPICAL DOCUMENTS

LEVEL 1

QA PROGRAM

DESCRIPTION

POLICY

&

OBJECTIVES

LEVEL 2

PROGRAMMATIC

PROCEDURES

MANAGEMENT

CONTROL

LEVEL 3

WORK

WORK PROC.

DRAWINGS

IMPLEMENTATION

TECH. PROC.

GENERIC, PROGRAMMATIC PROCEDURES

◆ ADDRESS KEY ELEMENTS OF QA PRORAM.

◆ STANDARDIZE PROCESSES IN OPERATIONS
WHERE STANDARDIZATION ADDS VALUE

◆ DEFINE PROCESS TO BE FOLLOWED

EXAMPLES:

▦ PREPARATION OF PROCEDURES

▦ INTERFACE CONTROL

▦ CORRECTIVE ACTION

▦ WORK PLANNING AND CONTROL

▦ DOCUMENT CONTROL
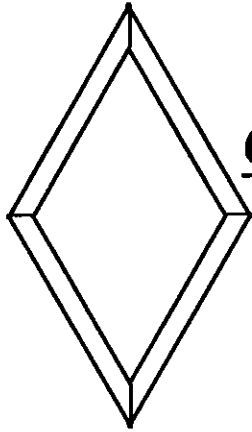
▦ VERIFICATION

▦ PROGRAM SURVEILLANCE
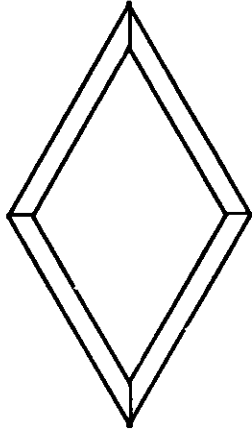
CONTENTS OF A GOOD PROCEDURE:

◆ STATEMENT OF POLICY

◆ ADDRESSES ONE MAJOR PROCESS ONLY

◆ DEFINES RESPONSIBILITY FOR
   PROCESS AND INTERFACES

◆ DEFINES REPORTING REQUIREMENTS &
   RECORDS

◆ DEFINES VERIFICATION REQUIRED

◆ STATES HAZARDS, CONSTRAINTS

◆ HAS FLOW SHEET TO ILLUSTRATE STEPS

◆ IS PROPERLY REVIEWED, VERIFIED AND
   APPROVED
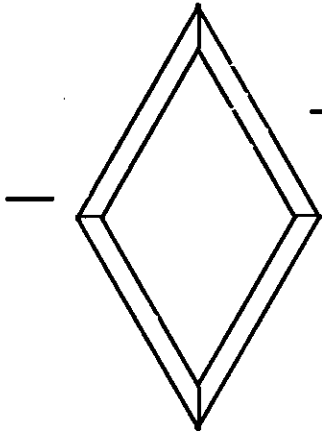
CONTENTS OF QA PROGRAM
VERIFICATION

Acceptable methods of verification are :

* Self-verification for simple tasks

* Review of the work before and after execution

* Inspection

* Witnessing an activity

* Functional testing to confirm satisfactory operation

* "Hold point" as specified in the procedure
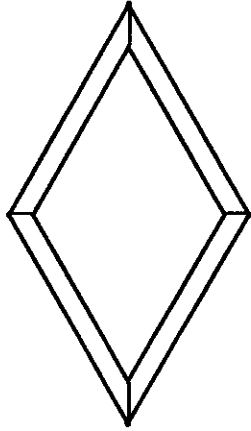
* Special verification - to be specified

8

CONTENTS OF QA PROGRAM

GRADING

Grading should be applied to following

Items and services :

❖ In-process controls, reviews and verification

❖ Review and stringency of approval of instructions

❖ Training and qualifications

❖ Material and equipment traceability

❖ Documentation and records
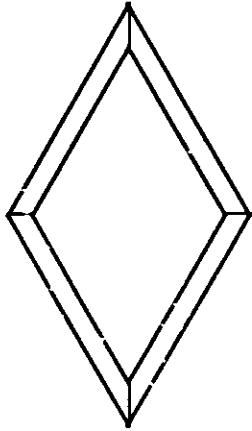
❖ Assessment of performance

CONTENTS OF QA PROGRAM

COMPETENCE OF PERSONNEL

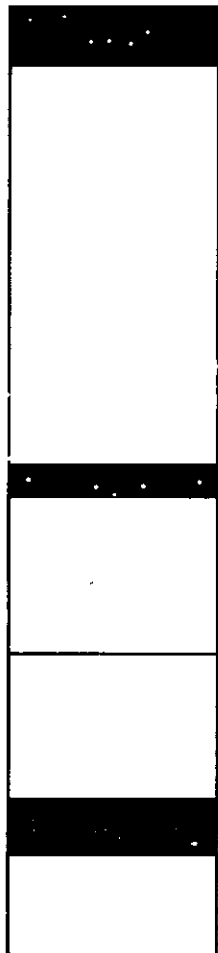Quality of training should be *independently assessed*.

Typical performance measures :

- ❖ Examination results (knowledge)

- ❖ Quality of training methods

- ❖ Feedback from the plant re skills and knowledge of workers

- ❖ Feedback from students

- ❖ Feedback from observations and audits
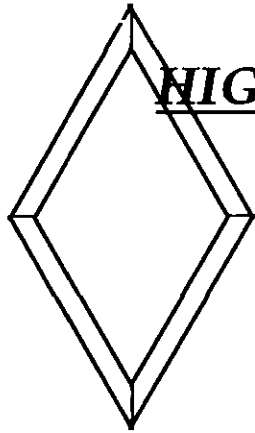
WHAT IS EXCELLENCE

IN NUCLEAR OPERATIONS ?

INPO BEST PRACTICES

OUR TARGETS AND
OBJECTIVES

ASSESSED BY :
- BENCHMARKING
- PEER EVALUA-
  TIONS

MEETING REGULATIONS
AND STANDARDS

HIGHLIGHTS OF TYPICAL PLANT QI PLAN

- ❖ CONDUCT MANAGERS SEMINAR TO:
  - ESTABLISH A COMMON PURPOSE
  - DEVELOP TEAM BUILDING SKILLS
- ❖ CONDUCT SELF- ASSESSMENTS
- ❖ IDENTIFY PRIORITY ISSUES FOR THE PLANT
- ❖ CONDUCT ORIENTATION SEMINARS FOR STAFF
- ❖ PUBLISH PLANT CORE VALUES AND VISION
  - HIGHLIGHT " CUSTOMER ORIENTATION
- ❖ FORM TEAMS :
  - ENSURE EACH TEAM HAS AN OBJECTIVE AND A SPONSOR
  - TRAIN TEAM MEMBERS
- ❖ IMPLEMENT RECOMMENDED IMPROVEMENTS
- ❖ TAKE CORRECTIVE ACTION
- ❖ PERIODICALLY REVIEW TEAMS PROGRESS
- ❖ CELEBRATE SUCCESSES
 - CATCH PEOPLE DOING THINGS RIGHT
  - ORGANIZE A " QUALITY DAY"

## IMPROVEMENT IS A LONG TERM PROCESS
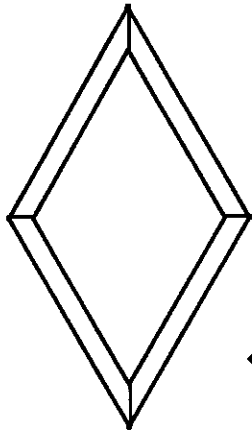
MANAGEMENT COMMITMENT

MEANS:

❖ **PROVIDE RESOURCES**

❖ **DISCUSS QUALITY AT EVERY OPPORTUNITY**
  - IN THE FIELD
  - IN THE OFFICE
  - AT MEETINGS

❖ **BE PERSONALLY INVOLVED IN REVIEWING KEY RESULTS:**
  - PERF. MEASURES
  - CORRECTIVE ACTIONS
  - OTHERS

❖ **VISIBLY SUPPORT QUALITY EDUCATION AND TRAINING PROGRAM**

❖ **LEAD BY EXAMPLE- DO NOT SACRIFICE QUALITY FOR ANY REASON**
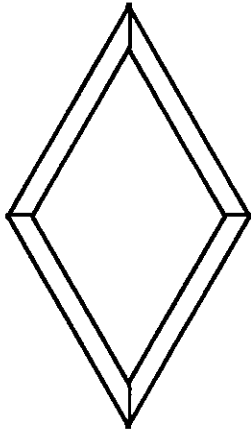
COMMUNICATION
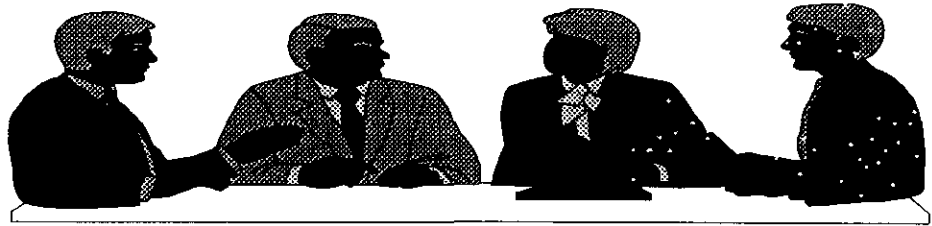
❖ COMMUNICATE:

- COMMITMENT TO PEOPLE
- COMMITMENT TO HIGHEST STANDARDS

❖ THROUGH:

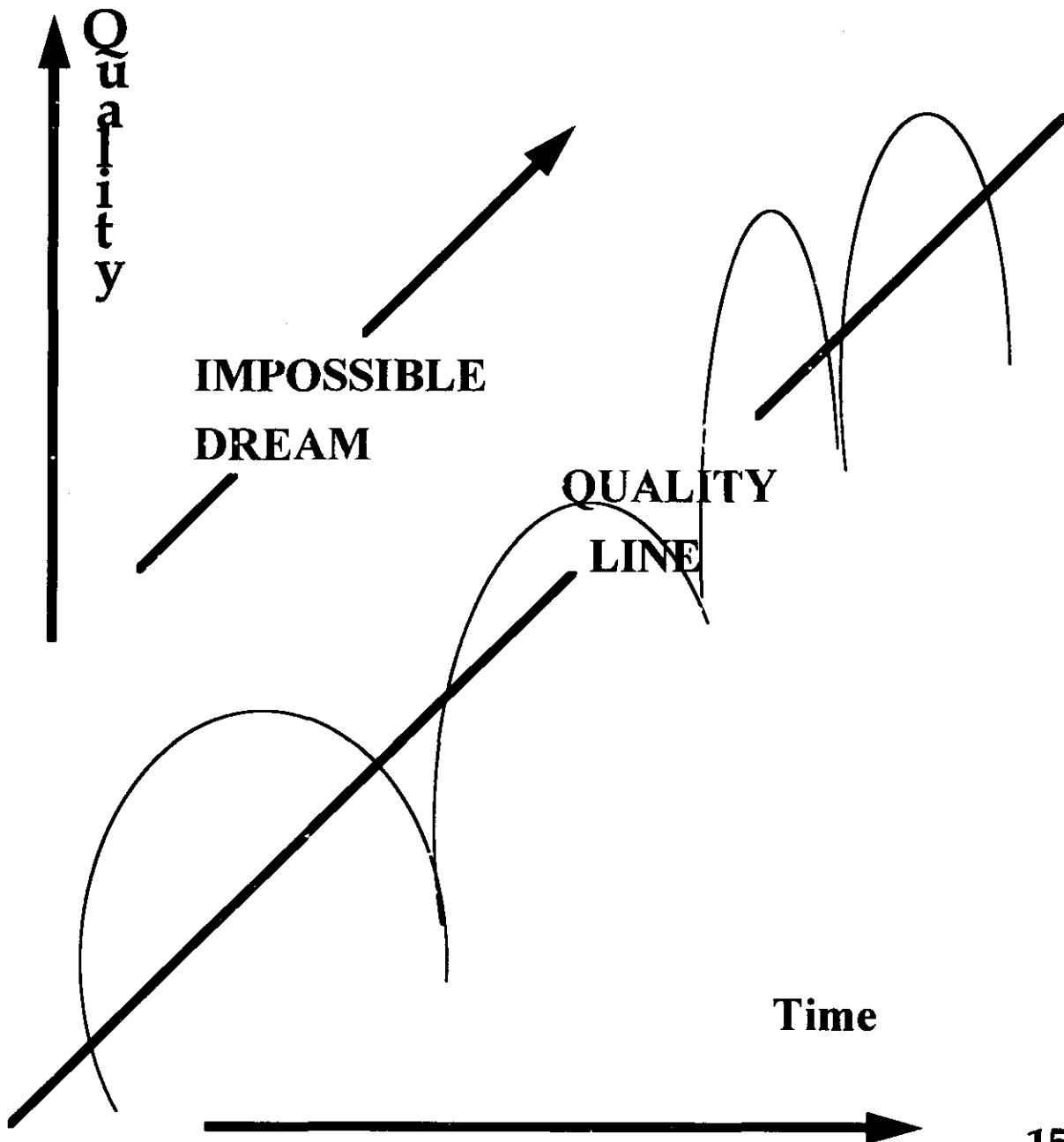- SPEECHES AND PRESENTATIONS
- ANNOUNCEMENTS, POSTERS
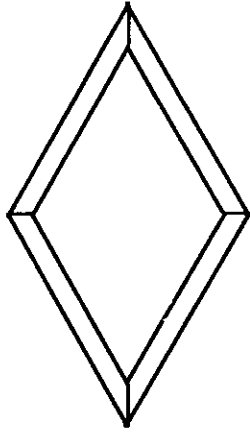- BEING VISIBLE IN THE PLANT
- TALKING AND LISTENING TO PEOPLE

❖ PROMOTE THE CONCEPTS OF EXCELLENCE AND CONTINUOUS IMPROVEMENT
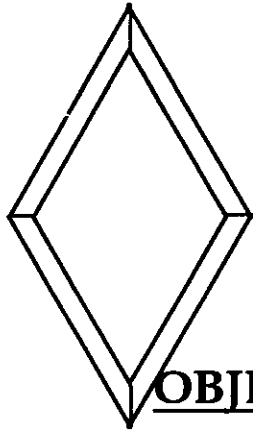
❖ UNDER-SELL AND OVER-DELIVER

THE QUALITY JOURNEY

Quality

IMPOSSIBLE
DREAM

QUALITY
LINE

Time

15
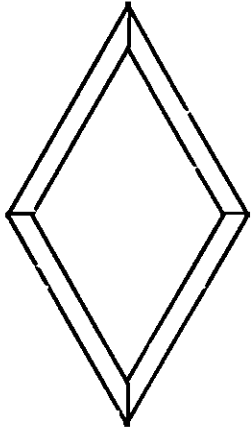
RESULTS ACHIEVED

- ❖ New organization

- ❖ Business relationships

- ❖ Improved working relationships

- ❖ Improvement in performance

- ❖ Acceptance of QM

- ❖ Improvement in corrective actions

- ❖ Improvement in documentation

QA PROGRAM

EXERCISE

OBJECTIVE:

TO ILLUSTRATE THE ROLE QA PROGRAM CAN PLAY IN PREVENTION OF ERRORS.

ACTIVITY:

USE THE EXAMPLE OF A POORLY DONE JOB, SHOWN ON CHART 11 TO RECOMMEND:

A) HOW PROPER APPLICATION OF QA PRINCIPLES WOULD HAVE AVOIDED THE PROBLEM ?

B) WHO AND HOW SHOULD BE INVOLVED IN RESOLVING THE PROBLEM ?

C) WHO IS RESPONSIBLE FOR RESOLVING IT ?

D) PREPARE A SHORT SUMMARY OF YOUR RECOMMENDATIONS.
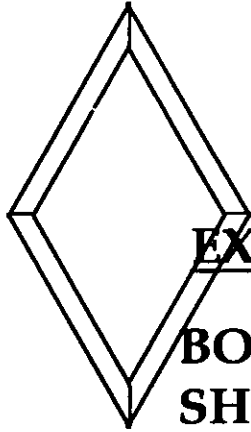
MAINTENANCE JOB

POORLY DONE

EXAMPLE :

BOILER FEED PUMP HAS FAILED 3 TIMES
SHORTLY AFTER MAINTENANCE DUE TO
INCORRECT ALIGNMENT.

INVESTIGATION DETERMINED THAT :

❖ INCORRECT ALIGNMENT FIGURES WERE
   GIVEN IN ALIGNMENT PROCEDURE

❖ MECHANICS WERE NOT BRIEFED BEFORE
   WORK STARTED

❖ SKILLED MECHANICS ASSIGNED TO THIS
   WORK HAVE NOT ALIGNED THIS
   PARTICULAR
   PUMP BEFORE

❖ WORK WAS NOT PROPERLY VERIFIED
   WHILE IN PROGRESS OR AT COMPLETION

❖ PREVIOUS SUCCESSFUL ALIGNMENTS
   WERE ALWAYS DONE BY ANOTHER GROUP

THIS PROBLEM RESULTED IN DELAYING UNIT
START-UP BY SEVERAL DAYS.
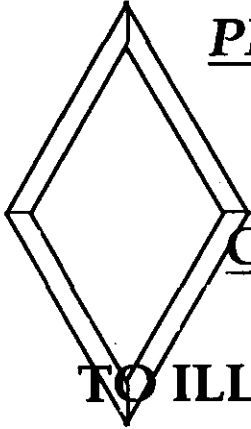
PROCEDURE PREPARATION - EXERCISE

OBJECTIVE :

TO ILLUSTRATE THE BASIC STEPS OF PROCEDURE PREPARATION AND REVIEW

ACTIVITY :

PREPARE A POINT-FORM OUTLINE
FOR A PROGRAMMATIC PROCEDURE FOR
AN ELEMENT OF QA PROGRAM,

SUCH AS : - CORRECTIVE ACTION
- VERIFICATION
- QA SURVEILLANCE
- INTERFACE CONTROL

USE YOUR KNOWLEDGE OF THE PROCESS
TO DEVELOP THIS OUTLINE

CONSIDER ALL ASPECTS OF "GOOD
PROCEDURE " AS SHOWN ON CHART