CASK MAINTENANCE FACILITY

UPDATE ON THE FEASIBILITY STUDY

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- HISTORICALLY, - - IN THE U.S.
  - SMALL CASK FLEET
  - SMALL SHIPPING PROGRAMS
  - NO DEDICATED CASK SYSTEM MAINTENANCE FACILITIES
  - CASK SYSTEM USERS PROVIDE SPACE, RESOURCES, AND SYSTEMS

- CASK SYSTEM MAINTENANCE IS PERFORMED IN THE U.S. AT:
  - REACTORS OPERATED BY THE CASK SYSTEM USER
  - DESTINATION SITES SUCH AS HOT CELLS AND AWAY-FROM-REACTOR STORAGE FACILITIES
  - OTHER FACILITIES

- THE CURRENT U.S. MAINTENANCE FACILITIES HAVE:
  - THE NECESSARY LICENSE TO RECEIVE, STORE, HANDLE, AND SHIP THE ISOTOPES FOUND IN LOADED AND UNLOADED CASKS
  - SYSTEMS FOR HANDLING AND PROCESSING WASTES
  - QUALIFIED PERSONNEL FOR SUPPORT
  - RADIOLOGICAL CONTROLS
  - LIFTING CAPABILITY AND UTILITIES
  - POOL OR HOT CELL FOR INTERNALS CLEANING AND HANDLING

- CASK SYSTEM MAINTENANCE AT USER FACILITIES IS LIMITED BY:

  - CONSTRAINTS ON THROUGHPUT

    - - ONE WAY IN AND OUT

    - - ONE LOCATION FOR WORK

  - COMPETITION FOR RESOURCES FOR OTHER FACILITY ACTIVITIES

  - INCENTIVES

- CASK MAINTENANCE FACILITY FEASIBILITY STUDY FOR:
  - DEFINING SERVICING AND MAINTENANCE REQUIREMENTS
  - DEVELOPING CASK MAINTENANCE FACILITY FEASIBILITY AND DESIGN CONCEPT
  - ASSESSING DESIGN ALTERNATIVES/OPTIONS
  - "SCOPING" COSTS AND SCHEDULES

- CMF FEASIBILITY STUDY HAS ALSO:
  - IDENTIFIED INTERIM MAINTENANCE OPTIONS
  - CONSIDERED IMPACTS OF UNCERTAINTIES IN SIZE OF FLEET AND FREQUENCY AND DURATION OF VISITS TO CMF
  - ADDRESSED ISSUE OF HANDLING OF LOW-LEVEL WASTE GENERATED AS A RESULT OF CASK SYSTEM MAINTENANCE

- GENERAL CASK SYSTEM MAINTENANCE REQUIREMENTS
  - MAINTENANCE FOR CASKS, ANCILLARY EQUIPMENT, TRANSPORTERS, AND (IN SOME CASES) TRANSPORT VEHICLES
  - STORAGE, CHANGEOUT, AND MAINTENANCE OF INTERNALS (BASKETS, INSERTS, ETC.)
  - CLEANING AND DECONTAMINATION
  - PREPARATION OF CAMPAIGN KITS
  - STORAGE AND MAINTENANCE OF ANCILLARY EQUIPMENT

- GENERAL CASK SYSTEM MAINTENANCE REQUIREMENTS (CONT)
  - STORAGE, MONITORING, AND SHIPPING OF "SPARES"
  - RECORDS MANAGEMENT FOR CASK FLEET, TRANSPORTATION SYSTEM
  - CLEANING OF TRANSPORTERS AND TRANSPORT VEHICLES FOR SHIPPING OFF-SITE FOR INSPECTORS, MAINTENANCE, AND REPAIRS

ION

- SIGNIFICANT CMF CONSIDERATIONS:
  - CASKS TO BE SERVICED
  - FREQUENCY OF SERVICING AND MAINTENANCE PER UNIT
  - OPERATING SCHEDULE
  - INTERNAL STRUCTURE CHANGEOUT AND STORAGE
  - CASK CONTENTS AT MAINTENANCE FACILITY
  - LOCATION OF VEHICLE MAINTENANCE
  - DISPOSITION OF WASTES GENERATED
  - LICENSING OF FACILITY

- TWO BASIS DESIGN OPTIONS CONSIDERED:

  - "*WET*" - SHIELDED BASKET OPERATIONS

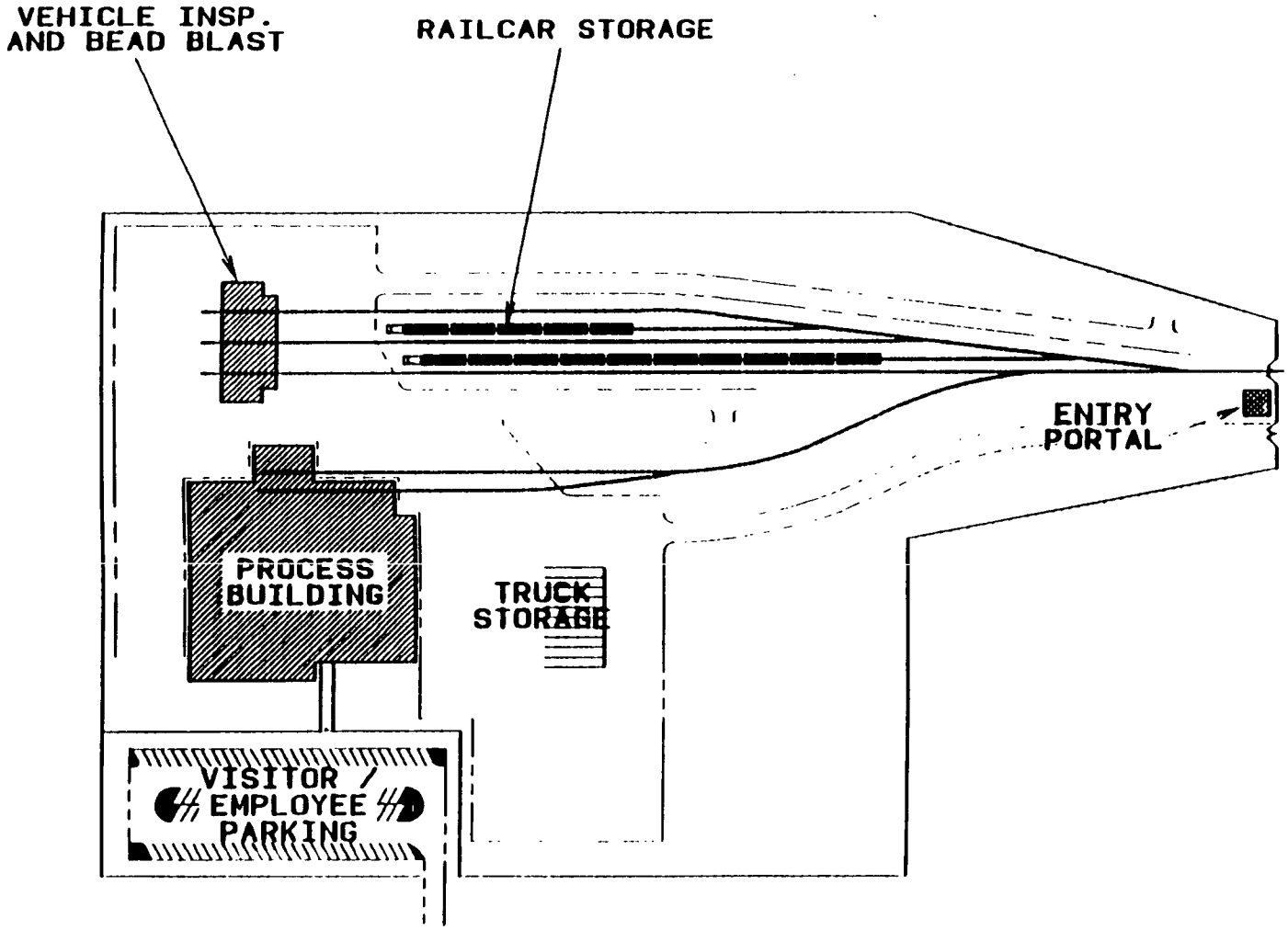
  - "*DRY*" - SHIELDED BASKET OPERATIONS

FY 1988: FEASIBILITY STUDY WAS BASED ON "*WET*" OPTION

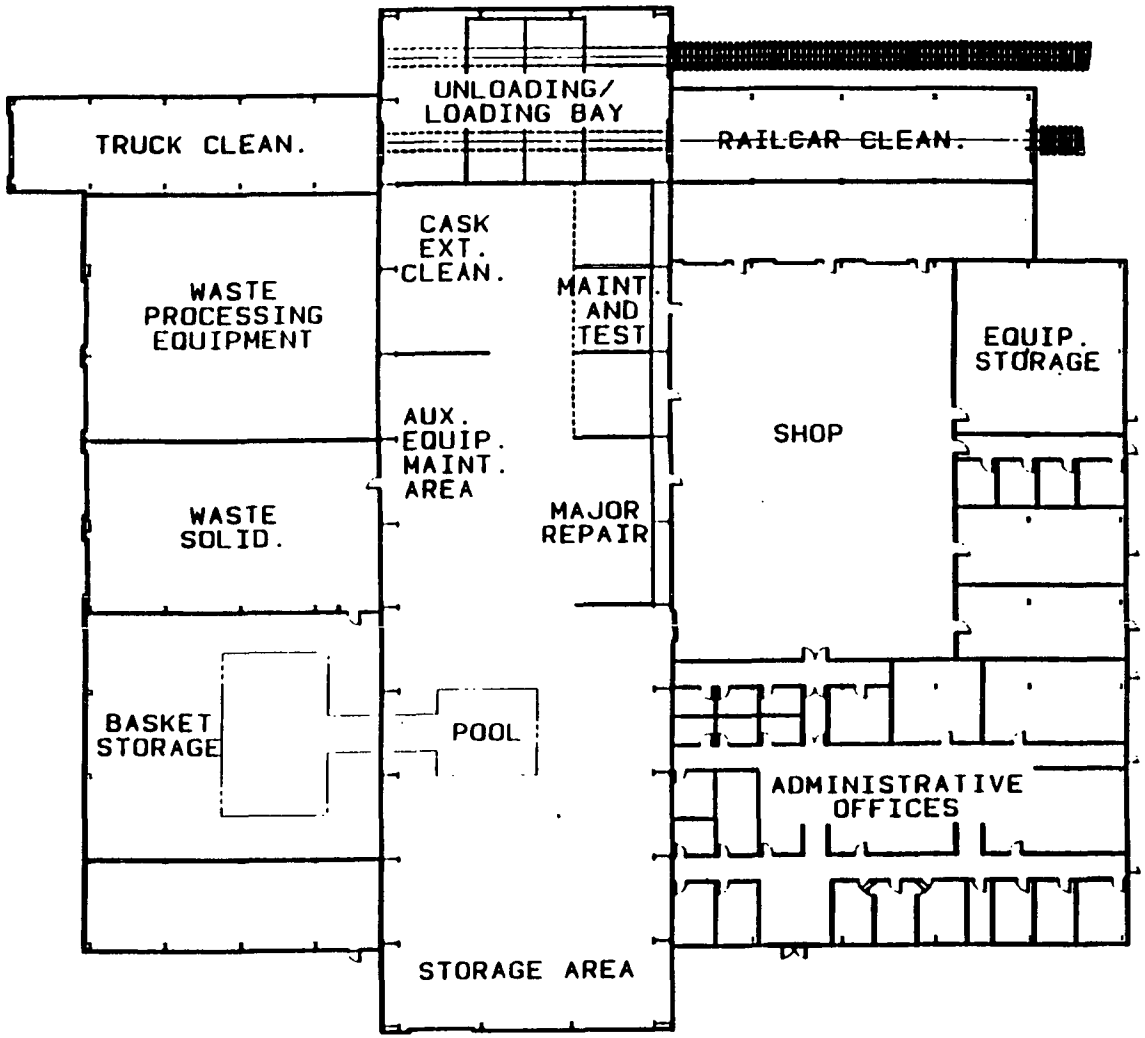
FY 1989/90: UPDATE ASSESSMENT USING FOREIGN DATA

FY 1991: FOLLOW-ON STUDY BASED ON "*DRY*" OPTION

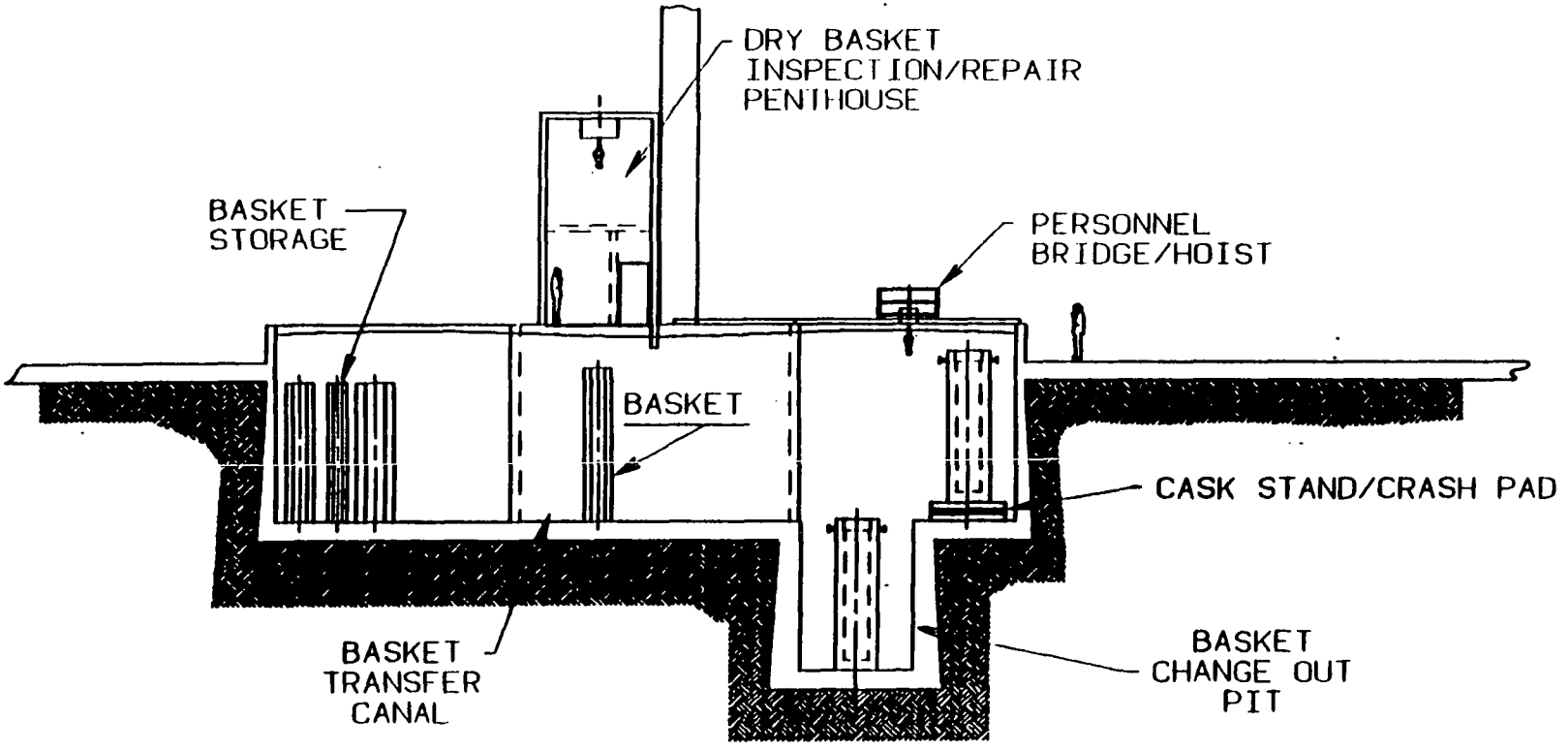
1988 Study Results - CMF Site Plan



CMF Process Building Layout -- "Wet"



1988 Study Results - CMF Reconfiguration Pool -- The "Wet" Option



- 1989/90 FOLLOW-ON STUDIES - - REVIEW OF INFORMATION ON FOREIGN EXPERIENCE

  - SOURCES OF INFORMATION

    - - PATRAM '89 SYMPOSIUM

    - - SPECTRUM '90 SYMPOSIUM

    - - PERSONAL COMMUNICATIONS

  - GENERAL FINDINGS:

    - - CASK TURNAROUNDS PER YEAR ARE LOWER IN EUROPE THAN ASSUMED FOR FEASIBILITY STUDY

    - - MAINTENANCE PHILOSOPHY/SCHEDULES DIFFER

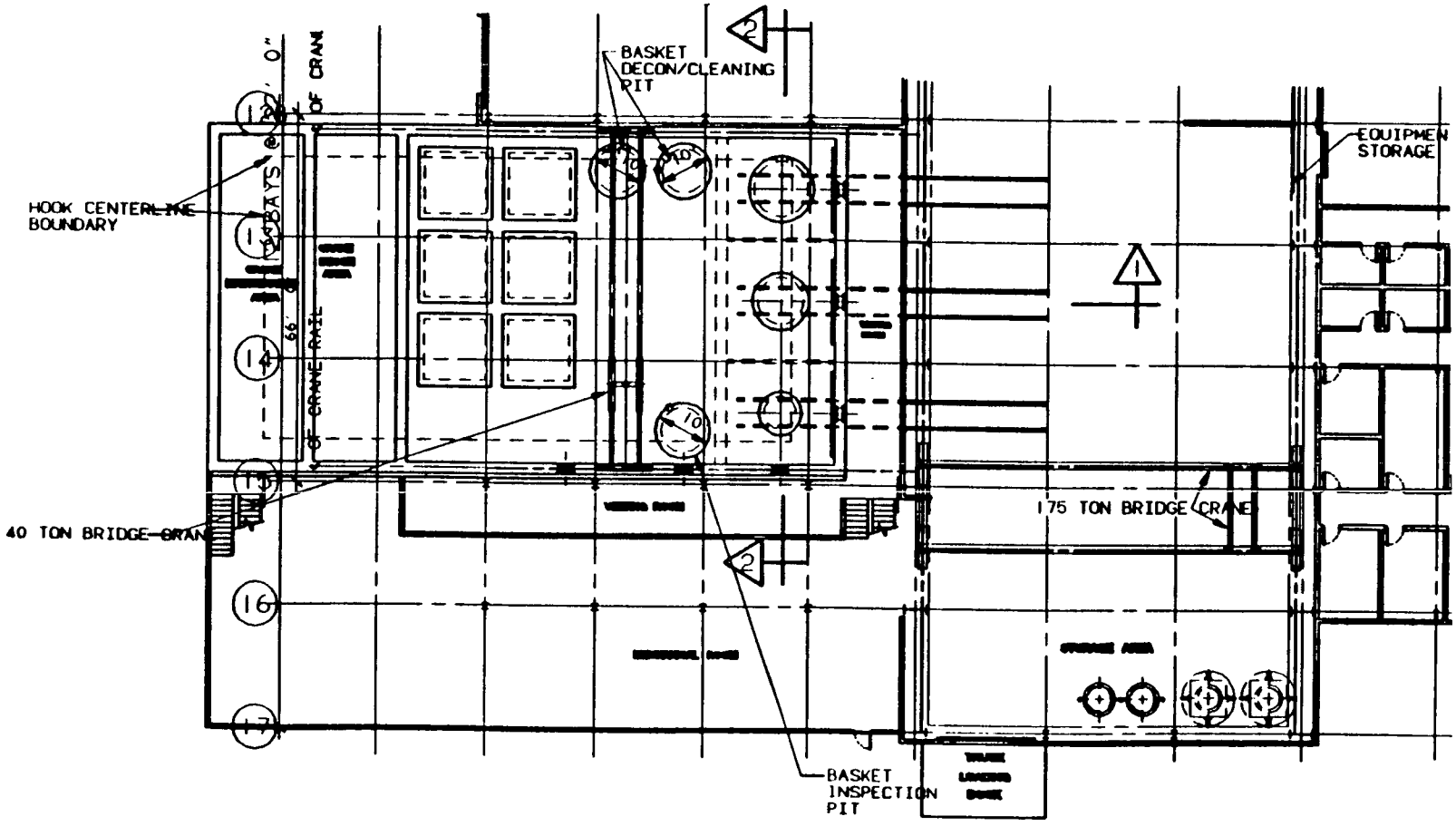
    - - MAINTENANCE REQUIREMENTS INCREASE AS CASKS INCREASE IN AGE

- RECOMMENDED IMPROVEMENT TO CONCEPT:

  - ELIMINATE DEDICATED CASK MAINTENANCE AND INSPECTION STATIONS AND REPLACE WITH ALL-PURPOSE WORK STATION

  - REDUCE LENGTH OF HIGH BAY AREA

1991 Study Results - CMF Reconfiguration Isolation Cell -- The"Dry" Option



1991 Study Results - CMF Utilization

Summary of Facility Throughput Variations

Utilization specified in percentage of available time Station is in use.

Station	Shifts/ Week	Cask Visits to CMF per Year 150	250	300	400
Load/Unload Bay	5	86%	148%	173%	222%
Exterior decon	15	56%	94%	111%	124%
Vehicle Receipt/ Inspection	21	27%	45%	53%	68%
Basket Change	15	43%	71%	85%	99%