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Computer Year 2000 Problems in Japanese Nuclear Facilities

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Computer Year 2000 Problems in Japanese Nuclear Facilities

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1. MITI’s Activities to Electric Power Companies (to September 1998)

(1) 1997-12 : to send an administrative letter of the Minister of MITI to the Federation of Electric Power Companies to heighten an awareness of the Y2K problem,
(2) 1998-4 : to hear Y2K Program and its status from selective electric power companies
(3) 1998-6 : to investigate the status of the activities performed by electric power companies through questionnaire
(4) 1998-7 : Phase-1 Report from electric power companies
(5) 1998-8 : to hear the details of Y2K Program

- National Y2K Action Plan was issued at September 1998, which was established by the initiative of Prime Minister.

- Contents of Action Plan
  
  - Promoting Y2K awareness
  - Measures to be taken by the Central Government
  - Measures for the Private Sector
    - Measures for the Private Sectors of Particular Importance
  - Establishment of a System to Provide Information
  - Follow-up to the Action Plan

(Internet: http://www.miti.go.jp (Japanese, English))

3. MITI’s Activities to Electric Power Companies
after National Y2K Action Plan was issued.

- The MITI asked Electric Power Companies
  - To conduct voluntary overall check-ups,
  - To develop contingency plan, and
  - To report their progress quarterly,

- Observation through Review Committee on Year 2000 Problem in NPP
4. Review Committee on Computer Year 2000 Problems in NPP

Purpose:

1) To assure the completeness of the activities addressing the Y2K problem performed by the electric power companies.
2) To maintain safe and stable continuous operation of NPPs.

• Members:
  • Senior Researchers of I&C Engineering (Academy)
  • Experts of Computer Engineering (Industrial Organization)
  • Senior Inspectors (MITI)
  • Experts of Safety Engineering (NUPEC)

• Review Method:
  • Document-base audit for typical several NPPs

Activities of Y2K Review Committee (continued)
• Review scope: Systems and components important to safety and those ones important to continuous operation of NPP.
  • Class–1 I&C systems and components
    (Ex) Reactor Protection System
  • Class–2 I&C systems and components
    (Ex) Those systems providing post-accidental important parameters
    Those control systems that operate safety-related system
  • Class – 3 I&C systems and components and others
    (Ex) Reactor Control System (Feedwater control, etc.)
    Process computer
Based on “Review Criteria of Safety Classifications in Japanese NPPs”

Activities of Y2K Review Committee (continued)
• Review Items
  • Inventory List
  • Selection of date-susceptive item (method, result)
  • Impact of false data-handling
  • Method and period of remediation
  • Method of validation test
  • Quality assurance of Y2K program
  • Contingency plan
Activities of Y2K Review Committee (continued)

• Schedule:

  • 1999- 2: Selection of the NPP reviewed by the Committee
    • Selection Criteria:
      • Reactor type and prime contractor,
      • Extent of use of computer-based system
      • Y2K progress
  • 1999- 3: Review of the Y2K activities in selected NPP
  • 1999- 4: Review of contingency plans (Review method will be determined)
  • 1999- 5: Evaluation Report
    • The results will be made public, as well as to be reported to the Nuclear Safety Commission.
  • 1999- 6: Follow-up activity if necessary
5. Status of the Activities performed by Electric Power Companies (Based on their Progress Report)

(1) Number of Commercial NPP : 51 units in 10 Electric Power Companies

(2) General Observations

- Organization addressing Y2K Problems headed by Vice-President
- Information Disclosure through Internet Homepage (in Japanese)

(3) Evaluation of computer-based systems used in NPP

- No Problems in Systems for Control Function
- Some Date-susceptive Systems for Information Display Function
Status of the Activities by Electric Power Companies (continued)

(4) Results and Status as of Jan.1, 1999

• 17 Units completed their Y2K Readiness Program

• About 81 percent of the date-susceptive systems important to safety and continuous operation have been completed. (51 units)

• 90 percent of these systems is supposed to be completed by this July.

• The remaining 10 percent of these systems will be completed by the end of this year.
(5) Future Concerns

- To complete remediation in few plants whose corrective activities are scheduled to be done after this July owing to the scheduled outage of the plant.

- To develop the company-specific contingency plans for the Y2K problem by this July.
6. Conclusion and Continuous Effort

- The MITI established Y2K Review Committee in order to assure the adequacy of Y2K activities performed by electric power companies.

- The MITI’s present evaluation
  - The activities addressing the Y2K problem in electric power companies have been carried out on schedule, and
  - The MITI also has a confidence that those remaining activities will be completed prior to January 1, 2000.

- The MITI will continue to observe the activities in electric power companies continuously till the end of this year.