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NUCLEAR REGULATORY COMMISSION  
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MEMORANDUM FOR: L. J. Evans, Jr., Chief  
Security Programs Branch  
Division of Safeguards, NMSS

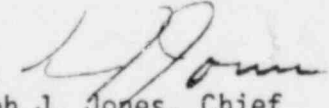
FROM: Ralph J. Jones, Chief  
Materials Protection Standards Branch, SD

SUBJECT: BASIC ESSENTIAL ELEMENTS OF A FIXED SITE FUEL  
CYCLE SAFEGUARDS SYSTEM

Enclosed is a revised list for the subject item which resulted from our discussions on March 1, 1977, with Don Kasun, Dick Sutton, and Lewis Scott.

This list identifies the basic elements which are essential for a safeguards system to be effective against the design basis threat. Incorporation of these items as regulation requirements would require preparation of regulatory language such as now appears in Part 73 for many of these items. Preparation of this language now is in progress. We are preparing this on the basis that such basic essential element requirements will not be integrated with the basic capability requirements. Rather the language for each requirement will identify the basic capabilities to which element would be associated. This will eliminate the necessity of repeating many of the elements under the paragraphs for the basic capabilities as would be the case if the essential element requirements are integrated with the capability requirements.

No specific rationale has been developed to support these basic essential elements as being essential. Experience with present regulations and license conditions, evaluation of current security systems, and the technical judgement of the staff is the basis on which the present listing was developed. It would seem that this should be sufficient. Perhaps the experience and evaluations should be documented, but doesn't the Joint Task Force report do this to a great extent?

  
Ralph J. Jones, Chief  
Materials Protection Standards Branch  
Office of Standards Development

Enclosure:  
As stated

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BASIC ESSENTIAL ELEMENTS

OF

A SAFEGUARDS SYSTEM

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- A. Security Organization
  - 1. Trained, qualified, and suitably equipped guard and escort force
    - a. Required criteria to be included in an appendix to Part 73
  - 2. Nominal and minimum number of armed personnel
  - 3. Written procedures, responsibilities, authorities
- B. Physical Barrier Systems
  - 1. Protected areas, vital areas, material access areas
  - 2. Double barrier concept
  - 3. Isolation zones
  - 4. Illumination
  - 5. Enclosed Handling and Process Areas
    - a. Locked and alarmed with space alarms for material locations when areas are unoccupied
  - 6. Storage vaults or vault type rooms depending on materials
    - a. Locked and alarmed with space alarms
- C. Access Control Systems and Procedures
  - 1. Authorization procedures
    - a. Personnel
    - b. Vehicles
    - c. Materials
  - 2. Identification and admittance procedures and systems
    - a. Personnel
    - b. Vehicles
    - c. Materials

3. Search procedures and systems for unauthorized materials and personnel
    - a. Personnel
    - b. Packages
    - c. Materials
    - d. Vehicles
    - e. Entrances to PA
    - f. Exit from MAA
    - g. Change rooms for accessible material
  4. Control points
    - a. Protected PA access
    - b. Manned MAA access
- D. Detection and Alarm Systems
1. PA Perimeter intrusion alarms
  2. Interior intrusion alarms
    - a. Penetration alarms - VA & MAA portals & MAA emergency exits
    - b. Space alarms - see B5 and 6 above
  3. Area surveillance systems and procedures
    - a. Exterior and interior
    - b. MAA two persons required
  4. Dual independent on site alarm stations
    - a. Manned
    - b. Hardened
    - c. Alarm location indication
    - d. Interior not visible from PA perimeter

5. Duress alarms
  - a. PA access
  - b. Between alarm stations
  - c. Guard patrols
6. Fail-safe and Tamper-indicating
- E. Communication Systems
  1. On-site guards and control centers
    - a. Continuous
  2. Off-site to LLEA or other assistance forces
    - a. Dual systems other than commercial telephone
    - b. Continuous
- F. Quality Assurance Program
  1. Tests and inspections
    - a. Design
    - b. Installation and construction
    - c. Preoperational
    - d. Operational
  2. Preventive maintenance
  3. Corrective action procedures
  4. Records and reports
  5. Audits
- G. Contingency and Response Plans and Procedures

Subject of separate rulemaking to be integrated and coordinated with upgrading rule. Required criteria to be included in appendices to Part 73.