

UNITED STATES
ATOMIC ENERGY COMMISSION
DIRECTORATE OF REGULATORY OPERATIONS
REGION I
970 BROAD STREET
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SEP 19 1972

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INSPECTOR'S EVALUATION
METROPOLITAN EDISON CO.
THREE MILE ISLAND UNIT 1
RO REPORT NO. 289/72-12

We inspected storage areas, quarantine areas, flood damage, work performed and records, all pertinent to the electrical and instrumentation portion of the installation. It was hoped that work in progress relating to safety-related cable pulling might be observed, but none was scheduled during the inspection. The Applicant did promise to alert RO when safety-related cable pulling was to be performed.

The Applicant, presently, does not verify cable pulled. They say they plan to, and have procured a H-P beeper, but need to develop procedures for its use and acquire a satisfactory probe.

From a population of safety-related cables pulled, connected, inspected, but not energized, we selected some for RO inspection and tried to verify these in the field. It was a very unsatisfactory operation.

They seem to have all cables tied down every six feet or so. Cables are identified by tags at critical points in their journey (i.e. when entering trays or when entering or leaving cabinets). These tags are fragile (their new tags are hardier) and are easily torn off. Since the cables are tied, you can't pull, jiggle or otherwise vibrate a cable to locate it at both ends of a tray or at a junction. Many ties had to be cut to seek out the cable's tag and more often than not the tag was missing. We urged the Applicant to firm up the electronic means for cable verification since RO had to verify a suitable sample and we didn't want to rip out half the plant in order to do so.

They seemed to have slackened off a bit on their vigilance in regard to quarantined storage.

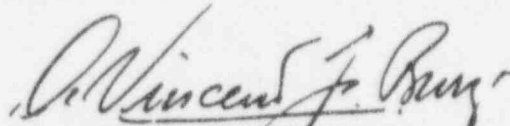
Their terminal array design below the control room leaves much to be desired. I've never seen such a chintzy set up. The terminal strips are mounted on uni-struts alongside cable trays just below the ceiling in the cable spread-

ing room. The terminals are all exposed, subject to all sorts of hazards during construction and also during maintenance operations.

Record keeping seems to be better organized now. New records are also instantly retrievable whereas those over a year old require considerable search. New records are serially numbered and recorded whereas the old records are searched by date and subject and subject matter.

Licensing should be asked for their view of the following:

1. Is the loss of a three-light display (only two of which are on at all times) adjacent to a circuit breaker switch mounted on the console sufficient information for the control room operator to infer that he has lost control dc on vital circuit breakers? Is not a window on the annunciator preferable?
2. The Applicant has decided to leave uncovered a series of terminal arrays located in the cable spreading room below the console. This action would expose the terminals to whatever hazards remain to the end of construction and to additional hazards encountered during troubleshooting and maintenance. They feel that the arrays are high enough off the floor to put them out of reach of meandering personnel. We feel that exposed terminals are never out of reach.
3. We should ask the Applicant to clarify his separations criteria. He feels that the terminal array is an extension of the console even though located in the room below and that, therefore, he need not satisfy criteria established for trays. However, even his redundant tray criteria is fuzzy. Paragraph 8.2.2.12c gives several different figures with the implication that if the separation between redundant channels is 12 inches or less then a barrier is used. This paragraph is not specific enough.
4. The U-shaped control console's interior (about 25 feet long) is without barriers, baffles or fire detectors. It is completely open from one end to the other. It would seem that a small fire could wipe out the entire console.


A. Vincent J. Burzi
Reactor Inspector