

NRC Exam Security and the Simulator

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Basis for NRC Examination Security

- 10 CFR 55.49 Integrity of examinations and tests
 - Applicants, licensees, and facility licensees shall not engage in any activity that compromises the integrity of any application, test, or examination required by this part. The integrity of a test or examination is considered compromised if any activity, regardless of intent, affected, or, but for detection, would have affected the equitable and consistent administration of the test or examination. This includes activities related to the preparation and certification of license applications and all activities related to the preparation, administration, and grading of the tests and examinations required by this part.

Basis for NRC Examination Security

- 10 CFR 55.49 Integrity of examinations and tests
 - ...if any activity...affected...or...would have affected the equitable and consistent administration of the test or examination.

Basis for NRC Examination Security

- 10 CFR 55.73 Criminal penalties
 - Section 223 of the Atomic Energy Act of 1954, as amended, provides for criminal sanctions for willful violation of, attempted violation of, or conspiracy of violate, any regulation issued under sections 161b, 161i, or 161o of the Act. For purposes of section 223, all the regulations in part 55 are issued under one or more of sections 161b, 161i, or 161o, ...

Xcel Energy Philosophy

- Can't stop a deliberate attempt to subvert the examination process.
- Can't even detect every attempt (Stuxnet).
- Expect that individuals that can obtain unescorted access (in most cases) will not do something silly.
- Focus on preventing inadvertent exposure of material.
- Include "reasonable" measures to assure exam security is assured if it is ever called into question.

Xcel Energy Philosophy

- What are “reasonable” measures and when is exam security called into question?
- An example;
 - An Initial License Candidate says that while he was being sequestered prior to taking his exam the individual that was sequestering him pointed out a recent change to a procedure that the candidate ended up using during his license exam scenario.
 - In reality the sequestering individual was cleaning up from the continuing training that occurred during the day and asked the candidate, “Have you been looking at this?”
 - Is this an exam security compromise?

Xcel Energy Philosophy

- If the sequestering individual is on the Initial License security agreement how can you prove that it wasn't? It now becomes one individual's word against another's.
- Xcel chooses, in most cases, not to put sequestering individuals on the security agreement and keep the crew from discussing the scenario until they have left site (a reasonable measure), so there is no possibility that any exam material could be passed on.
- Once exam security has been called into question do your policies allow you to prove that there was no exam compromise or is exam security based solely on the integrity of individuals?

Exam Security Alibi

- Legal *Alibi* – I was not there, I was at another place, so I could not have done the crime.
- Exam Security *Alibi* – I have not seen the exam or exam related material so I could not have passed along any information that was on it.

Common Simulator Exam Security Events

- The simulator is a giant data storage device.
- Any information that is left on the simulator from exam validation or administration may be considered exam material.
- If individuals that are NOT on exam security are allowed access to the material a potential exam security event has occurred.

Secret Simulator Data and Where to Find It

- Plant Process Computer History
- Plant Process Computer Trip Reports
- Backtrack Files
- Initial Condition Files
- System Backups
- Digital Control Systems
- Digital Recorders
- Printers and Copiers

Secret Simulator Data and Where to Find It

- At one of our facilities, a change to the PPC software (made by the PPC group) caused plant trip reports to be saved for each plant (simulator) trip.
- This condition occurred for months until an instructor stumbled across the history, which included validation scenarios for the upcoming annual operating exam.
- Exam security had been called into question and it was our job to determine if an actual exam compromise had occurred.

Answering the Question

- Using numerous features provided by Microsoft, the file access history was analyzed and cross referenced to the simulator schedule and access logs.
- No access overlap with examinees was found.
- The methodology and information was passed along to the NRC to ensure they concurred with our conclusion (that no exam compromise occurred).
- This would have been much easier if the data was destroyed before it was ever potentially exposed.

What our checklist includes...

- IC files
- Backtrack files
- Simulator history files
- PPC files
- Digital recorders
- Digital turbine controls
- Printers
- Copiers

Questions?