



What is a Healthy Simulator?

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Power Plant Simulator Simulation Conference

Is your simulator healthy?



How do you know?

What is an unhealthy simulator?

In 2005, the Hope Creek Simulator:

- Was listed on the plant degraded equipment list.
- Stopped simulator training for a requal segment for repairs.
- Had multiple databases with deficiencies.
- Was the only BWR using RELAP.
- Received a green finding from the NRC.



Definition

Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.

World Health Organization

Standard Measurements

Consistent High Performance Indicators

NRC 7111.11 inspections with no findings

Internal Audits with no findings

Low Number of Simulator Work Requests

Full compliance with ANSI requirements

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Why do I say the Hope Creek Simulator is Healthy?

Who is our customer?

Operators

Instructors

Plant

Management

Operators

- 1. Are the operators providing feedback on issues with the simulator?**
- 2. Are they commenting that it was able to teach them something new?**

Instructors

- 1. Are the instructors developing new methods to teach topics?**
- 2. Are they making log entries for potential issues?**
- 3. Are they willing to strongly argue for simulator improvements?**
- 4. Are they willing to use the Glass Panel Systems for “different” training?**

Do they use the simulator to help assist in resolving station questions?

Does the simulator challenge engineering studies?

Does the management consider the simulator a plant asset and invest in improvements?

Financing Methods for Our Projects

Capital Project

- RCS and Core Upgrade

Operations and Management (O&M) Projects

- Primary and Secondary Containment
- Electrical
- Fuel Pool
- HVAC – Radiation Release
- RWCU
- ECCS/RCIC – In progress
- Cooling Water Model Improvement
- Operating System Upgrade

Capital Tools Funding

- Glass Panel Simulator (2)
- Control Room Dynamic Drawings
- Dynamic drawings for 10 in-plant panels
- Digital Feedwater and Digital simulations

Project Management Funded

- Balance of Plant upgrade
- Cooling Water modeling

Corporate Energy Efficiency Project

- Replace panel lights with LEDs

How to get Management Support

- 1. Have a project plan for at least the next three years including costs.**
- 2. Enter the project in the plant Long Term Asset Management Plan.**
- 3. Get the project plan reviewed at least once a year by plant management. (I try to be on the PRC agenda in January of each year)**
- 4. Hope Creek's first project plan was to be completed in 4 years. Finished all items on that plan in 8 years.**
- 5. Understand the various methods of funding that is available.**

Unexpected causes of an unhealthy simulator

Infrastructure

- Networking
- HVAC
- UPS

How would your organization define a “Healthy Simulator?”