Paragon

The nuclear industry's most trusted supplier

TRTR 2023 - Thermo Fisher Gamma Metrics IP Acquisition Update

Safety Minute

Situational Awareness

Knowing what is going on all around you by having the ability to:

- Identify
- Process
- Comprehend
- Respond to

…critical elements of information regarding the environment in which you are located.

- **Respectful Work Environment**
  Trust and respect permeate the organization.
- **Environment for Raising Concerns**
  A safety conscious work environment (SCWE) is maintained where personnel feel free to raise safety concerns without fear of retaliation, intimidation, harassment, or discrimination.
- **Leadership Safety Values and Actions**
  Leaders demonstrate a commitment to safety in their decisions and behaviors
- **Personal Accountability**
  All individuals take personal responsibility for safety.
- **Questioning Attitude**
  Individuals avoid complacency and continuously challenge existing conditions and activities in order to identify discrepancies that might result in error or inappropriate action.
- **Effective Safety Communication**
  Communications maintain a focus on safety.
- **Decision-Making**
  Decisions that support or affect nuclear safety are systematic, rigorous, and thorough.
- **Continuous Learning**
  Opportunities to learn about ways to ensure safety are sought out and implemented.
- **Problem Identification and Resolution**
  Issues potentially impacting safety are promptly identified, fully evaluated, and promptly addressed and corrected commensurate with their significance.
- **Work Processes**
  The process of planning and controlling work activities is implemented so that safety is maintained.

Paragon

Safety Minute

Paragon's Nuclear Safety Culture in Action

Work Processes

As Paragon becomes the new manufacturer of the legacy Thermo Gamma Metrics Neutron Flux Monitoring product line, the work will be controlled under our existing processes and procedures.

Neutron Flux Monitoring Product Line

Highlights before Q&A

- Introduction
- Transition Status
- Quality Assurance
- Engineering and Design

Neutron Flux Monitoring Product Line

Introduction

In Late December 2022, Paragon Energy Solutions acquired an exclusive Licensing Agreement with Thermo Fisher for the Intellectual Property (IP) for the Thermo Gamma-Metrics Neutron Flux Monitoring Systems (NFMS) product line / business on a global basis.

This includes:

- Reg Guide 1.97 Post Accident Systems for monitoring post-accident neutron flux in Pressurized Water Reactors
- Source Range and Intermediate Range Fission Chamber based systems in PWRS
- Power Range systems that use both fission chambers and uncompensated ion chambers
- Complete Ex-Core NFMS Systems that cover all operational modes from cold start up through full power and post-accident scenarios.
- Test, Training and Research reactor systems at universities and government institutions across the world

Neutron Flux Monitoring Product Line

Introduction

Continued:

- Source Range, Intermediate / Wide Range, and Power Range Detectors
- In-Containment cables
- Junction Box
- Amplifier Cables
- Wide Range Amplifiers (Wall-mount Amplifier)
- High Voltage Power Supply
- Source Range Signal Processors
- Intermediate Range Signal Processors
- Power Range Signal Processors
- Pre-Amps, PCAs, Power Supplies and sub-assemblies
- All Drawings
- Qualification Test Reports (seismic, environmental, EMC, etc.…)
- Instruction Manuals

Neutron Flux Monitoring Product Line

Transition Status

We Are Ready!

- We’re open for business! Paragon has already received and processed several orders for spare parts, including new detectors and are processing RFQs for many more. We have ramped up our production line and have the staff in place to perform the work.
- We have several employees at Paragon who are previous TFS Gamma Metrics employees, which has helped ensure a smooth transition.
- Paragon will support this product line business from our Dallas Fort Worth facility
- We are standing up a field service team and can also provide training in support of existing installations

Neutron Flux Monitoring Product Line

Quality Assurance

Quality Assurance

- On the QA side, NUPIC has been notified of the change. Paragon considers maintenance of the Thermo Fisher design, manufacturing, assembly, inspection, test, and vendor oversight necessary to supply Neutron Flux Monitoring System items as safety related equipment all within the scope of the most recent NUPIC Audit No. 5101.
- Paragon is also working with TFS vendors to add to the Paragon AVL. Paragon and TFS had many vendors in common, so there are only a handful of vendors that we need to audit. Most audits have been successfully completed

Neutron Flux Monitoring Product Line

Engineering and Design

Engineering and Design

- Paragon will continue the same Part Numbers from Thermo Fisher. Paragon will become the new manufacturer of record.
- Paragon will certify to previous revisions of Thermo Fisher Drawings and certify to the original Qualification Reports.
- The product line has been transferred as a Safety Related entity and Paragon will control it as Safety Related under our Appendix B program and our Design Control procedures.
- Any change to a drawing (either due to obsolescence or other circumstances) will be documented under our ECN (Engineering Change Process) procedure which requires the engineer to evaluate any impacts this change may have to qualification. Majority of times these changes will have no impact and that will be documented as such, if a change is made that may impact qualification Paragon will then reperform applicable qualification testing. This process is very similar to Thermo Fisher's DCN process and provides the same review to ensure no changes will be made that adversely impacts form, fit, or function of the original design.

Neutron Flux Monitoring Product Line

Contacts

John Portillo
VP Sales Operations
(C): 817-239-1693
JPortillo@ParagonES.com

Clark Artaud
Consultant
(C): 858-442-3622
Cartaud@ParagonES.com

Paragon

Questions?