Project Overview

Purpose

- The Nuclear Energy Sensors website database (https://nes.energy.gov) is a resource for nuclear facilities, universities, and industry staff members to find sensor information used in the nuclear energy field. This website is intended to be used as a "one stop shop" to search for information related to nuclear energy sensors and prioritized needs and gaps. In addition to this content, the website also provides a method for users to suggest new sensors or other enhancements for inclusion in the database.

Objectives

- Maintain and expand website functionality, as needed, per sponsor requests.
- Collect and curate sensors to include in the database.
- Improve data quality of existing sensors by consolidating duplicate information, and expanding data captured.

Project Overview - Schedule

Ongoing Work

- The website is live with ongoing minor software updates, bug fixes and occasional functionality improvements.

- Information about sensors is continuing to be added, improved, expanded.

- PNNL is working on consolidating input from multiple sources, as appropriate, to minimize duplication.

Project Overview - Participants

- **PNNL Project Manager:** Shan Osborn
- **Principal Investigator:** Andy Casella
- **Sensor Researchers:** Jiyoung Son, Efren Ponce
- **Software Developers:** Shan Osborn, Jeanne Morgan, Christina Brasfield
- **Collaborators:** INL

Technology Impact

- Have grown from 74 sensors to 165.
- Nuclear Energy Sensors Database website is a resource for:
  - nuclear facilities
  - universities
  - industry staff members
- Without the website the ability search and find information related to nuclear energy sensors and prioritized needs and gaps in the nuclear energy field would be obsolete.
- Nuclear Energy Sensors Database Website supports a user forum for subject matter experts to build a community and provide additional suggestions for new sensors or site enhancements
- Previously developed sensor technology assessments have helped identify technology gaps and prioritize R&D efforts. However, there was a need for improved access and visualization of information to aid in these decisions which is the gave the NE Sensor filled.

Results and Accomplishments

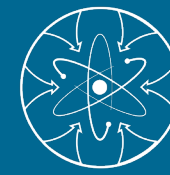| Field Name	Total Record Count	Number Filled In	Percentage Filled In
Title	165	165	100%
Sensor ID	165	165	100%
Applicable Reactor Types	165	161	97.58%
Measurement Type	165	147	89.09%
Sensor Type	165	142	86.06%
Sensor Technology	165	127	76.97%
Description	165	90	54.55%
Detector Element Design	165	67	40.60%
Accuracy	165	54	32.73%
Detection Sensitivity	165	48	29.09%
Measurement Range	165	63	38.18%
Response Time	165	26	15.76%
Published	163	N/A	N/A

Concluding Remarks

Future Work:

- Accessibility fixes

- Tagging all the sensors with the measurand category

- Continue researching sensor data

Shan Osborn

PNNL Project Manager

shan.osborn@pnnl.gov

W (509)-375-3853 | C (509)-528-7824

Thank You