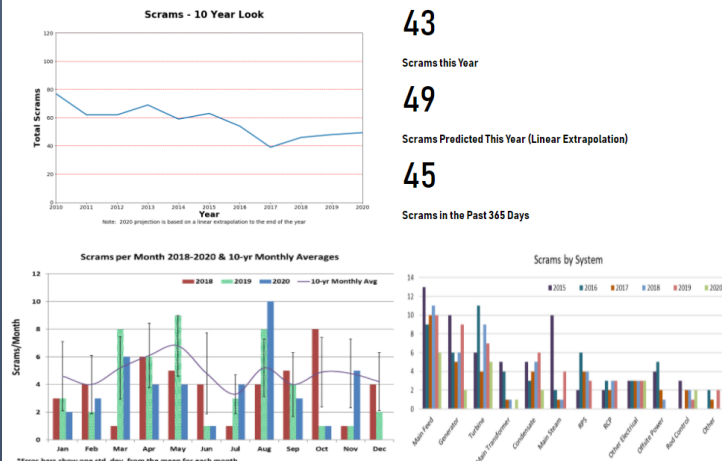


# NRC Operating Experience Artificial Intelligence Workshop

## An Overview

### OpE Scrams Dashboard

This dashboard summarizes the current status of scrams as of November 13, 2020. Last Scram: Limerick 1, 11/13/2020 (EN 54996) [Print/Save](#)



## Focus

- Machine learning / natural language processing applications for operating experience
- Progress to date
- Impacts to the reactor oversight process



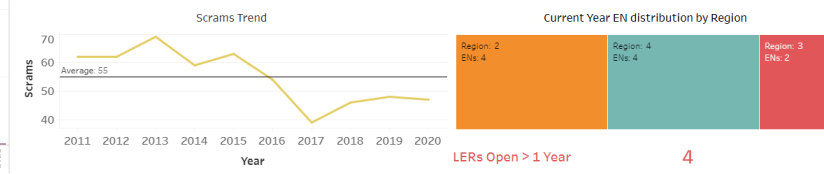
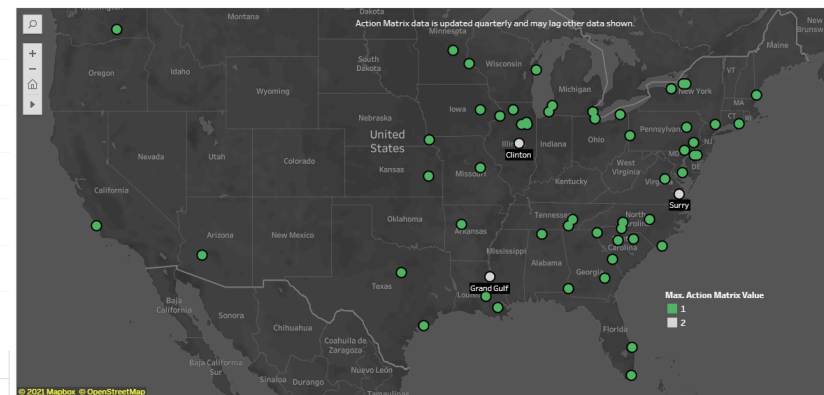
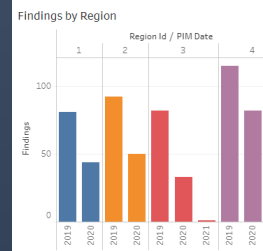
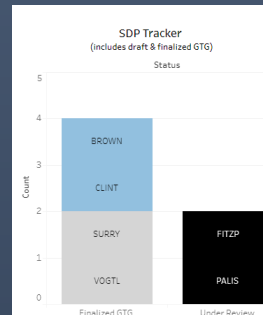
# ODAT

## Operating Experience Data Analysis Tool

Get Started

## Team

Jason Carneal  
Chris Speer  
Julie Winslow  
Rebecca Sigmon  
Lisa Regner



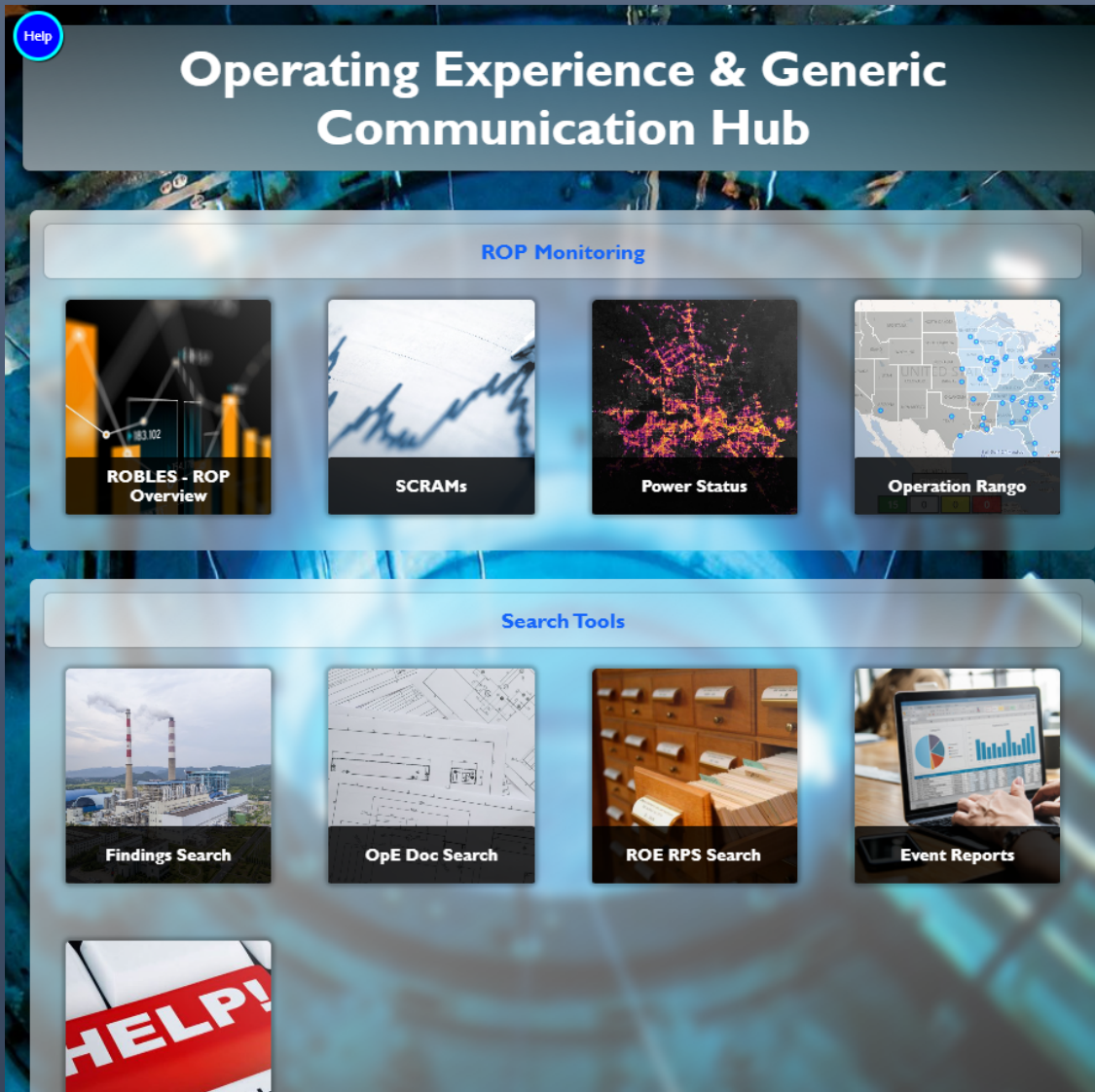
# OpE Artificial Intelligence Projects

The operating experience branch is developing machine learning / natural language processing algorithms to make our processes more efficient.

Automation of operating experience processing

Extending existing search tools to allow association of reports to inspection procedure, system, and available risk information

# OpE Hub – Deployed Products



## Consolidation of Deployed Products

- Website portal for NRC users
- One stop shop for all OpE products
- Easy to navigate
- Facilitates user interaction and support

# ROP Machine Learning Case 1

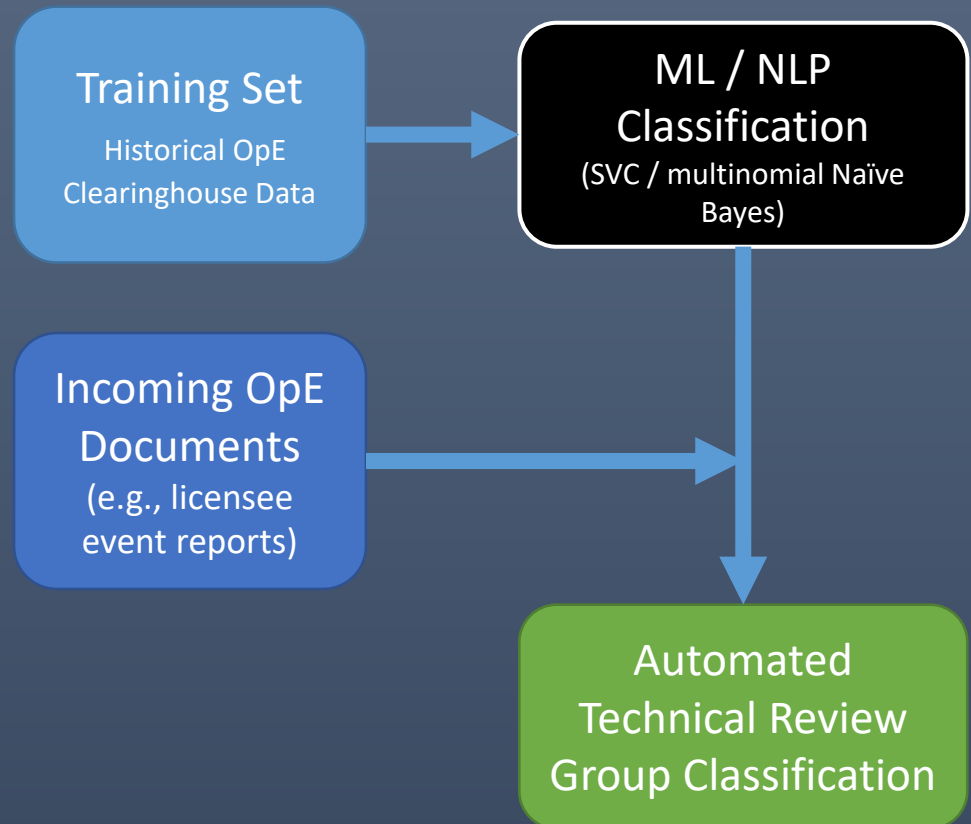
## Classification of Operating Experience Documents by Technical Review Group

### Objectives

- Build a classifier that can sort incoming OpE documents by technical review group
- Automate certain aspects of operating experience workflow

### Progress

- Working classifier for event notifications (ranges from 60%-90% accuracy depending on technical area)
- Exploring extension to licensee event reports



## ROP Machine Learning Case 2

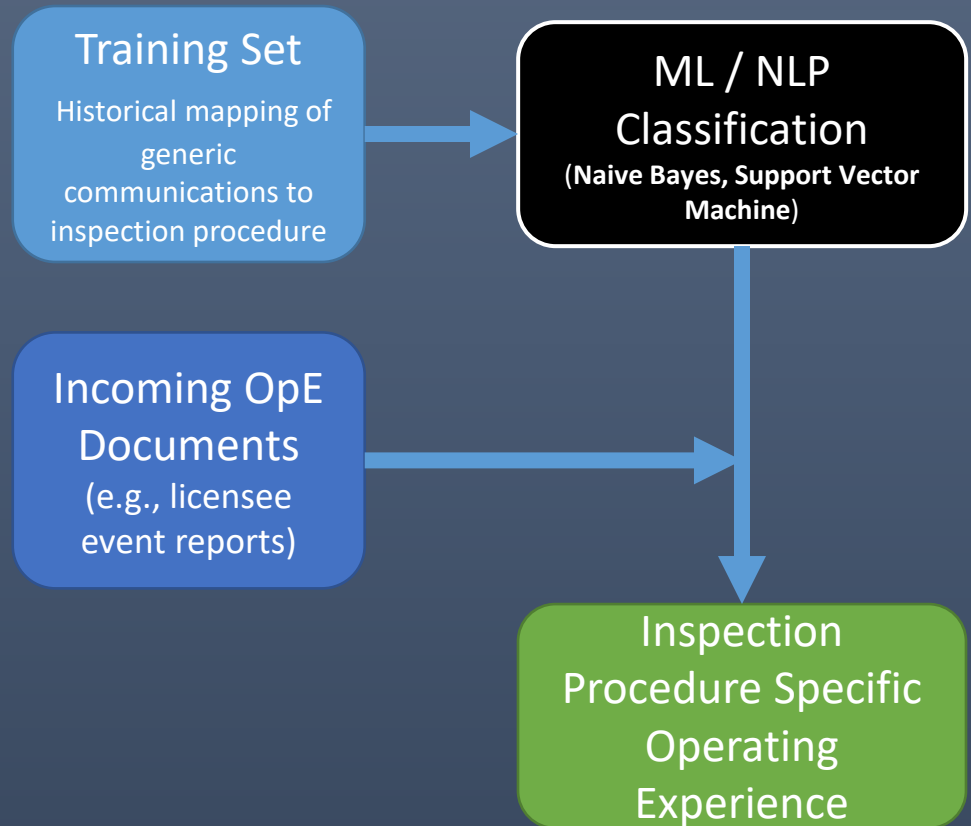
### Classifying Operating Experience Documents by Inspection Procedure

#### Objectives

- Build a classifier that maps OpE documents to applicable inspection procedures
- Expand to include different forms of classification (equipment types, failure modes, etc.)
- Deploy advanced search capability

#### Progress

- Generic Communication classifier built (ranges from 65-70% accuracy)
- Exploring extension to licensee event reports and other operating experience documents





## Offsetting redundant tasks

- Eliminating repetitive manual reports on popular topics
- Tools for inspectors / NRC staff / management to review data of interest
- Lowering bar of access to data for both internal and external users

## Improving data-driven decision-making

- Consolidating and democratizing access to sparse and difficult to access data
- Deploying tools that allow users to explore data on their own
- Sharing insights previously difficult to ascertain



# Operating Reactor Analytics Public Site

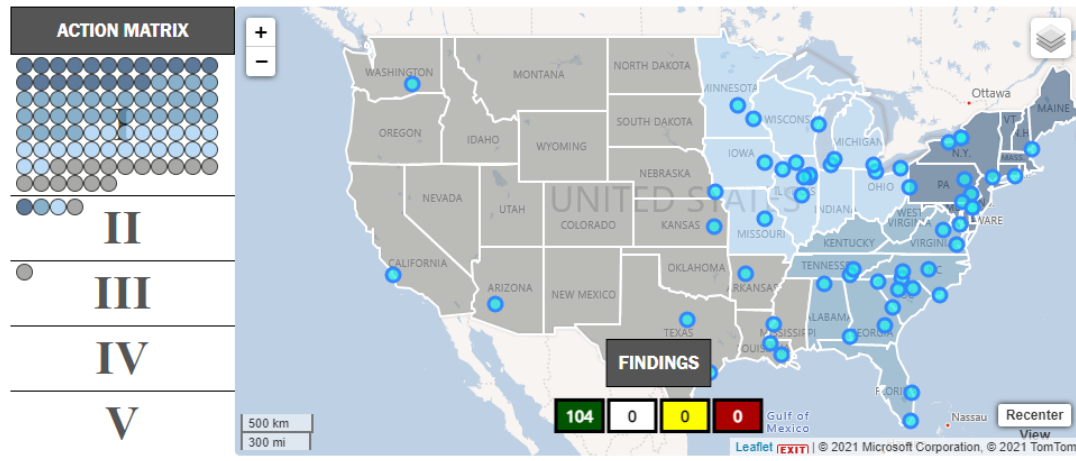
## OPERATING REACTOR ANALYTICS

Welcome to the Operating Reactor Analytics Page. This webpage provides a different view of several aspects of ROP oversight: Findings, Action Matrix, and Performance Indicators. This page is still in beta and will be updated to add functionality. If you have any comments or questions, please [Contact Us](#).

DISCLAIMER

## OVERVIEW

This section summarizes the current plant performance status and findings so far this calendar year. You can select sites by clicking them on the map, clicking them in the action matrix, or by searching for them in the toolbar above. You can also filter the findings to just the selected sites and highlight the plants in the action matrix. If you don't select a site you'll see data for all sites. The **FILTERS** button in the top right includes options such as selecting all sites in a Region or all sites associated with a particular utility.



## Public Site for Reactor Oversight Process Information

- Action Matrix
- Performance Indicators
- Findings

Lead Contact:  
Reed Anzalone  
NRR/EMBARK

<https://www.nrc.gov/reactors/operating/oversight/analytics.html>