

## MISSSED IGNITIONS AUDITS

### MISSSED IGNITIONS AUDITS BACKGROUND

---

PG&E's Electric Ignitions Investigations (EII) team – part of the Wildfire Risk Management organization – is responsible for tracking and investigating PG&E facility ignitions. Among other uses, PG&E reports this data to the California Public Utilities Commission (CPUC), per Decision 14-02-015, which requires utilities to report data related to facility fire-ignition incidents known to the utility beginning in June 2014.

In late 2020, the audit team performed a review of the Vegetation Incident Database with the goal of leveraging this data in EII's ignition investigations. While reviewing the vegetation database, the auditors discovered ignition records that were not accounted for in EII's historical tracker. These events are colloquially referred to as 'missed ignitions'.

The awareness of this gap prompted EII to perform a series of audits on PG&E's various electric incident systems of record, including the Field Application System (FAS), SAP, the Corrective Action Plan (CAP) database, the electric incident report (EIR) database, and the Transmission Operations Tracking and Logging (TOTL) system. The results of those audits are outlined below.

### AUDITS METHODOLOGY

---

The following is an outline of the methodology for performing the audits, providing documentation to assist the reviewers, and methods of communicating the results to interested parties:

- **QC Review Tracker** – EII created Excel trackers where the QC was performed. The population of records was split nearly evenly among 3 analysts. The spreadsheet was posted on a Teams page which allowed for simultaneous updates to the file. The input forms had an "Escalation" flag which the auditors used to request assistance from the EII support team regarding any issues or questions. The form also contained a section for recording details related to contacting front line workers and Troublemakers as well as a section for recording details related to 3rd party incident report requests. Lastly, the tracker contained fields to track EII certifications where an EII analyst certified the details and findings for each record. If EII did not agree with the findings or the information was inaccurate or incomplete, notes were entered regarding the specific discrepancy and the record was returned to the analyst for further review.
- **QC Job Aid** – EII created a job aid to provide step-by-step instructions on how to access and fill out the QC form in the QC review tool, how to access the systems of record – including TOTL, SAP, ILIS/OIS, Business Objects, and Google Earth – and how to contact Troublemakers or request 3rd party incident reports.
- **QC Dashboard and Status Updates** – EII developed dashboards to help track the progress of the audits and included visualizations showing overall completion percentage, the number of tags under review by "Review Status" to identify potential bottlenecks, the output of each analyst, and listed outstanding requests for information from Troublemakers and third-party agencies. EII also sent out regular status updates to leadership and stakeholders.
- **Sourcing** – EII selected a contractor to perform the audits. Their selection was based on their immediate availability and previous experience performing similar audit and record review projects for PG&E.

## **SAP “A” TAG AUDIT – SUMMARY, RESULTS & ACTIONS**

---

On March 10, 2021, a corrective action (CAP)<sup>1</sup> was assigned to the Electric Incident Investigations department stating “252 priority “A” EC tags created from 2/3/2021 to 3/9/2021 that may require further review, tracking, or reporting by the ignition investigations team due to notations or selected FDA in these tags suggesting an ignition event occurred.” The audit team performed a preliminary audit on the population of 252 “A” tags included in the CAP issue and found 4 PG&E facility ignitions that had not been previously identified in the EII ignition tracker.

Based on the results from the initial audit, EII determined it was necessary to perform a comprehensive audit of SAP “A” Tag for additional missed ignitions. This audit scope included a population of approximately 105,000 SAP “A” Tag records representing potential ignition incidents. The following steps were taken to arrive at this population of records:

- EII derived a list of Damage and Activity codes that are associated with all SAP Notifications previously investigated in the 2014 – 2021 ignition trackers
- The Electric Compliance team identified all tags in SAP “A” Tag with Damage and Activity codes matching the list and an incident date between January 1, 2014 and June 2, 2021

To refine the number of records requiring an in-depth review, the following parameters were used:

- EII applied the following parameters, which reduced the population of records from approximately 105,000 to 22,902:
  - Included all records that had one of the following keywords in the SAP “Long Text” column: fire, ignition, burn, arced, arcing
  - Excluded all records that had certain keywords in the SAP “Long Text” field that indicate the fire is not a PG&E facility ignition
  - Excluded all records where the Notification or OIS numbers matched those in the 2014-2021 ignition trackers and previous audits, removing the incidents had already been reviewed for CPUC reportability

The audit encompassed SAP “A” Tag records from June 2014 to March 2021 to allow correction, if appropriate, of past fire ignition reports to the CPUC under Decision 14-02-015.

### **RESULTS**

The audit began on June 29, 2021, and as of December 28, 2021, the audit was complete, having reviewed 99.7% of the 2014 – 2021 SAP “A” TAG records<sup>2</sup>.

The following are the results of the review of 22,902 records:

- 896 records (3.9%) were found to be PG&E facility ignitions
- Of the 894 PG&E facility ignitions, 22 (0.1%) were found to meet CPUC reportability criteria
- 1 of the records that occurred in 2021 met CPUC reportability criteria and will be included in the 2021 PG&E Fire Incident Data Collection report, which will be sent to the CPUC on April 1, 2022

### **ACTIONS**

The results from the audit were incorporated into the ignition tracker, which contains all ignitions investigated in the 2014 – Present ignition trackers as well as ignitions found through audits and other means. Presently, there is a lack of immediate controls to monitor EC “A” Tags ignitions due to the large volume of records and the low rate of reportable incidents. EII is in the process of addressing this gap by leveraging Palantir Foundry to improve the ignition intake process and develop a missed ignition detection tool.

---

<sup>1</sup> Attachment 01 – CAP 120627529

<sup>2</sup> Attachment 02 – SAP\_A\_Tag\_Audit\_Tracker\_20211228.xlsx

## **TOTL AUDIT – SUMMARY, RESULTS & ACTIONS**

---

This audit scope included a population of 21,546 Transmission Operations Tracking and Logging (TOTL) records representing potential ignition incidents. To arrive at this population of records, EII performed searches for all work cards, logs, and interruptions between June 1, 2014 to December 31, 2021 containing at least one of the following keywords: fire, ignition, burn, arced, arcing.

To refine the number of records that required an in-depth review, EII performed a preliminary review of 21,546 TOTL records to examine the “Remarks” fields for potential PG&E facility ignitions and flag those records as requiring further review. Also, any records that had been previously reviewed for CPUC reportability in the 2014 – 2021 ignition trackers were removed. The result was a total of 2,261 unique records.

### **RESULTS**

The audit began on February 3, 2022, and as of March 17, 2022, the audit was largely complete, having completed review of 100% of the records<sup>3</sup>.

The following are the results of the in-depth review:

- 99 records (4.4%) were found to be PG&E facility ignitions
- Of the 99 PG&E facility ignitions, 4 (0.2%) were found to meet CPUC reportability criteria
- 1 of the records meeting CPUC reportability criteria occurred in 2021 and will be included in the 2021 PG&E Fire Incident Data Collection report, which will be sent to the CPUC on April 1, 2022

### **ACTIONS**

The results from the audit were incorporated into the ignition tracker, which contains all ignitions investigated in the 2014 – Present ignition trackers as well as ignitions found through audits and other means. EII continually monitors the TOTL as well as the Trans-Sub Emails, which is an email distribution list with real-time updates from Grid Control Center System Dispatchers about any planned or unplanned outages on Transmission and Substation assets, for any potential missed ignitions.

---

<sup>3</sup> Attachment 03 – TOTL\_Audit\_Phase2\_20220318.xlsx

## **FAS 2.0 AUDIT – SUMMARY, RESULTS & ACTIONS**

---

In the original audit of FAS, completed on March 16, 2021, a keyword search for potential ignition events was performed on only the Primary Remarks field. There are several “Remarks” fields in FAS where an ignition event could be indicated – including Dispatcher Remarks, OFC Remarks, and EMR Remarks.

EII performed a keyword search on all “Remarks” fields to find any ignition events that were not identified in the initial audit of FAS. All FAS records that were reviewed in the initial audit of FAS as well as any records that were reviewed in the ignition tracker were removed, resulting in 517 additional FAS records requiring an in-depth review.

### **RESULTS**

The audit began on November 30, 2021 and was completed on February 17, 2022. The following are the results of the in-depth review<sup>4</sup>:

- 88 records (17%) were found to be PG&E facility ignitions
- Of the 88 PG&E facility ignitions, 15 (2.9%) were found to meet CPUC reportability criteria
- 3 of the records occurred in 2021 and will be included in the 2021 PG&E Fire Incident Data Collection report, which will be sent to the CPUC on April 1, 2022

### **ACTIONS**

The results from the audit were incorporated into the ignition tracker, which contains all ignitions investigated in the 2014 – Present ignition trackers as well as ignitions found through audits and other means.

EII continually monitors FAS for missed ignitions by receiving daily email notifications which contain all FAS tags from the previous day that were not marked as ignition incidents but contain an ignition event keyword in the Primary, Dispatcher, OFC, or EMR Remarks fields. The ignitions intake team reviews all possible events and inputs those that represent a potential PG&E facility ignition into the ignition tracker.

---

<sup>4</sup> Attachment 04 – FAS\_Audit\_2\_Phase2\_20220217.xlsx

### **VEGETATION OUTAGE DATABASE AUDIT – SUMMARY, RESULTS & ACTIONS**

---

This audit scope included a population of approximately 98 vegetation outage investigation records representing potential ignition incidents. To arrive at this population of records, EII performed a keyword search of the vegetation outage database records between August 14, 2016 to February 23, 2021 containing at least one of the following keywords: fire, ignition, burn, arced, arcing.

#### **RESULTS**

The audit began on February 24, 2021 and was completed on March 15, 2021. The following are the results of the in-depth review<sup>5</sup>:

- 90 records (91.8%) were found to be PG&E facility ignitions
- Of the 90 PG&E facility ignitions, 63 (64.3%) were found to meet CPUC reportability criteria

#### **ACTIONS**

The results from the audit were incorporated into the ignition tracker. EII has assigned an employee to monitor all incoming vegetation outage forms for potential missed ignitions.

### **EIR DATABASE AUDIT – SUMMARY, RESULTS & ACTIONS**

---

This audit scope included a population of approximately 264 electric incident report (EIR) records representing potential ignition incidents. To arrive at this population of records, EII performed a keyword search for all EIR records between January 1, 2014 to February 23, 2021 containing at least one of the following keywords: fire, ignition, burn, arced, arcing.

#### **RESULTS**

The audit began on March 9, 2021 and was completed on April 2, 2021. The following are the results of the in-depth review<sup>6</sup>:

- 29 records (11.4%) were found to be PG&E facility ignitions
- Of the 29 PG&E facility ignitions, all were found to meet CPUC reportability criteria

#### **ACTIONS**

The results from the audit were incorporated into the ignition tracker. EII has assigned an employee to monitor all incoming EIR events for EIR events that meet the definition of an ignition event.

### **CAP AUDIT – SUMMARY, RESULTS & ACTIONS**

---

This audit scope included a population of approximately 341 CAP records representing potential ignition incidents. To arrive at this population of records, EII performed a keyword search for all CAP records between April 25, 2016 to March 12, 2021 containing at least one of the following keywords: fire, ignition, burn, arced, arcing.

#### **RESULTS**

The audit began on March 30, 2021 and was completed on June 11, 2021. The following are the results of the in-depth review<sup>7</sup>:

- 39 records (11.4%) were found to be PG&E facility ignitions
- Of the 39 PG&E facility ignitions, 2 (0.6%) were found to meet CPUC reportability criteria

#### **ACTIONS**

---

<sup>5</sup> Attachment 05 – Veg\_Database\_Audit\_20210315.xlsx

<sup>6</sup> Attachment 06 – EIR\_Ignitions\_Tracker\_20210401.xlsm

<sup>7</sup> Attachment 07 – CAP\_Phase\_2\_Tracker\_20210611.xlsx

The results from the audit were incorporated into the ignition tracker. EII has assigned an employee to monitor the CAP database for all newly created CAPs.

### **CONCLUSION**

---

Several controls have been implemented to identify any ignitions that weren't reported through established means and to help address the root causes of the issue. Specifically, the following actions have been completed or are in progress:

- Partnered with IT to implement revisions to FAS to better self-guide the restoration team to identify ignition events – these enhancements were deployed in June 2021
- Partnered with the Asset Failure Analysis team on the field data collection improvement pilot
- Worked with the academy to implement an annual training requirement related to the use of the CPUC fire tab per our standards (RISK-6306S)
- Incorporated the review of all potential ignitions related FAS tags into the scope of the Ignitions Investigations Team
- Revising the RISK 6306-01 standard to include lessons learned from this audit as well as processes related to the ongoing review of FAS for potential missed ignitions
- Making improvements to filed-based applications to allow all user groups the ability to document ignition events in FAS. This is under development for end-of-year deployment.
- Building a tool in Palantir Foundry to search systems of record for ignition event keywords and compare those events to the ignition tracker, providing another level of redundancy. This tool is currently under development and will be ready for use by Q2, 2022

### **ATTACHMENTS**

---

- Attachment 01 – CAP 120627529.pdf
- Attachment 02 – SAP\_A\_Tag\_Audit\_Tracker\_20211228.xlsx
- Attachment 03 – TOTL\_Audit\_Phase2\_20220318.xlsx
- Attachment 04 – FAS\_Audit\_2\_Phase2\_20220217.xlsx
- Attachment 05 – Veg\_Database\_Audit\_20210315.xlsx
- Attachment 06 – EIR\_Ignitions\_Tracker\_20210401.xlsm
- Attachment 07 – CAP\_Phase\_2\_Tracker\_20210611.xlsx