WECC

# Under Frequency Load Shedding Work Group Update

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**Electric Reliability & Security for the West**

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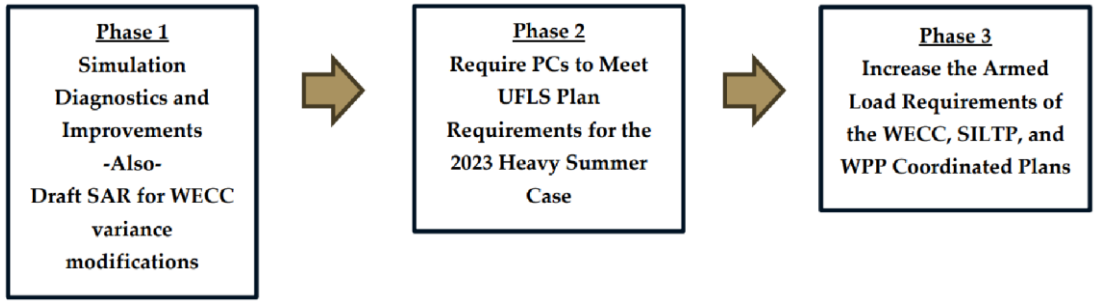
# UFLSWG Updates

- The 2024-2026 UFLS Assessment was completed January 27, 2026
  - The assessment publicly available on the WECC UFLS page: https://www.wecc.org/sites/default/files/documents/meeting/2026/2024%20to%202026%20UFLS%20Assessment%20Report.pdf
  - Assessment results to be shown in following slides
- With the successful UFLS Assessment, the Corrective Action Plan has been officially completed and closed as of February 10, 2026
  - Phase 1 of the CAP was successful which means Phases 2 and 3 were not required

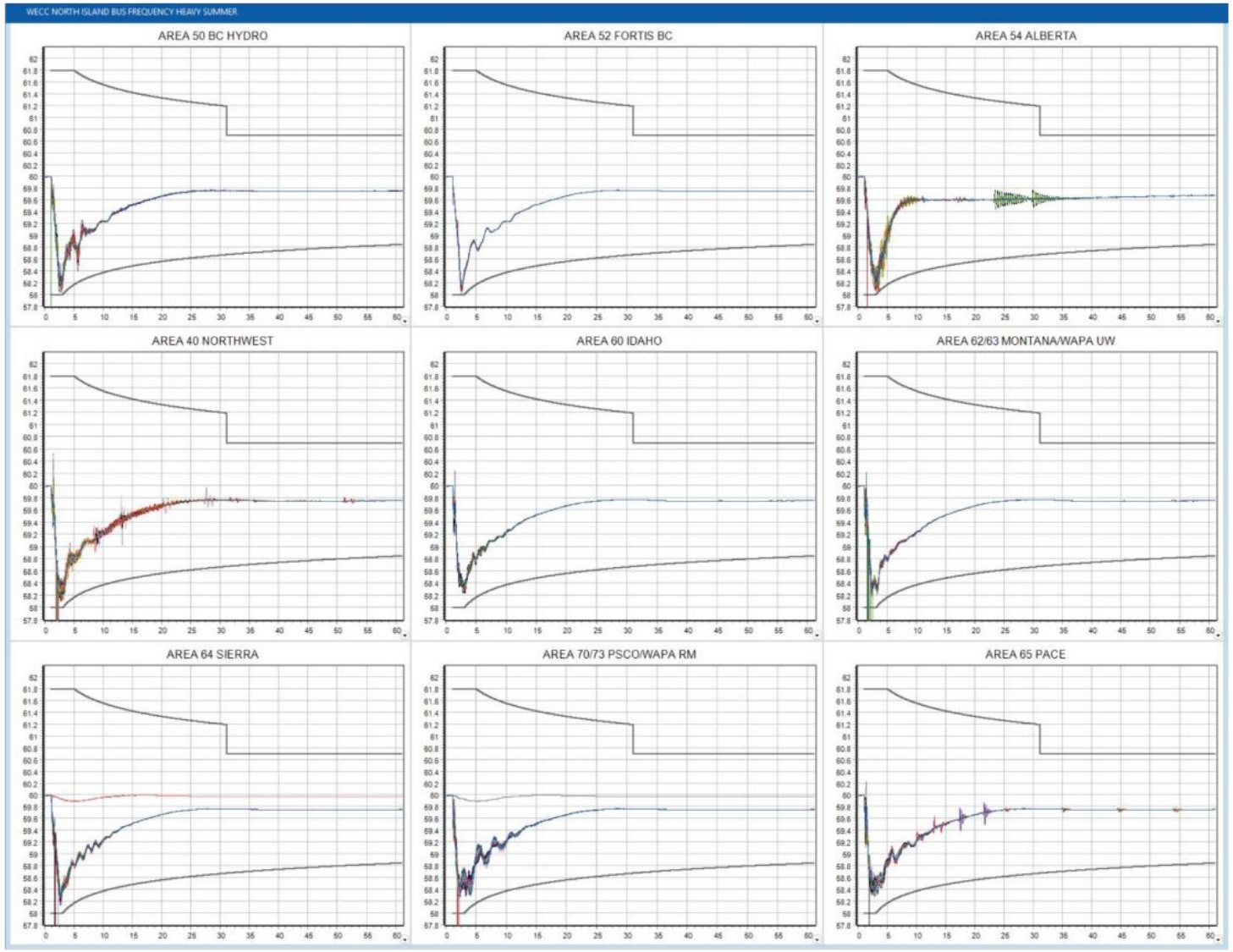



  - The CAP is also publicly available on the WECC UFLS page:

    https://www.wecc.org/sites/default/files/documents/meeting/2026/Completed%202-10-26_UFLS%20Corrective%20Action%20Plan.pdf

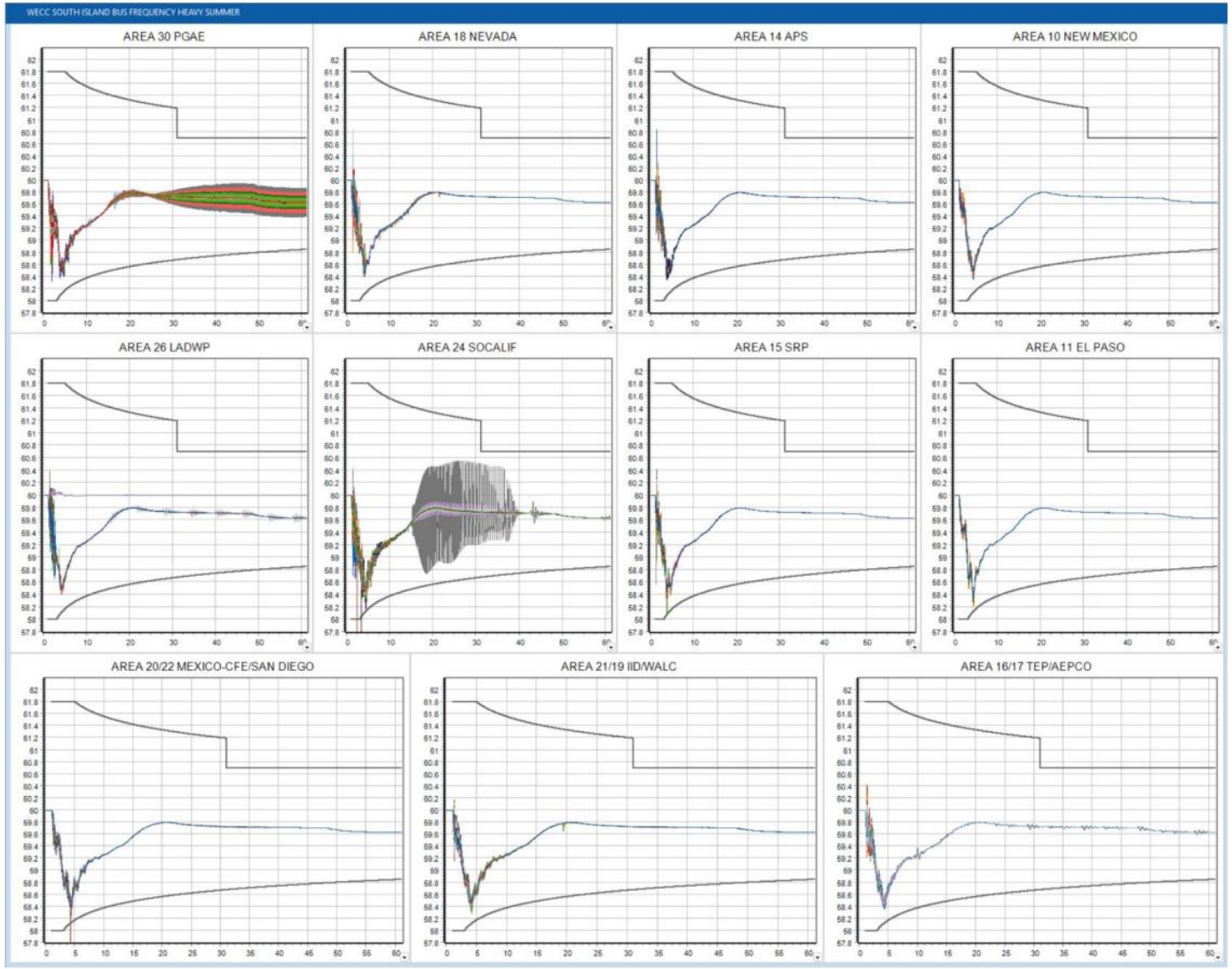
# Assessment Results

## 23HS4a1 — 25% With Delay — North Island Frequency



# Assessment Results

## 23HS4a1 — 25% With Delay — South Island Frequency



# Assessment Results

*Table 1: Study Results Summary*

| Case | Island | Island Load (MW) | Island Generation (MW) | Scenario | Target Gen Trip (MW) | Actual Gen Trip (MW) | Effective Imbalance (%) | Meets D.B.3.1 & D.B.3.2 Frequency | Meets D.B.3 V/Hz | Raw V/Hz Violations | Post-Utility Review Remaining V/Hz Violations |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2023 HS4a1 | North | 79,750 | 86,696 | 10% (No Delay) | 14,922 | 14,921 | 10 | Y | N | 63 | 1 |
| | | | | 20% (No Delay) | 22,897 | 22,898 | 20.002 | Y | N | 166 | 5 |
| | | | | 25% | 26,884 | 26,882 | 24.997 | Y | N | 219 | 7 |
| 2024 LSP2a1 | North | 59,583 | 61,688 | 10% (No Delay) | 8,063 | 8,064 | 10 | Y | Y | 24 | 0 |
| | | | | 20% (No Delay) | 14,022 | 14,021 | 20 | Y | N | 68 | 1 |
| | | | | 25% | 17,001 | 17,465 | 25.78 | Y | N | 124 | 3 |
| 2023 HS4a1 | South | 107,056 | 105,974 | 10% (No Delay) | 9,624 | 9,606 | 9.98 | Y | Y | 45 | 0 |
| | | | | 20% | 20,329 | 20,329 | 20 | Y | Y | 176 | 0 |
| | | | | 25% | 25,682 | 25,691 | 25.01 | Y | Y | 462 | 0 |
| 2024 LSP2a1 | South | 68,572 | 70,125 | 10% (No Delay) | 8,411 | 8,433 | 10.03 | Y | Y | 13 | 0 |
| | | | | 20% | 15,268 | 15,268 | 20 | Y | Y | 35 | 0 |
| | | | | 25% | 18,697 | 18,688 | 24.99 | Y | Y | 79 | 0 |

# Next Steps for the UFLSWG

| Time Period | Time Duration | Action |
|---|---|---|
| Now – August 2026 | 7 months | -UFLSWG updates:<br>• The Methodology Document<br>• The WECC Off Nominal Plan<br>-UFLSWG discusses lessons learned from the previous assessment |
| August 2026 – December 2026 | 4 months | UFLSWG put together generator tripping lists and builds 10, 20, and 25% NI and SI contingencies |
| January 2027 – January 2028 | 12 months | PowerWorld under contract and performing assessment |
| January 2028 | | 2026-2028 UFLS Assessment Complete |

# Tentative Base Cases for the Next Assessment

| Case | Date Data Request Mailed | Date Data Due to Sub-Coordinate L&R Info | Date Data Due to Area Coordinator | Date Area Coordinator Due to WECC Staff | WECC Staff Send Case for Review | Date Comments Due to Area Coordinator | Date Area Coordinator Comments Due to WECC Staff | WECC Staff Finalize Date |
|---|---|---|---|---|---|---|---|---|
| 2035-36 HW1* | 4/11/25 | 5/2/25 | 5/9/25 | 6/6/25 | 6/27/25 | 7/18/25 | 8/8/25 | 8/29/25 |
| 2036 HS1* | | | | | | | | |
| 2026 HS4S* | 5/9/25 | 5/30/25 | 6/6/25 | 6/27/25 | 7/18/25 | 8/8/25 | 9/5/25 | 9/26/25 |
| 2027 LA1S | 9/12/25 | 9/26/25 | 10/3/25 | 10/24/25 | 11/21/25 | 12/12/25 | 1/16/26 | 2/6/26 |
| 2026-27 HW3-OP | 10/10/25 | 10/31/25 | 11/7/25 | 12/5/25 | 1/9/26 | 2/6/26 | 2/27/26 | 3/27/26 |
| 2026-27 LW1-OP | | | | | | | | |
| 2027 HSP1-OP | 11/7/25 | 11/26/25 | 12/5/25 | 1/9/26 | 2/6/26 | 2/27/26 | 3/20/26 | 4/10/26 |
| 2031-32 HW2 | 12/5/25 | 12/19/25 | 1/9/26 | 2/6/26 | 3/6/26 | 3/27/26 | 4/17/26 | 5/15/26 |
| 2032 HS2 | | | | | | | | |
| 2027 HS3-OP | 3/13/26 | 4/3/26 | 4/10/26 | 5/8/26 | 6/5/26 | 6/26/26 | 7/17/26 | 8/7/26 |
| 2027 LS1-OP | | | | | | | | |
| 2036-37 HW1 | 4/10/26 | 5/1/26 | 5/8/26 | 6/5/26 | 7/3/26 | 7/24/26 | 8/14/26 | 9/4/26 |
| 2037 HS1 | | | | | | | | |
| 2046 HS1S | 5/8/26 | 5/29/26 | 6/5/26 | 7/10/26 | 7/24/26 | 8/14/26 | 9/11/26 | 10/2/26 |

# Updates to the UFLS Methodology Document

- Language is to be added that allows staged tripping to the generation in the imbalance contingencies, rather than tripping all generation instantaneously. The criteria is as follows:

  *For the 25% imbalance contingency, each area's bus frequency must reach the lower frequency set points of its relevant UFLS Plan. The lowest frequency set points for each plan are:*

  - *WECC: 58.3Hz*
  - *WPP: 58.6Hz*
  - *SILTP: 58.3Hz*

  *Generation tripping delays are not to exceed 2 seconds (all generation is to be tripped between time t=1 and t=3 seconds)*

# Updates to the UFLS Methodology Document

- The WECC Island will no longer be required to be studied, just the North and South Islands
- Frequency is to be measured across all buses in each island, not just a select few
- The methodology will now allow for the application of a generic dynamic model to a generator when the relevant entity does not respond

# Other UFLSWG Updates

- Ron Marlow from SRP has been appointed the Vice Chair of the work group
- As of August 2026, I will have reached two terms (four years) as UFLS Chair and will be stepping down

ELECTRIC RELIABILITY & SECURITY FOR THE WEST

# ENGAGE WITH WECC

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