# WPL – Additional Analysis into the Quantitative Approach to Maintenance Outages and Add Back Issue

DRS

February 12, 2018

- Stakeholders requested additional information on the quantitative approach:
    - Example illustration - outage
    - Example illustration – LM event
    - Analysis of actual historic data
        - Compute number of excludable days
            - By customer size
                - » By exclusion usage threshold level

Example Load Data
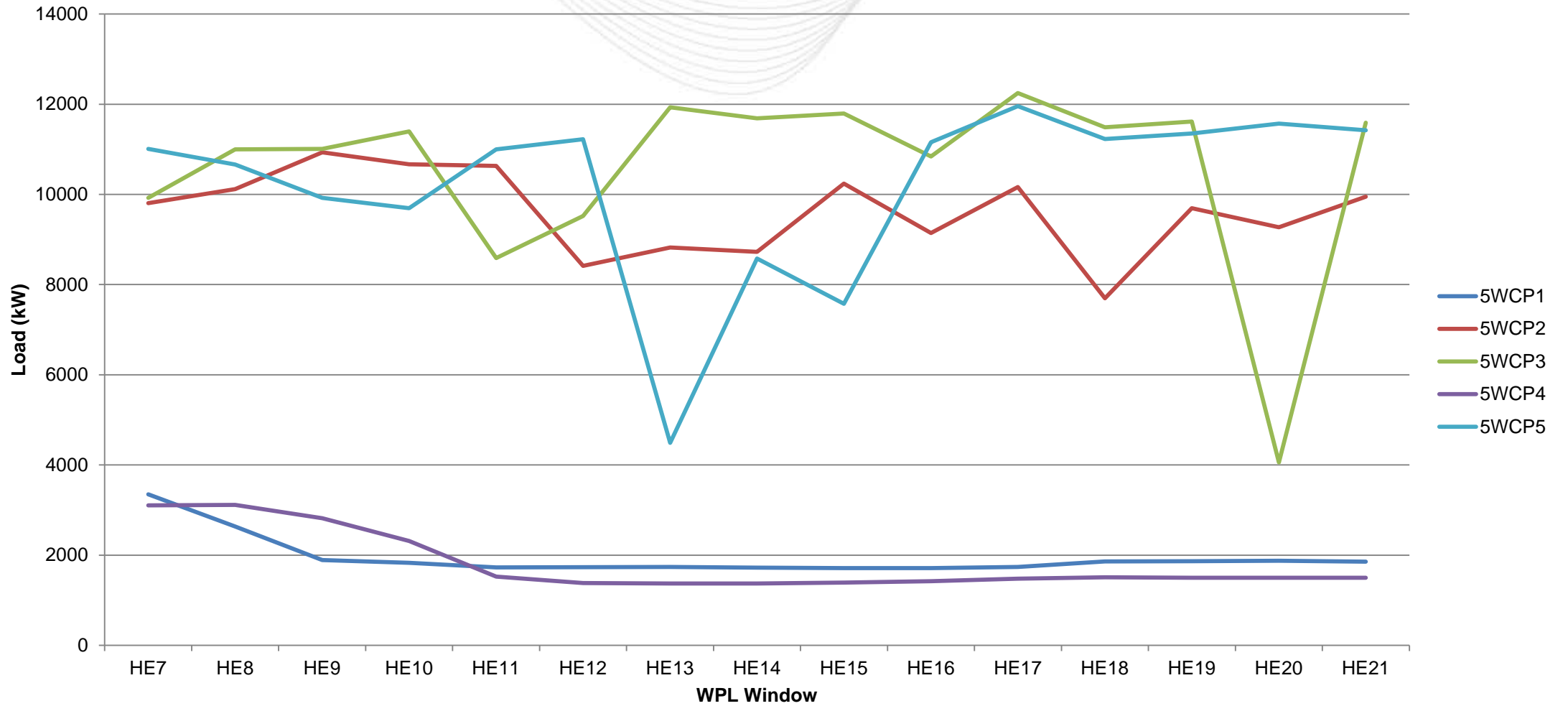
Facility Outage – Quantitative Approach Example

Date	5WCP1	5WCP2	5WCP3	5WCP4	5WCP5		
EDC Account #	0123456789						
HE1	10,513	11,638	12,399	11,612	11,396		
HE2	10,493	12,345	11,637	11,155	9,645		
HE3	10,606	11,226	11,726	11,581	10,063		
HE4	8,663	12,616	10,204	9,529	10,325		
HE5	7,515	12,158	9,307	8,409	11,638		
HE6	3,863	10,321	10,090	10,360	11,256		
HE7	3,351	9,804	9,924	3,104	11,008		
HE8	2,636	10,116	10,997	3,114	10,661		
HE9	1,890	10,931	11,008	2,822	9,926		
HE10	1,830	10,669	11,399	2,316	9,696		
HE11	1,728	10,632	8,588	1,523	10,999		
HE12	1,732	8,416	9,522	1,381	11,223		
HE13	1,741	8,825	11,931	1,374	4,494		
HE14	1,722	8,726	11,685	1,371	8,580		
HE15	1,715	10,240	11,794	1,390	7,574		
HE16	1,713	9,145	10,840	1,421	11,158		
HE17	1,740	10,161	12,250	1,477	11,956		
HE18	1,859	7,698	11,489	1,509	11,227		
HE19	1,868	9,693	11,618	1,500	11,352		
HE20	1,876	9,272	4,059	1,498	11,572		
HE21	1,855	9,948	11,592	1,499	11,422		
HE22	1,872	10,021	11,748	1,507	12,111		
HE23	1,891	10,093	9,751	1,492	11,882		
HE24	1,920	10,168	3,199	1,499	10,337		
						Avg	35%
Avg7_21	1,950	9,618	10,580	1,820	10,190	6,832	2,391
Peak7_21	exclude LU	10,931	12,250	exclude LU	11,956	11,712	

Example Load Data
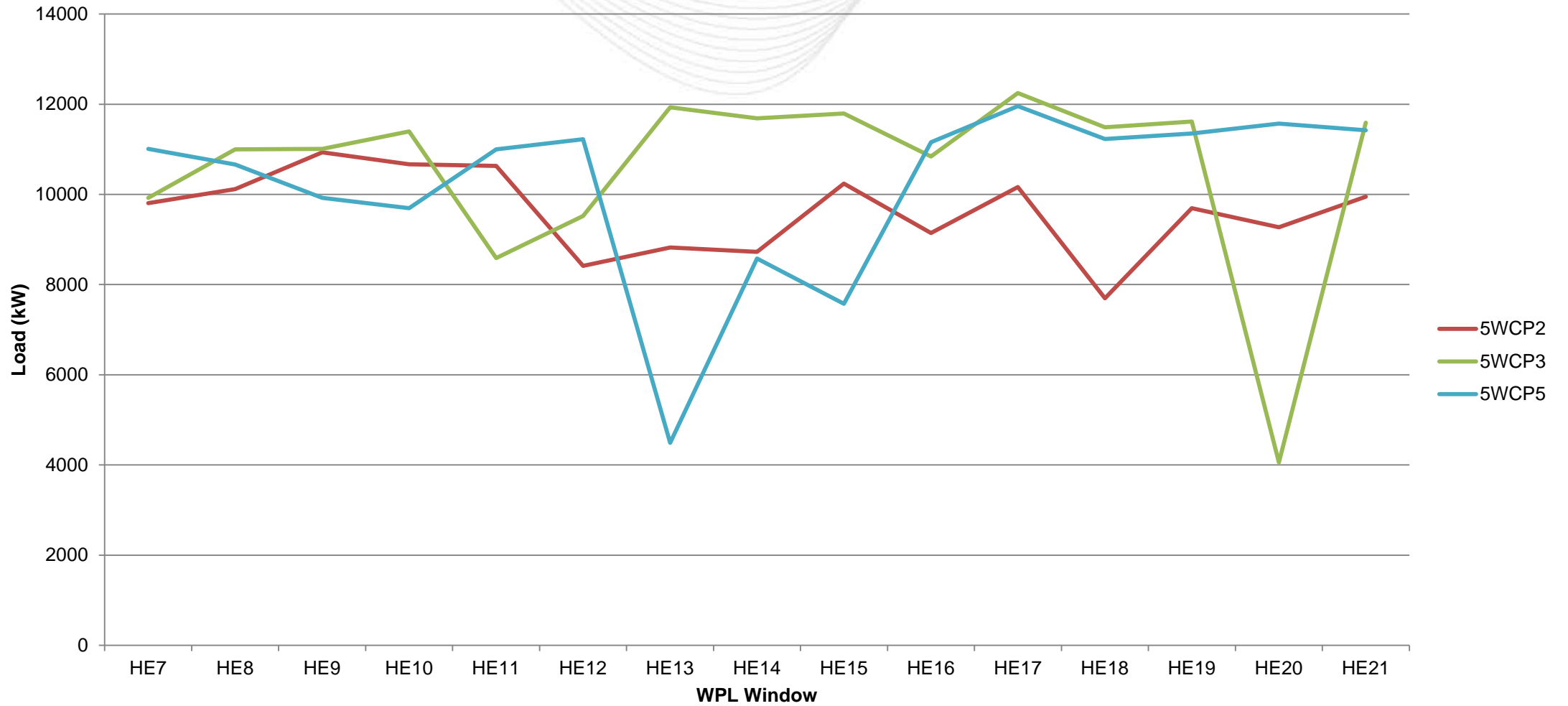
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HE5	13,491	12,158	9,307	8,409	11,638		
HE6	11,654	10,321	10,090	10,360	11,256		
HE7	11,137	9,804	9,924		11,008		
HE8	11,449	10,116	10,997		10,661		
HE9	12,264	10,931	11,008		9,926		
HE10	12,002	10,669	11,399		9,696		
HE11	11,965	10,632	8,588		10,999		
HE12	9,749	8,416	9,522	LM Event	11,223		
HE13	10,158	8,825	11,931		4,494		
HE14	10,059	8,726	11,685		8,580		
HE15	11,573	10,240	11,794		7,574		
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HE20	10,605	9,272	4,059	1,498	11,572		
HE21	11,281	9,948	11,592	1,499	11,422		
HE22	11,354	10,021	11,748	1,507	12,111		
HE23	11,426	10,093	9,751	1,492	11,882		
HE24	11,501	10,168	3,199	1,499	10,337		
						Avg	35%
Avg7_21	10951	9,618	10,580	exclude LM	10,190	10,335	3,617
Peak7_21	12,264	10,931	12,250	exclude LM	11,956	11,850	

- Source Data – 2009/2010 Winter Load Data for "5WCP" days
  - From KEMA CBL study
  - Approximately 3,600 accounts
- Accounts segmented into four size buckets
  - 100-500 kW
  - 500-1000 kW
  - 1000kW – 10MW
  - 10MW and over
- Six usage threshold levels
  - 5%, 15%, 25%, 35%, 45% and 55%

- Across all size buckets and threshold levels, over 91% of accounts would use all 5 days in WPL calculation and have no excludable days

- If allowed 2 excludable days, over 99% of accounts would be covered
    - true even at the 55% threshold level

- Looked at another way, less than 1% of accounts would have more than 2 excludable days from their WPL calculation at the 55% threshold
    – Manual exception process if more than 3 days are excludable

- Number of excludable days decreases as threshold decreases

100-500 kW Account Exlusion Hour Frequency Analysis
(2009/2010 Winter "5CP" days, ~1,700 accounts)

100-500 kW Account Exlusion Hour Frequency Analysis

(2009/2010 Winter "5CP" days, ~1,700 accounts)

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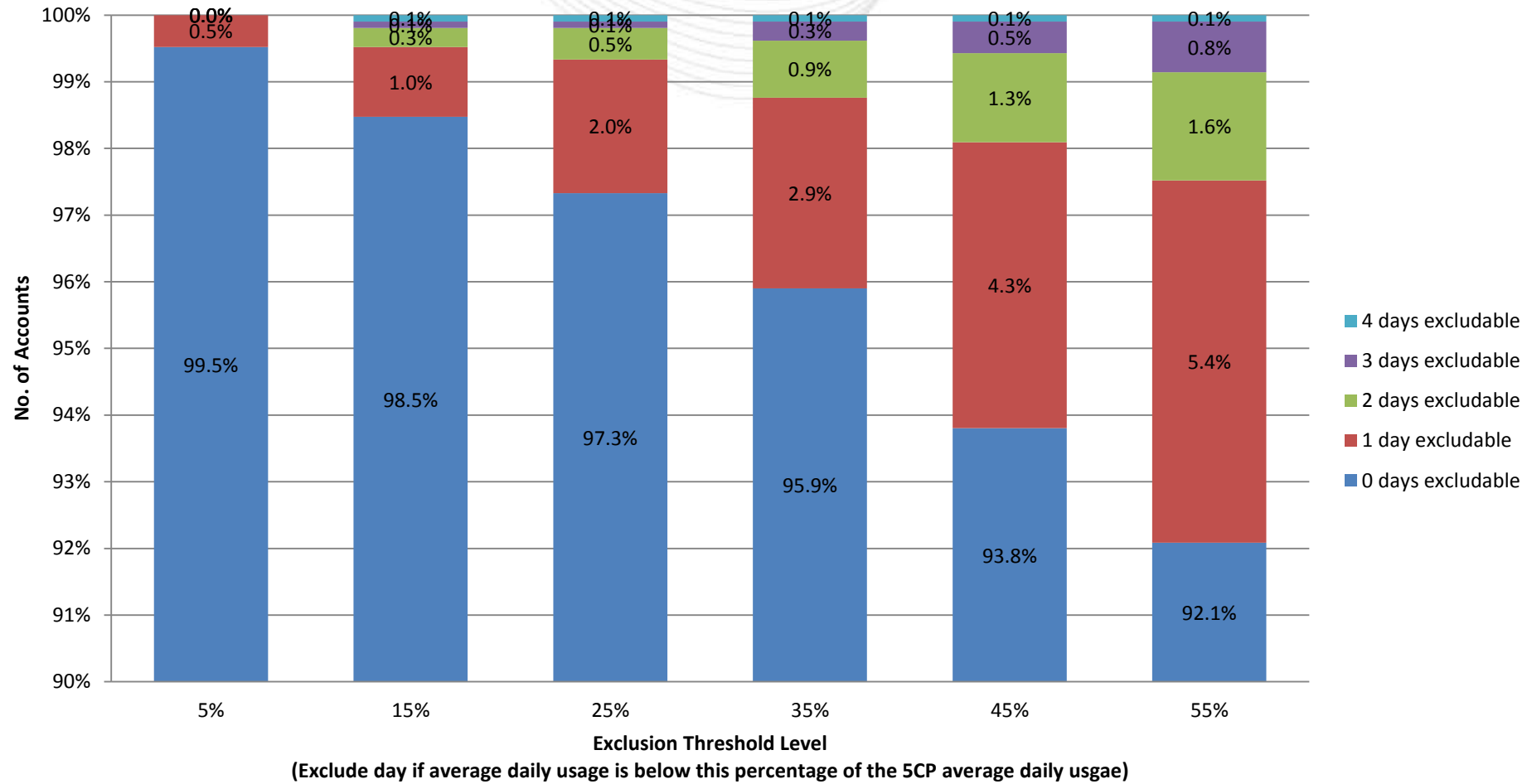**500-1000 kW Account Exlusion Hour Frequency Analysis**
(2009/2010 Winter "5CP" days, ~1,000 accounts)

500-1000 kW Account Exlusion Hour Frequency Analysis
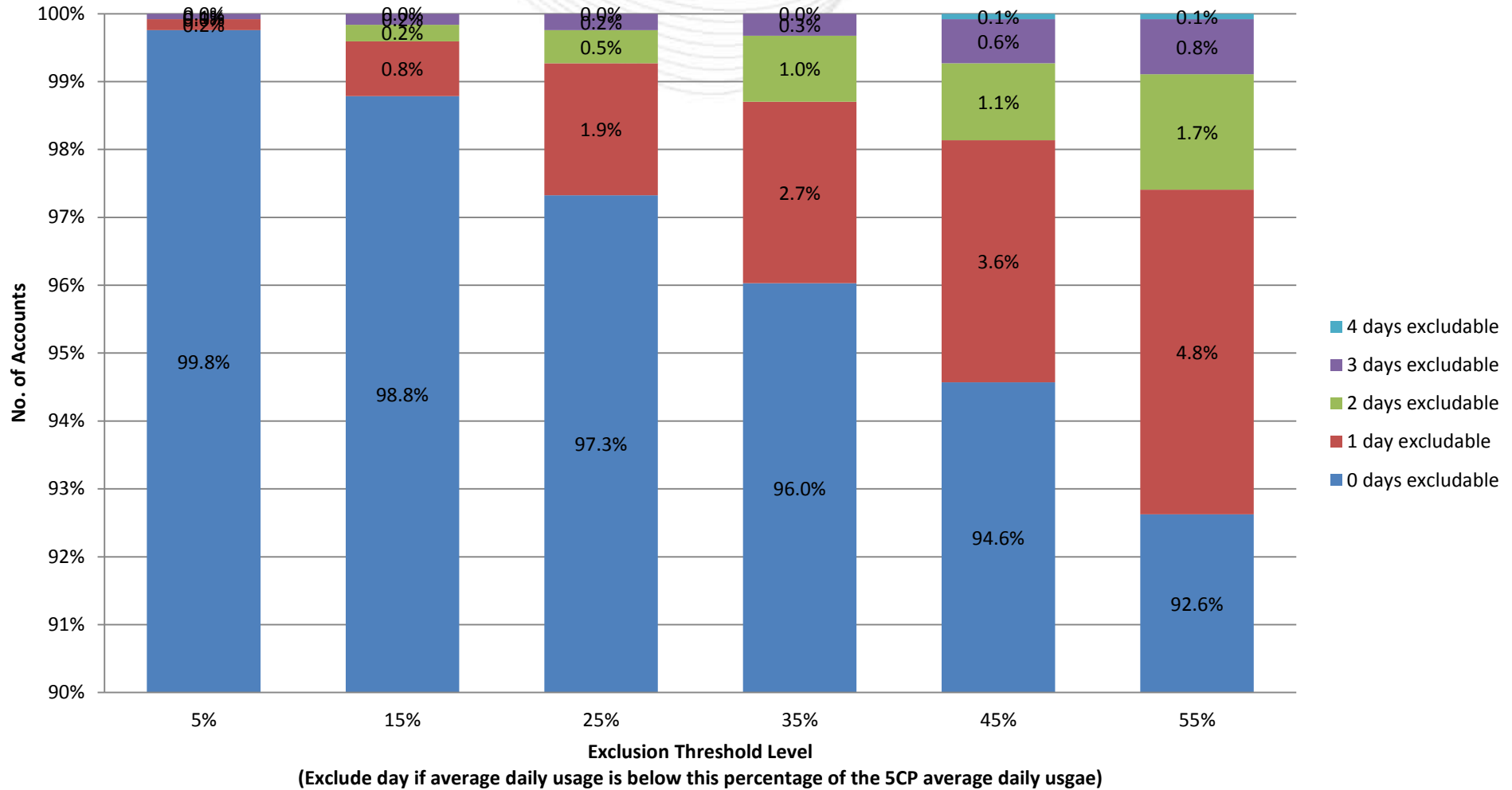(2009/2010 Winter "5CP" days, ~1,000 accounts)

1000-10000 kW Account Exlusion Hour Frequency Analysis
(2009/2010 Winter "5CP" days, ~1,200 accounts)
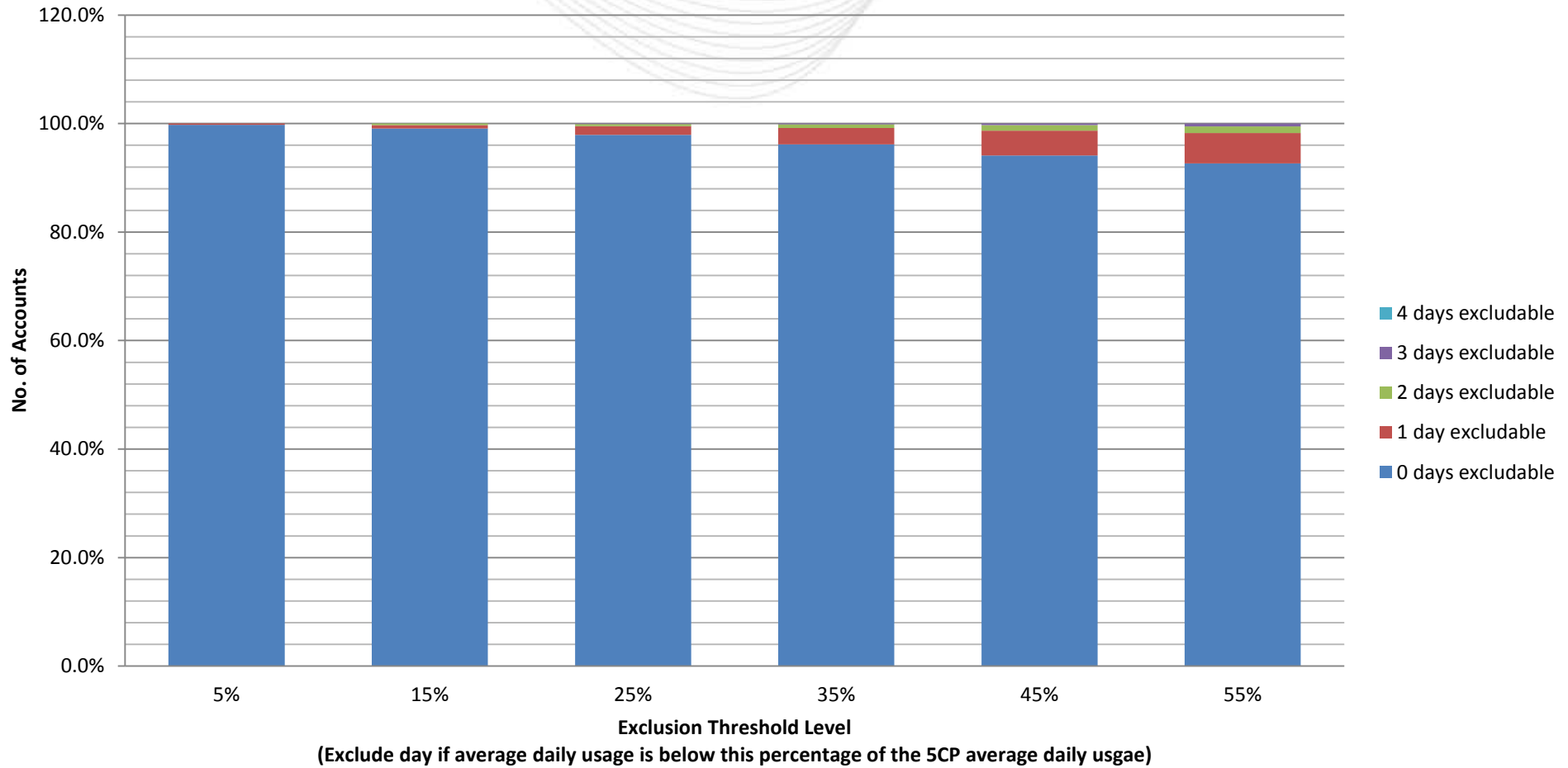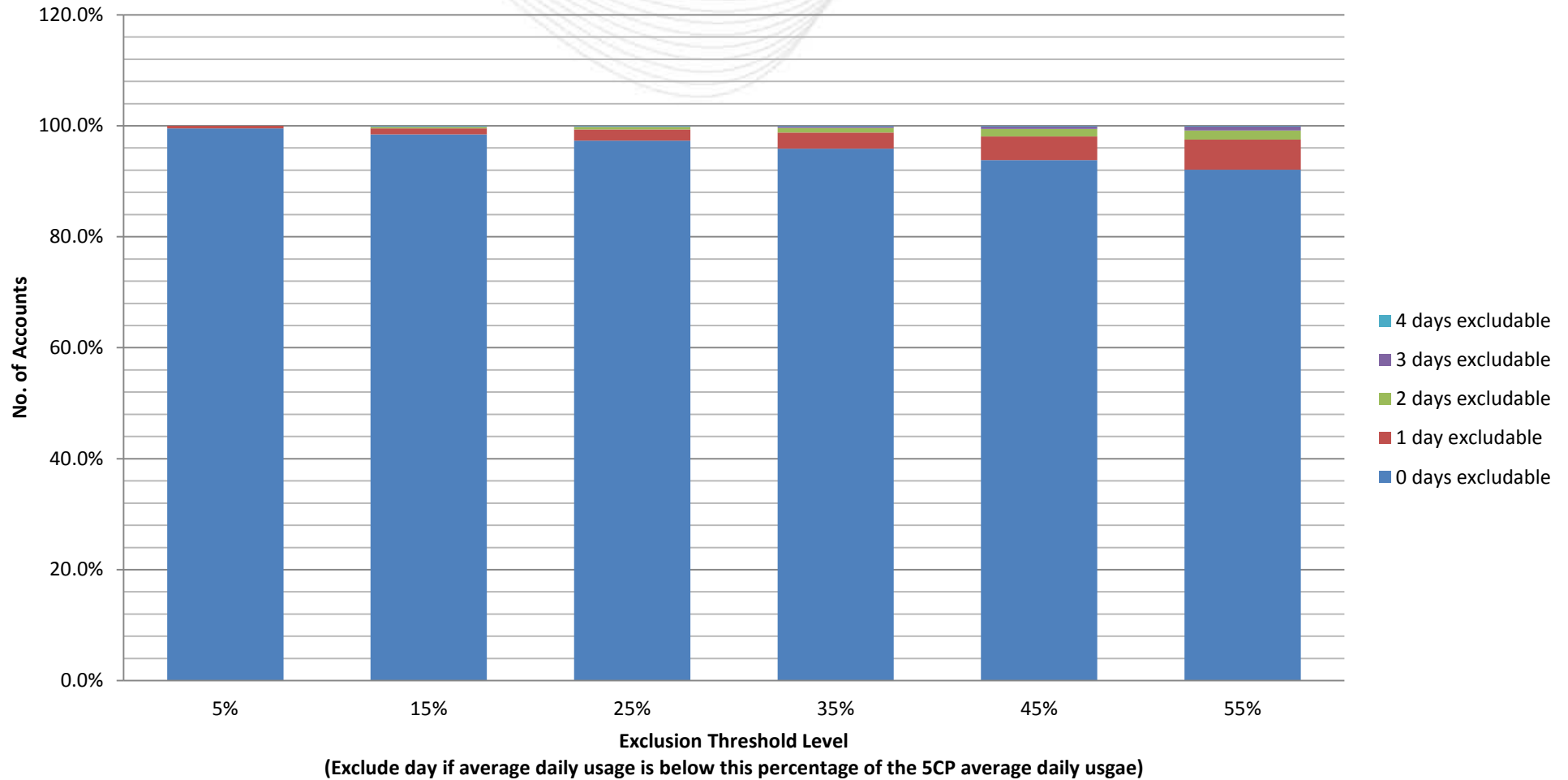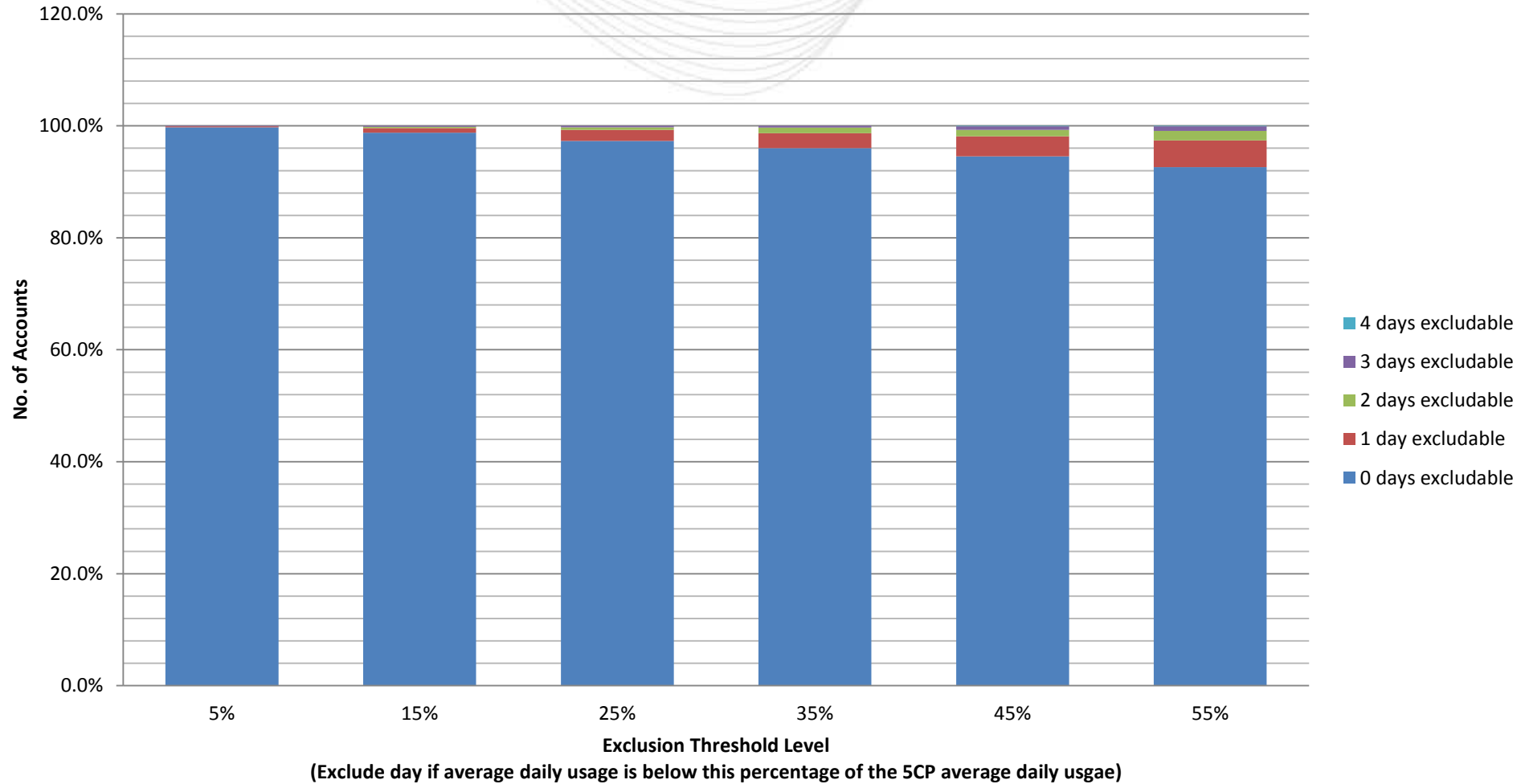
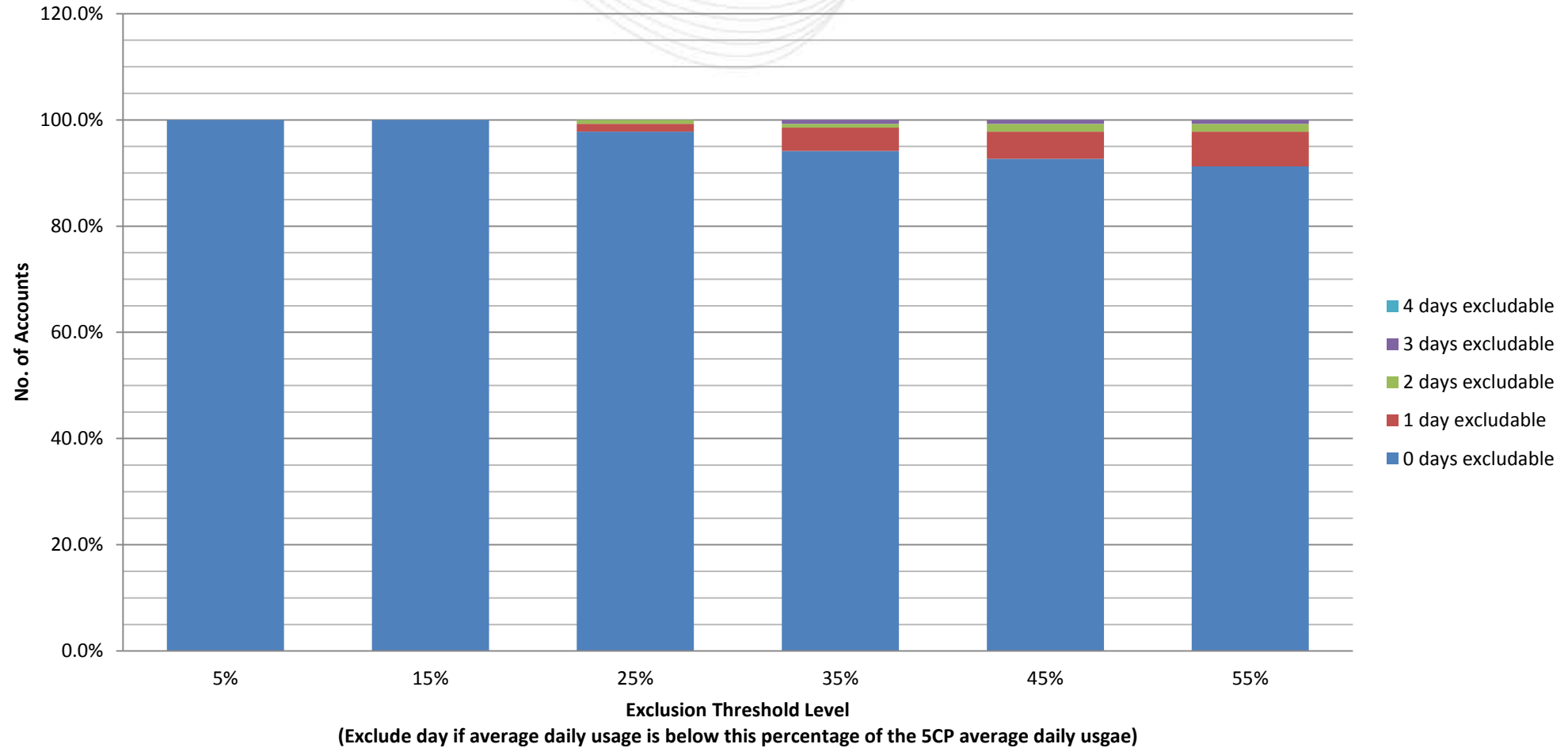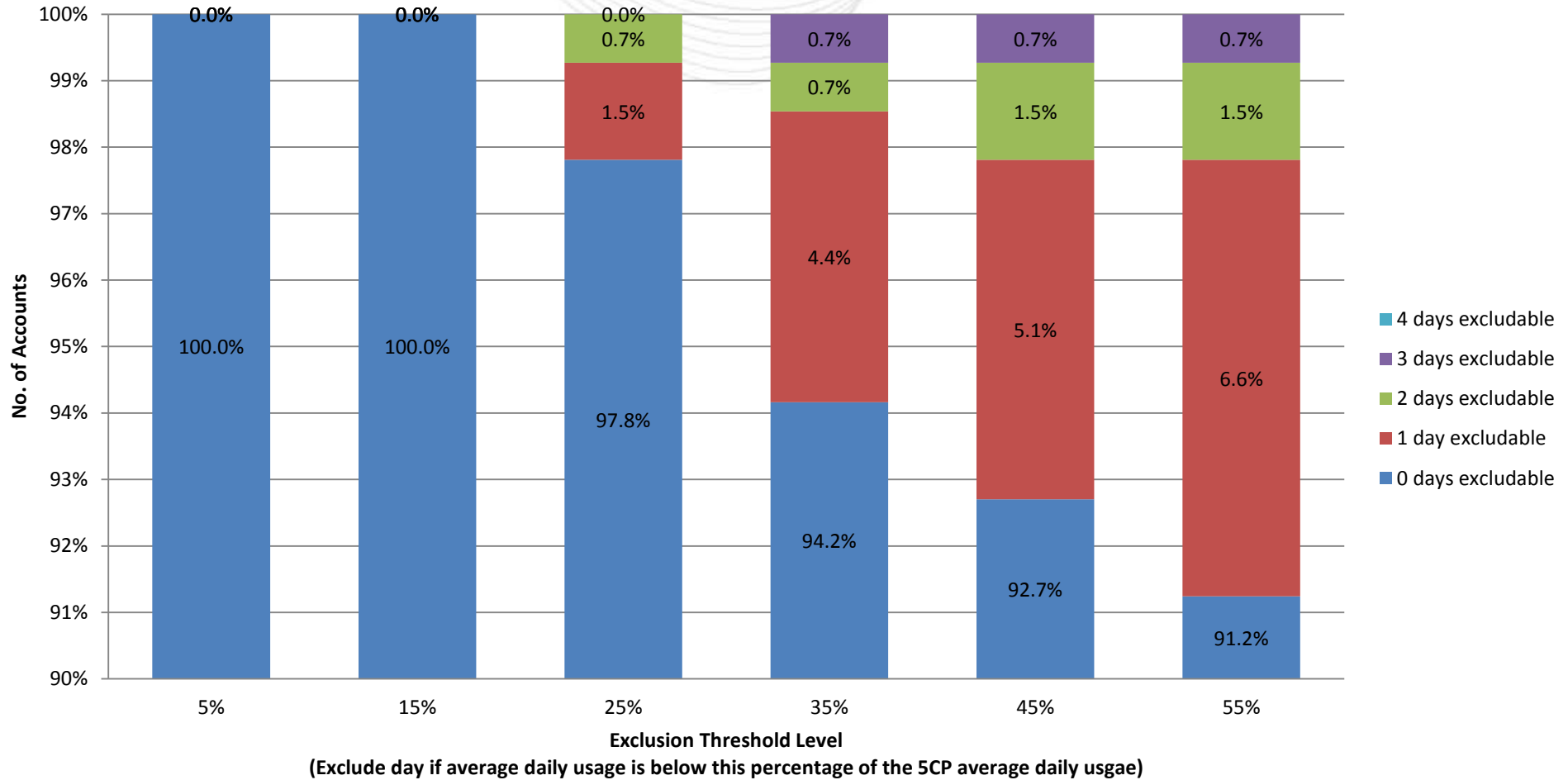Exclusion Day Frequency – 1MW to 10 MW accounts (Zoomed in)

1000-10000 kW Account Exlusion Hour Frequency Analysis
(2009/2010 Winter "5CP" days, ~1,200 accounts)

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10000 and over kW Account Exlusion Hour Frequency Analysis
(2009/2010 Winter "5CP" days, ~137 accounts)

10000 and over kW Exlusion Hour Frequency Analysis

(2009/2010 Winter "5CP" days, ~137 accounts)

- The Winter Peak Load is determined by the Curtailment Service Provider based on the customer's peak load between hour ending 7:00 EPT through 21:00 EPT on each of the PJM defined five coincident peak (5CP) days from December through February two Delivery Years prior to the Delivery Year for which the registration is submitted. The Winter Peak Load is calculated as the average of the customer's five peak demand values on the PJM defined winter 5 CP days. PJM posts the RTO winter 5 CP days on the pjm website. If no hourly load data exists for December through February two Delivery Years prior to the Delivery Year, then the CSP may use the most recent December through February hourly load data to calculate the Winter Peak Load. If no hourly load data for the customer exists for the last two December through February periods prior to the Deliver Year, the CSP may provide alternative data to support a Winter Peak Load subject to PJM's review and approval of the use of alternative data.

Questions?