

Standby Residual Check and Publication

SO Industry Workshops
16-20 April 2007

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TRANSPower



SYSTEM OPERATOR

Agenda

- what you receive now
- what the Standby Residual Check (SRC) is
- what we are changing in SRC
- what will be published
- project status

What you receive now



T R A N S P O W E R

Telephone : 0800 488 500
Facsimile : 07 843 7176

To: CAN Energy Traders
From: System Operator

Date: 20 Jun 2006, 01:43

Standby Reserve (CAN) for Insufficient dispatch proposals on 20-Jun-2006

The System Operator advises participants that there are insufficient standby reserves available for the following trading periods:

Following a contingent event:

- There may be insufficient generation reserve available for the System Operator to re-dispatch the system to a secure state (i.e. manage a subsequent contingent event).
- Demand management may be required

Market Day	Time	Period	North Island	South Island	New Zealand
20-Jun-2006	17:30	36	153.672		237.426
20-Jun-2006	18:00	37	174.635		232.119
20-Jun-2006	18:30	38	155.366		177.755
20-Jun-2006	19:00	39	29.24		15.53

This situation can be alleviated by participants revising their demand and generation offers for those trading periods.
A revision of this notice will be issued if there is any change to the situation advised above.

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T R A N S P O W E R



S Y S T E M O P E R A T O R

What you receive now: issues

- does not indicate how margin is calculated
- what can be done to remedy issue (in detail)
- difficult to maintain industry (and SO) understanding of SRC function.

What the SRC is about

- two checks: do we have the ability to
 - replace energy with no reserves?
 - replace energy with reserves to cover next risk?

What the SRC is about: replace energy

- ability to replace largest energy risk?
- reserve is not considered for the next risk
- worst case scenario. Cannot replace energy lost after a contingent event.

What the SRC is about: replace energy

- calculation involves:
 - + energy offers from generators
 - total energy offer quantity of the risk generator
 - required frequency keeping band
 - energy requirement (demand + Losses)
 - + HVDC received (limited by SI offers).

What the SRC is about: replace energy and reserves

- ability to replace the largest risk energy with other energy?
- ability to return the reserve to cover the next largest risk after 30 minutes?
- this is most common scenario:
 - cannot get back to N-1 for reserve.

What the SRC is about: replace energy and reserves

- calculation involves:
 - + available total generator capability offered (includes manual subtractor)
 - + offered Interruptible Load
 - risk station capability offered
 - required frequency keeping band
 - energy requirement (demand + losses)
 - next largest risk capability offered
 - + HVDC received (limited by SI offers).

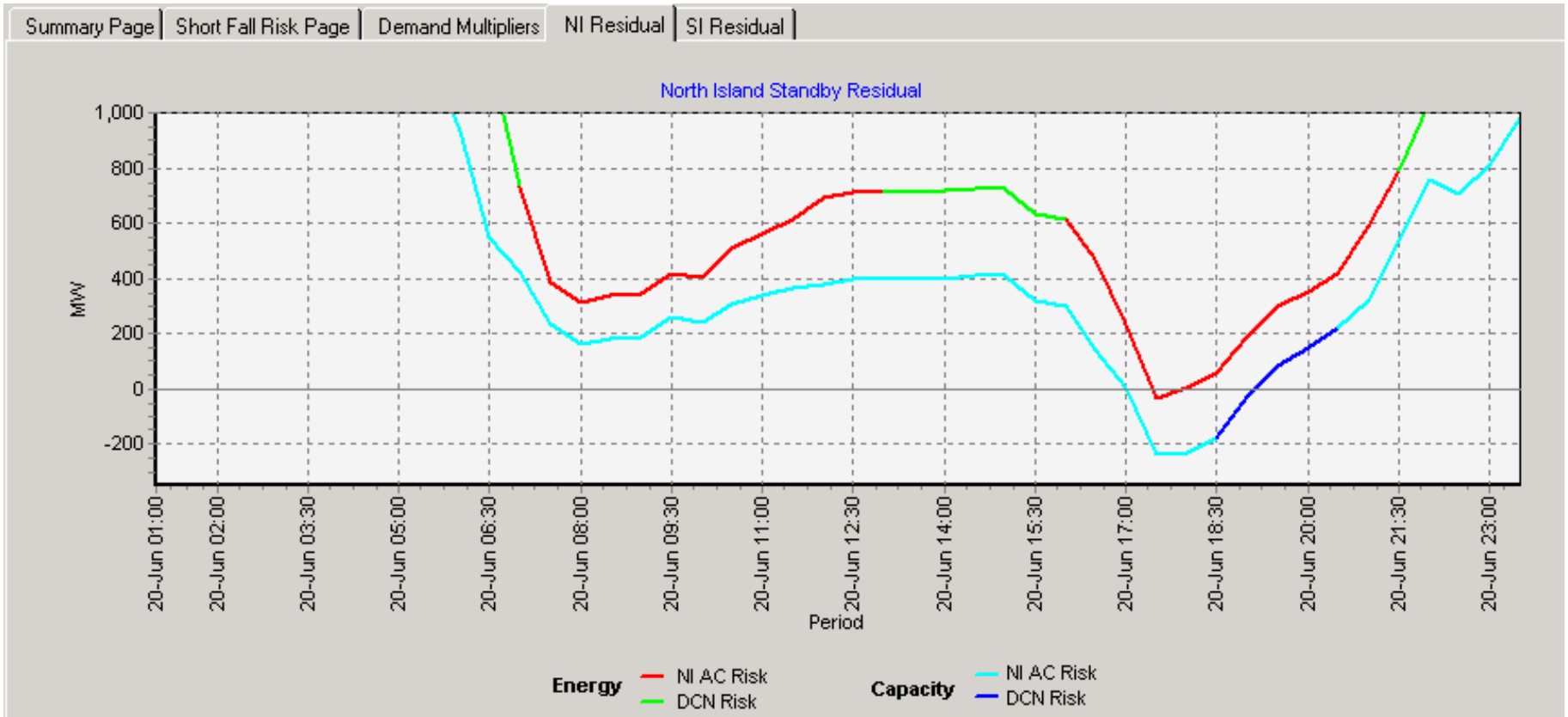
What we are changing in SRC

- manual subtractor
 - subtractor to allow spur line constraints and commissioning units to be deducted from the available generation capability offered
- manual risk (normally only the South Island)
- peak island power system
 - peak demand versus energy requirement value.

What will be published

- May 2007
 - graph of shortfalls for each island (next slide)
 - data making up the graph – 8 calculations
 - further data to allow participants to build own model of SRC calculation – values the 8 calculations based upon
 - spreadsheet will be provided - no obligations
- June 2007
 - model to allow participants to play with data and determine what if anything they can do to help situation.

What will be published: graph

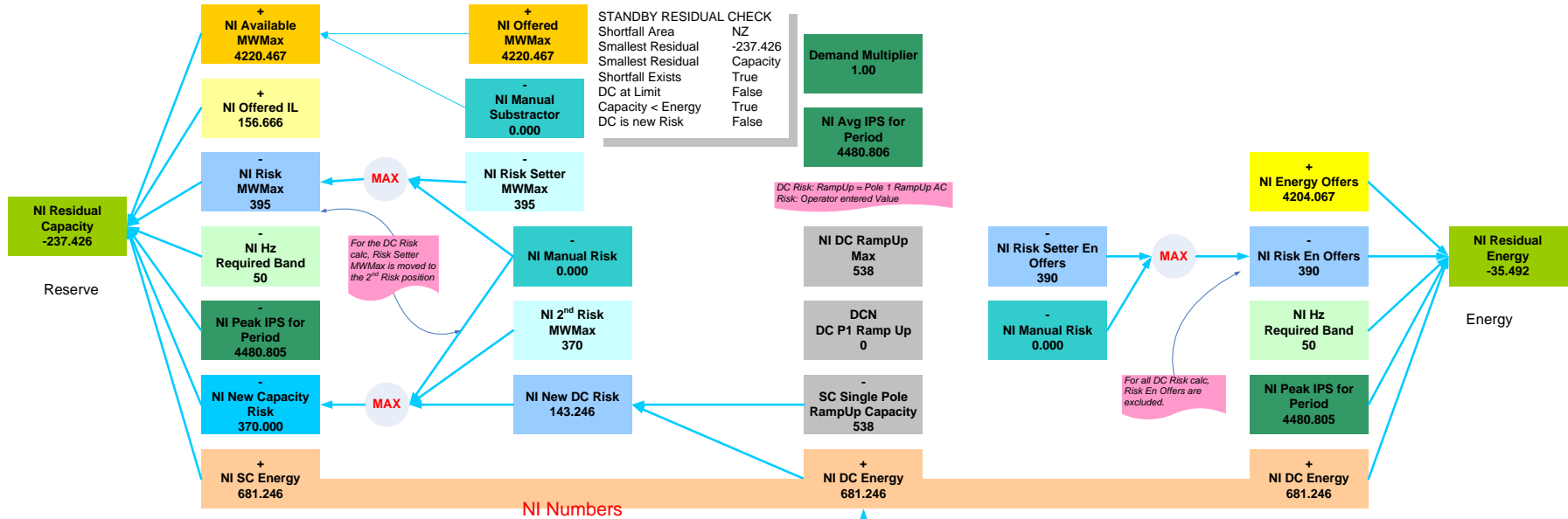
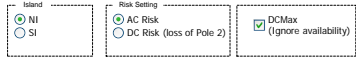


What will be published

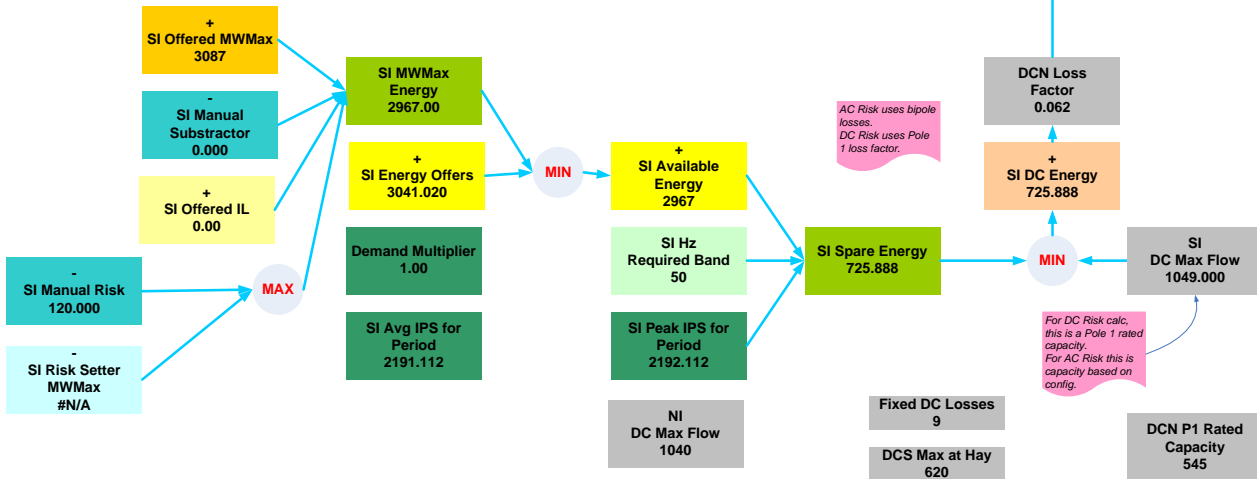
- total island energy offer quantity
- total island risk unit energy offer quantity
- island frequency keeping band
- island energy requirement (demand & losses)
- HVDC received
- total island offered capacity
- total island offered Interruptible Load
- total island risk unit capability
- island next largest risk offered capability.

Calculated off the SDS, PDS & SDPQ.

Which Check

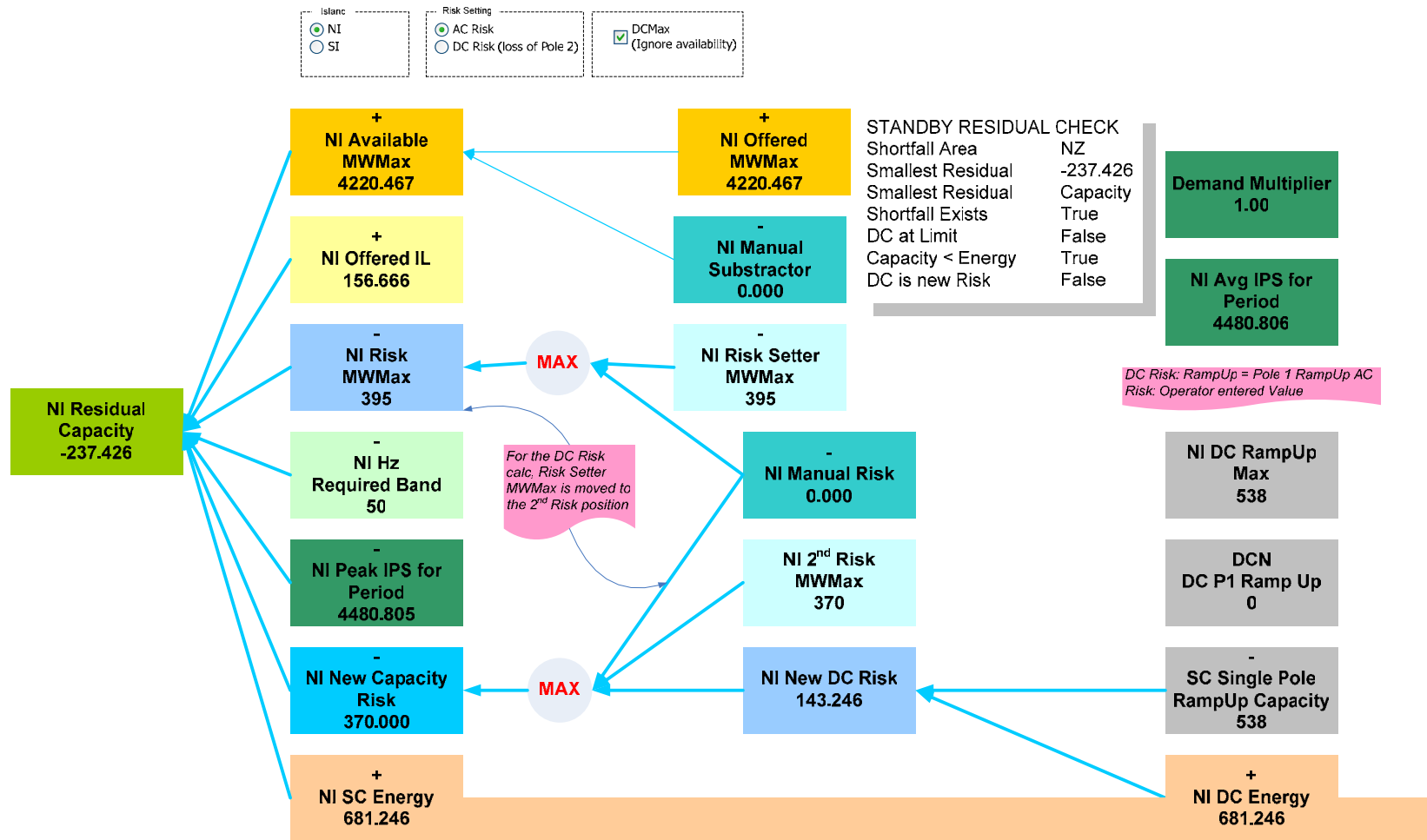


NI Numbers

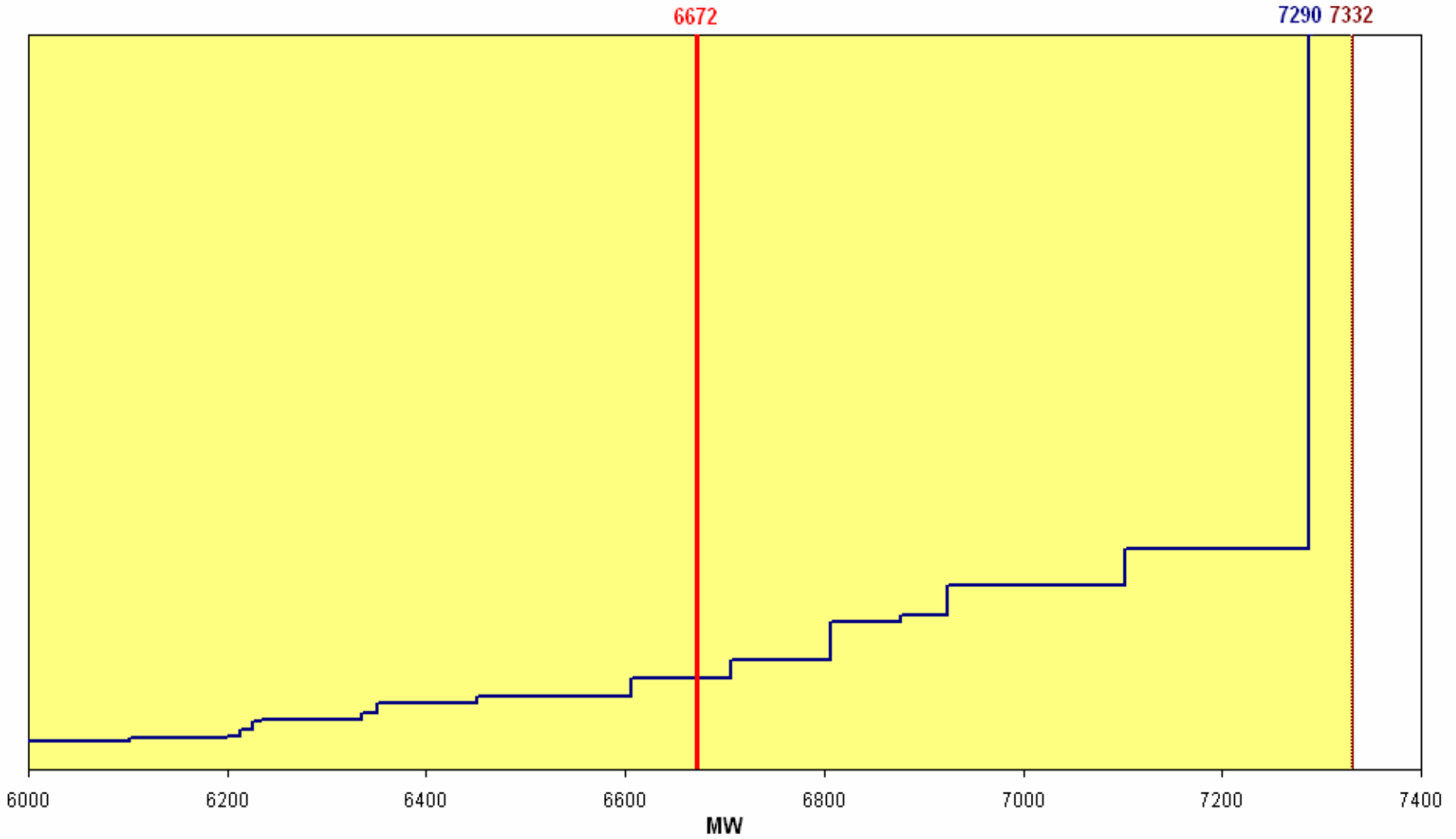
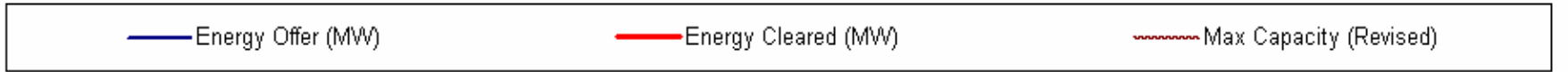


SI Numbers

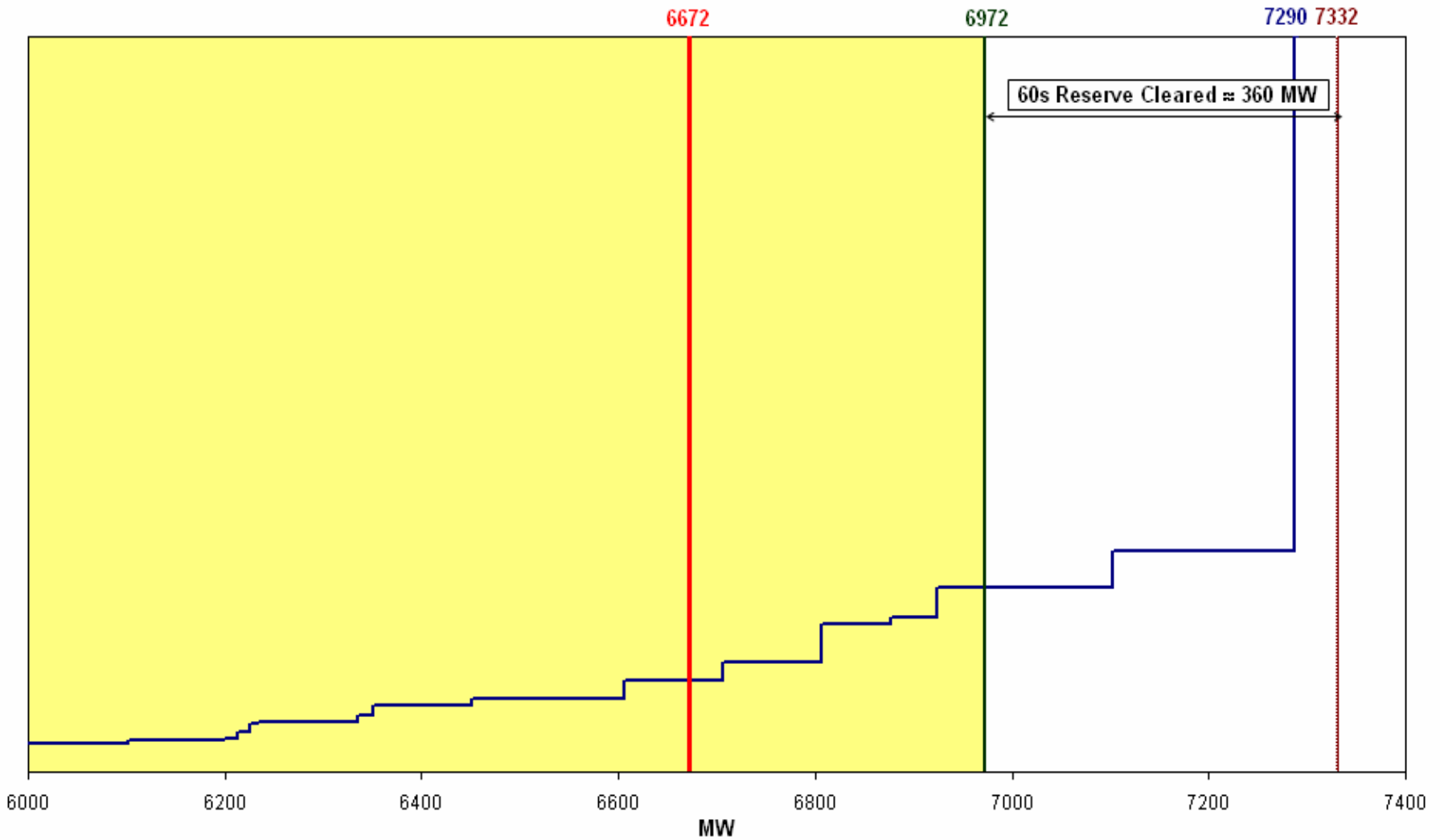
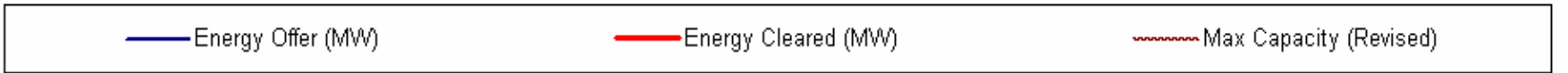
Detail of the NI replace energy and reserves model



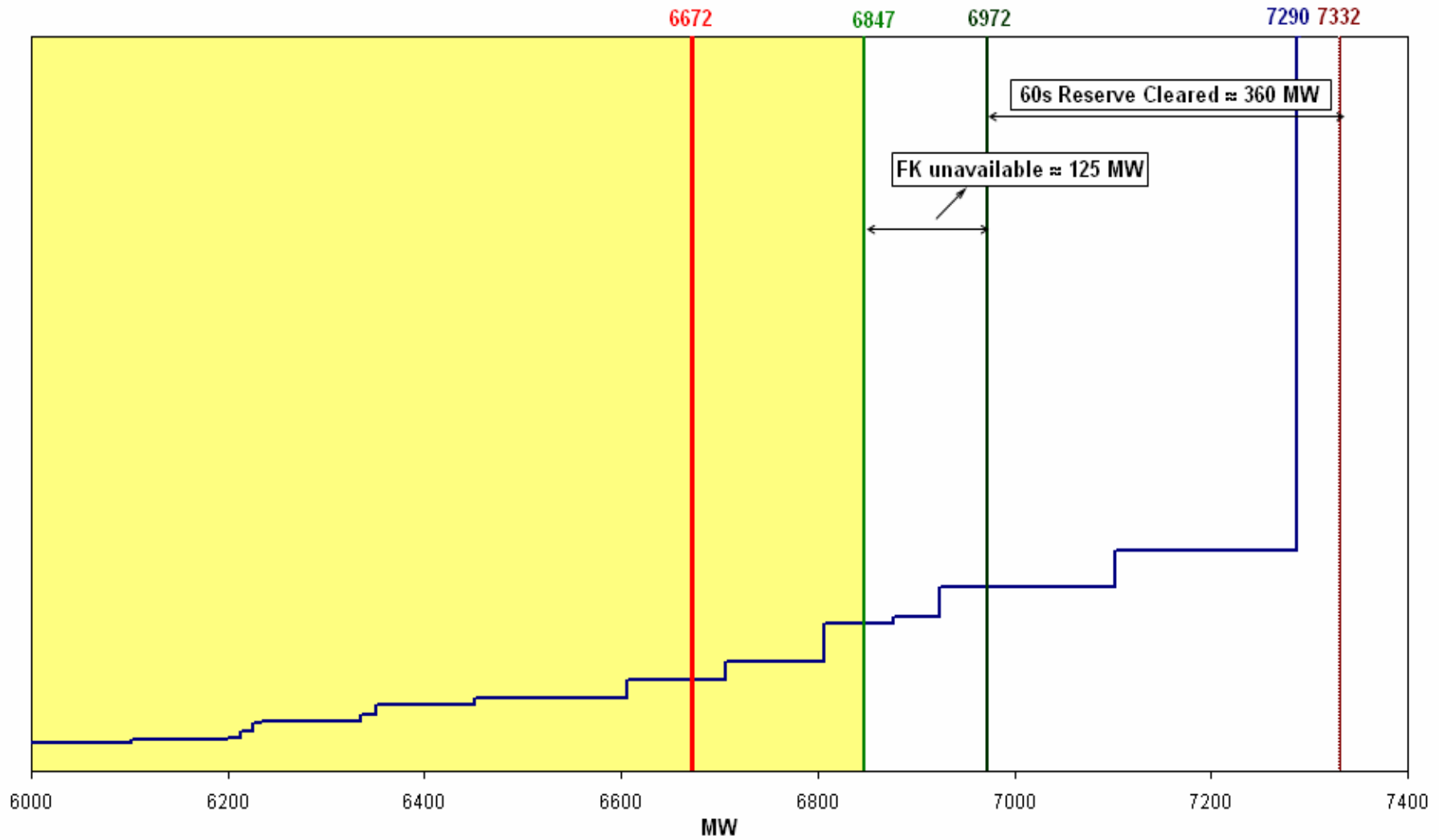
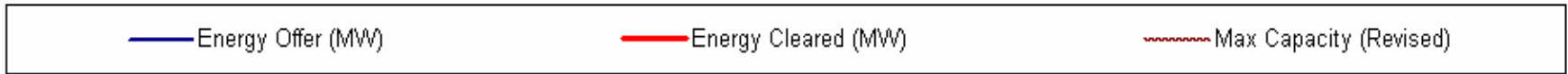
Energy Capability (19 June 2006) - RTD Output



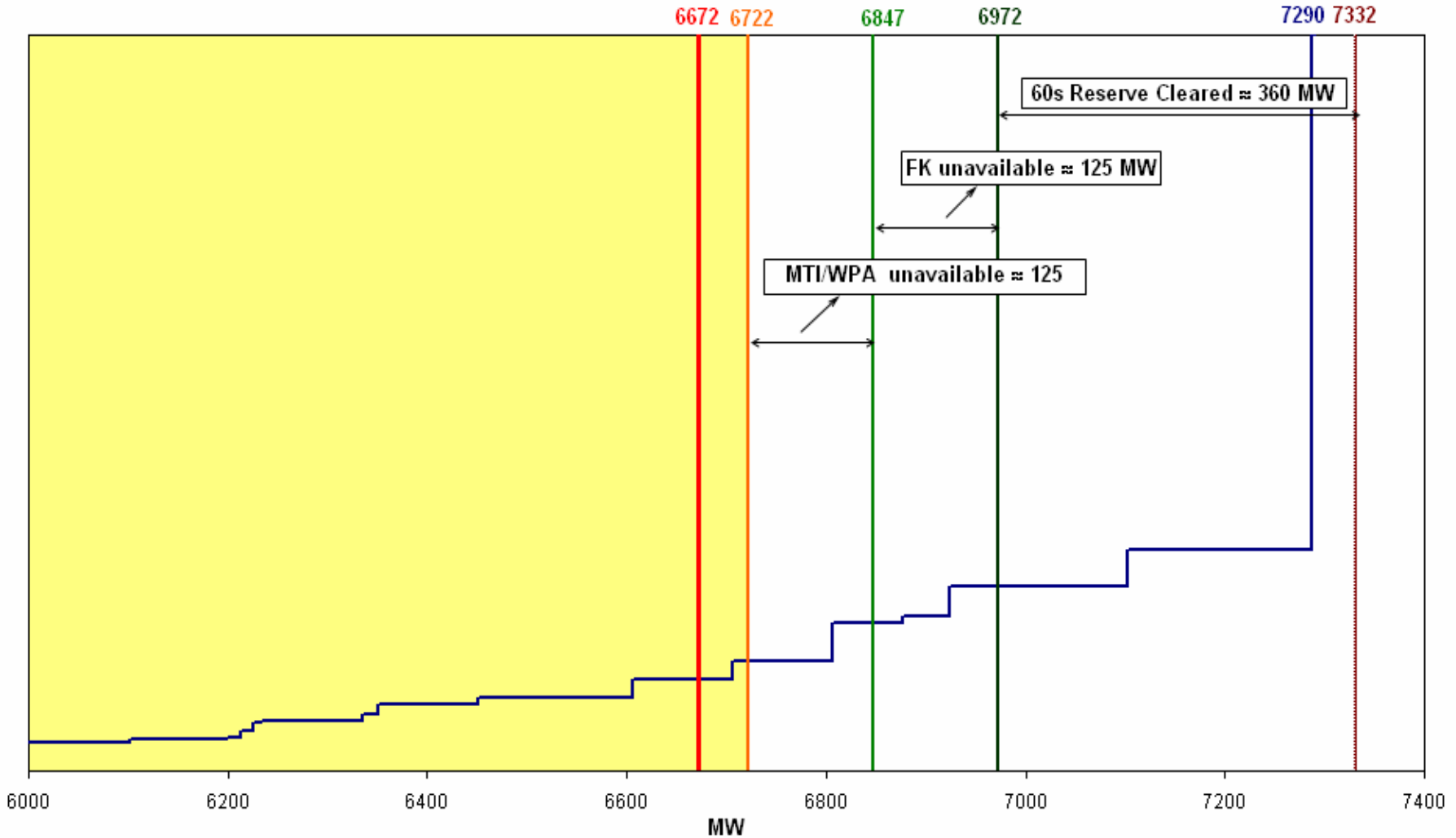
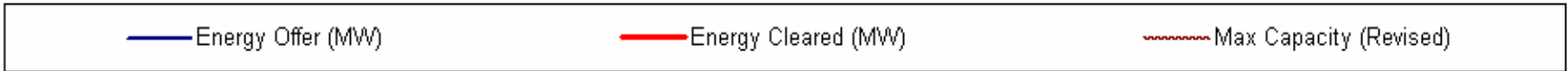
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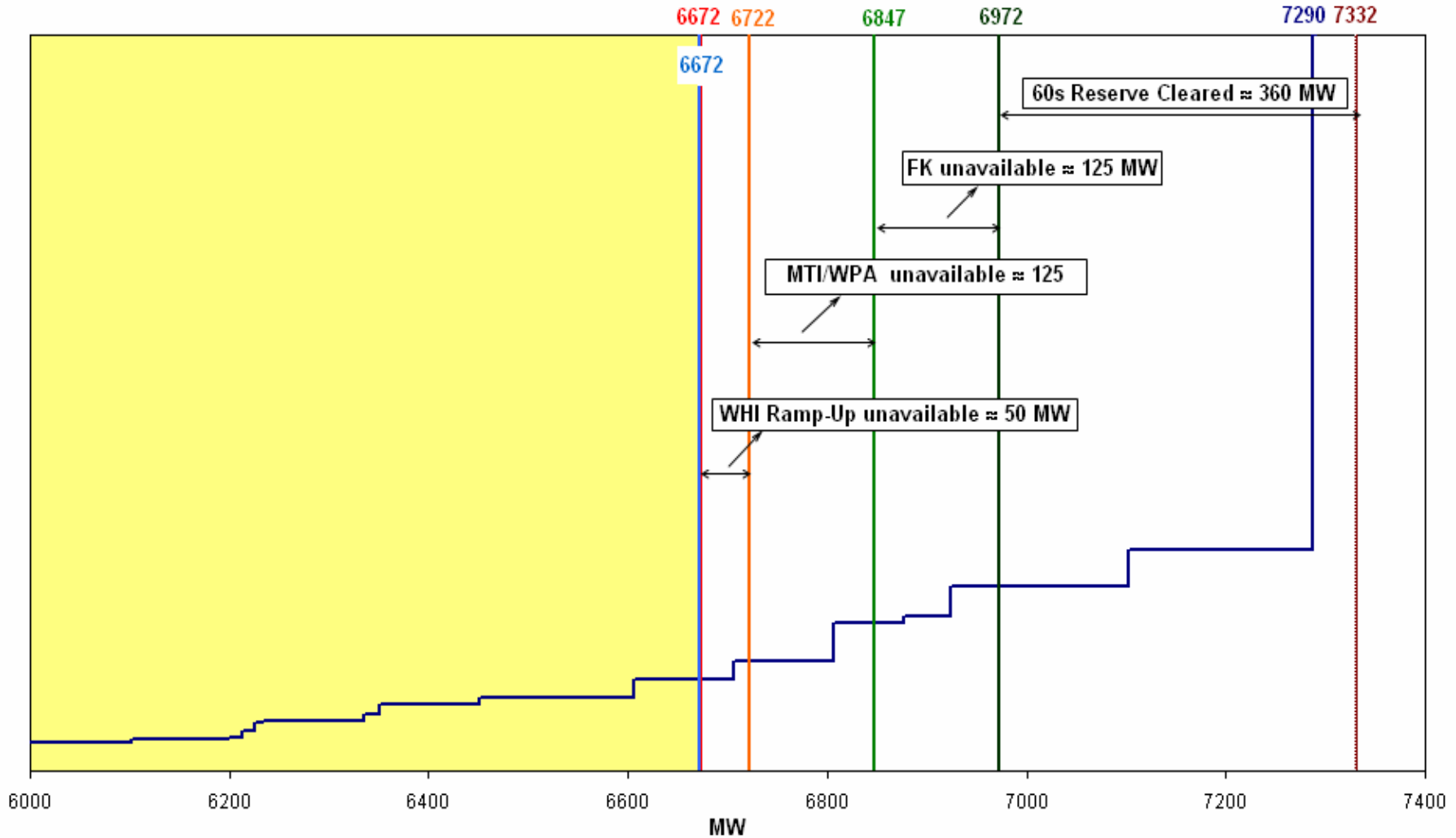
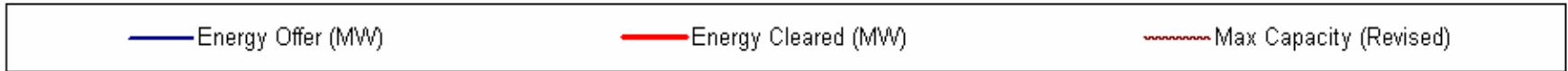
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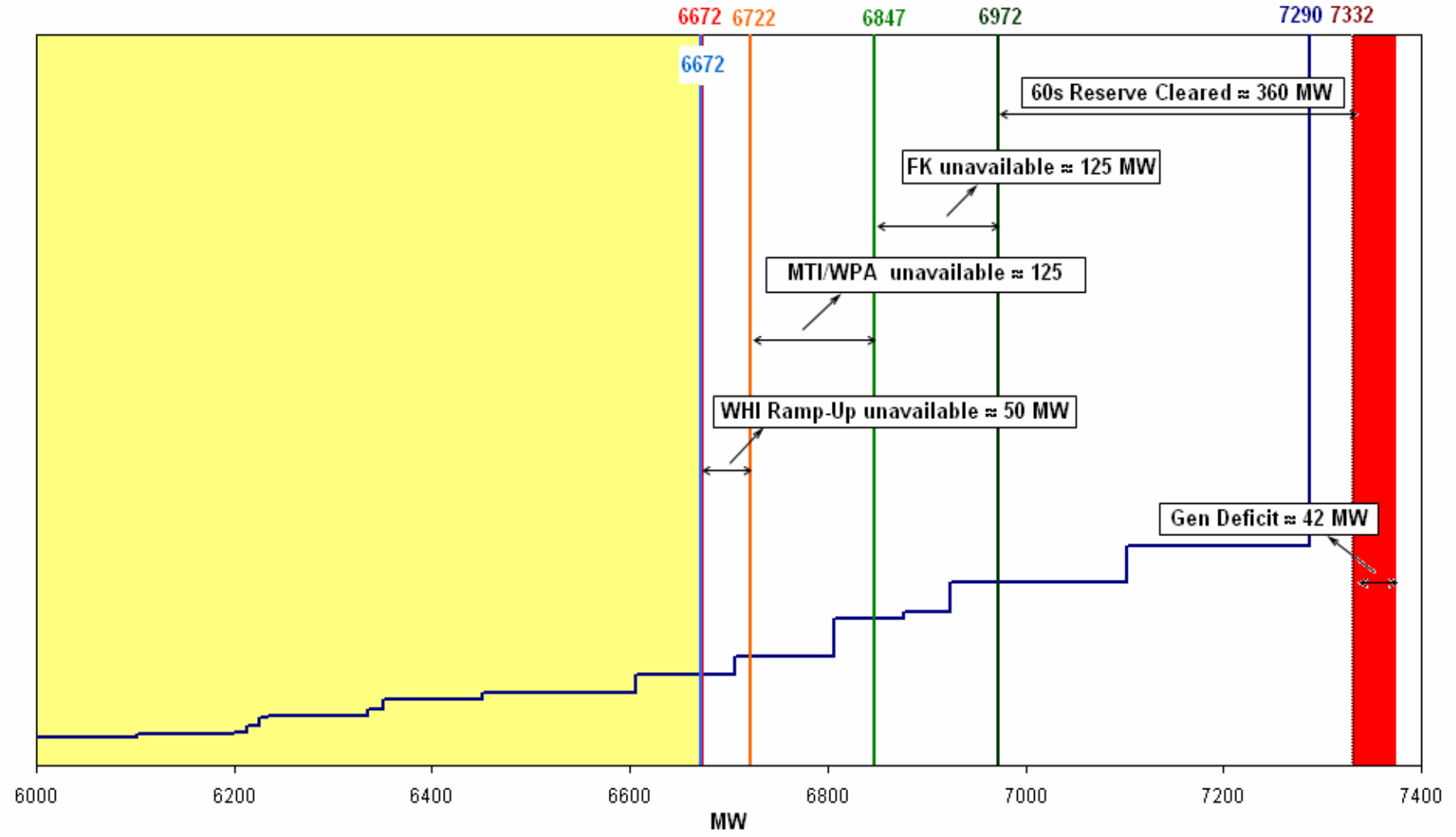
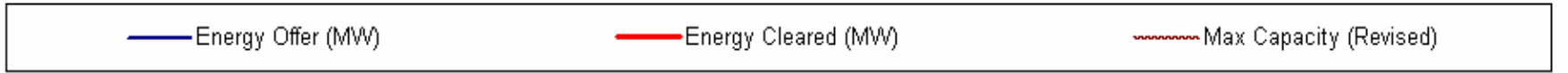
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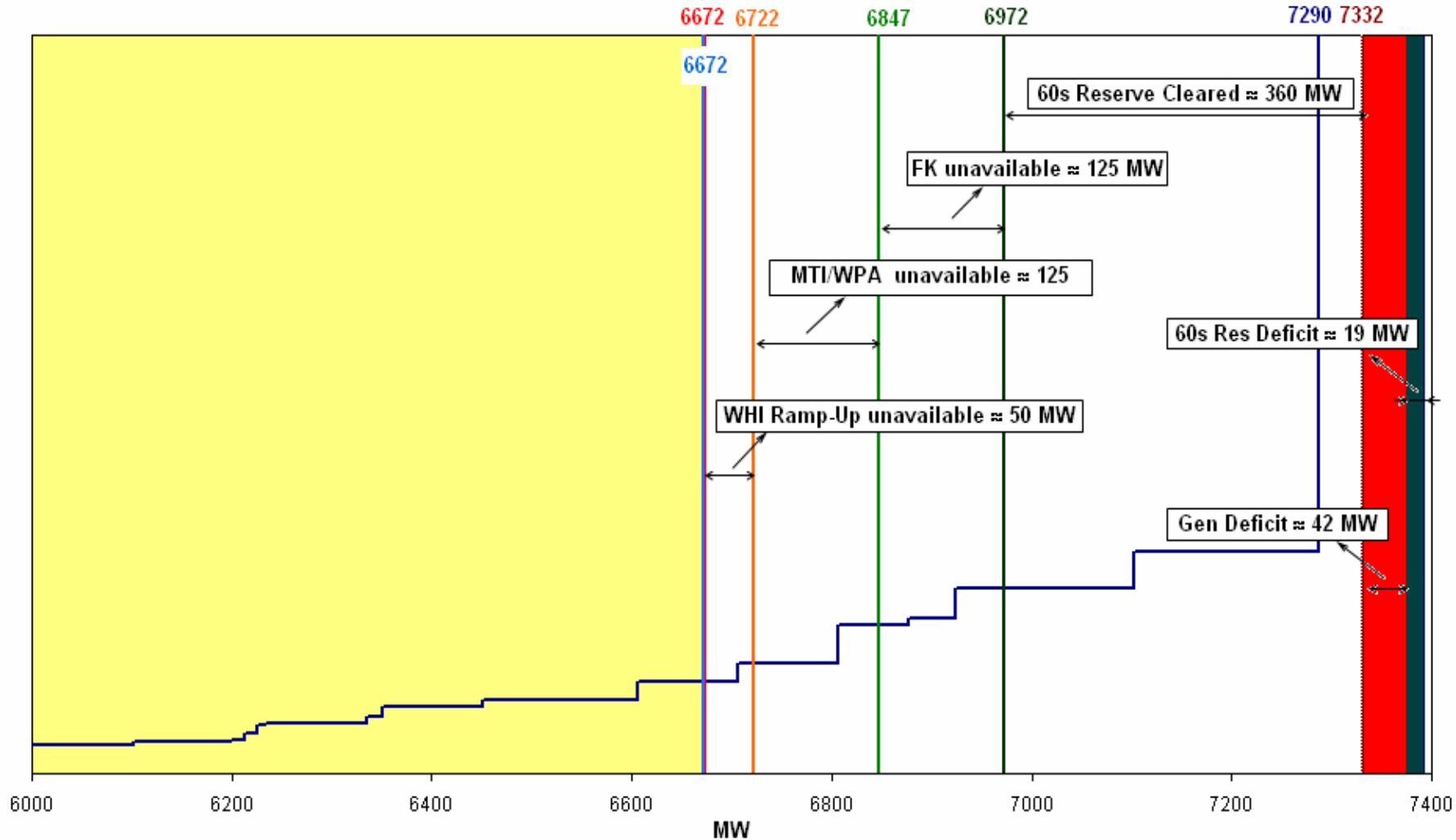
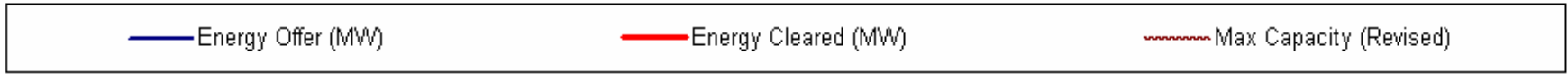
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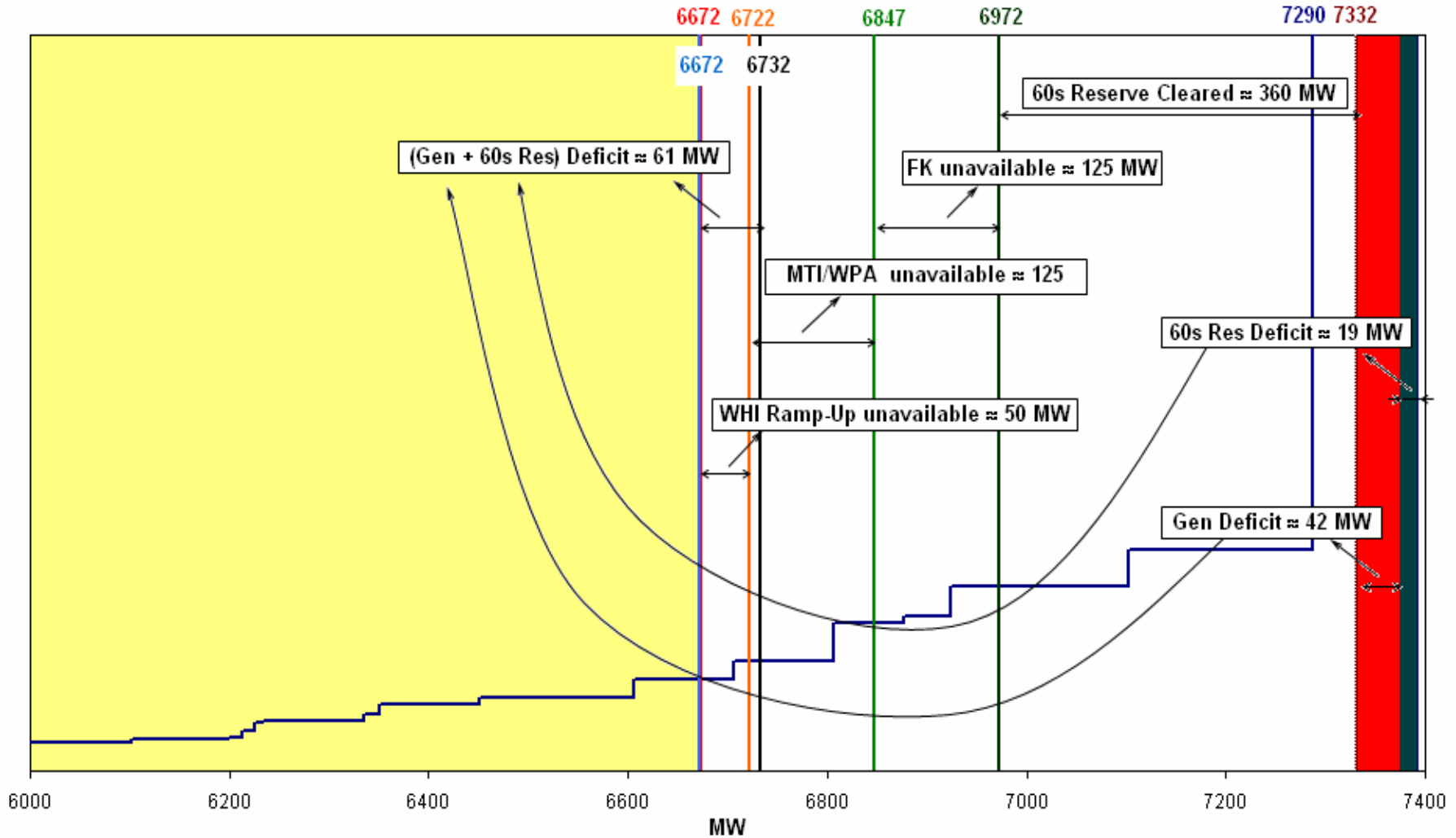
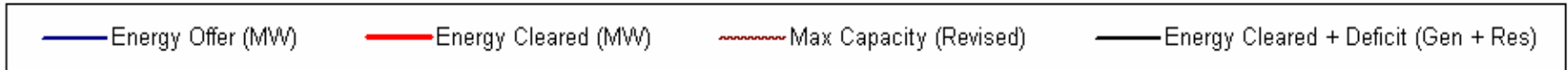
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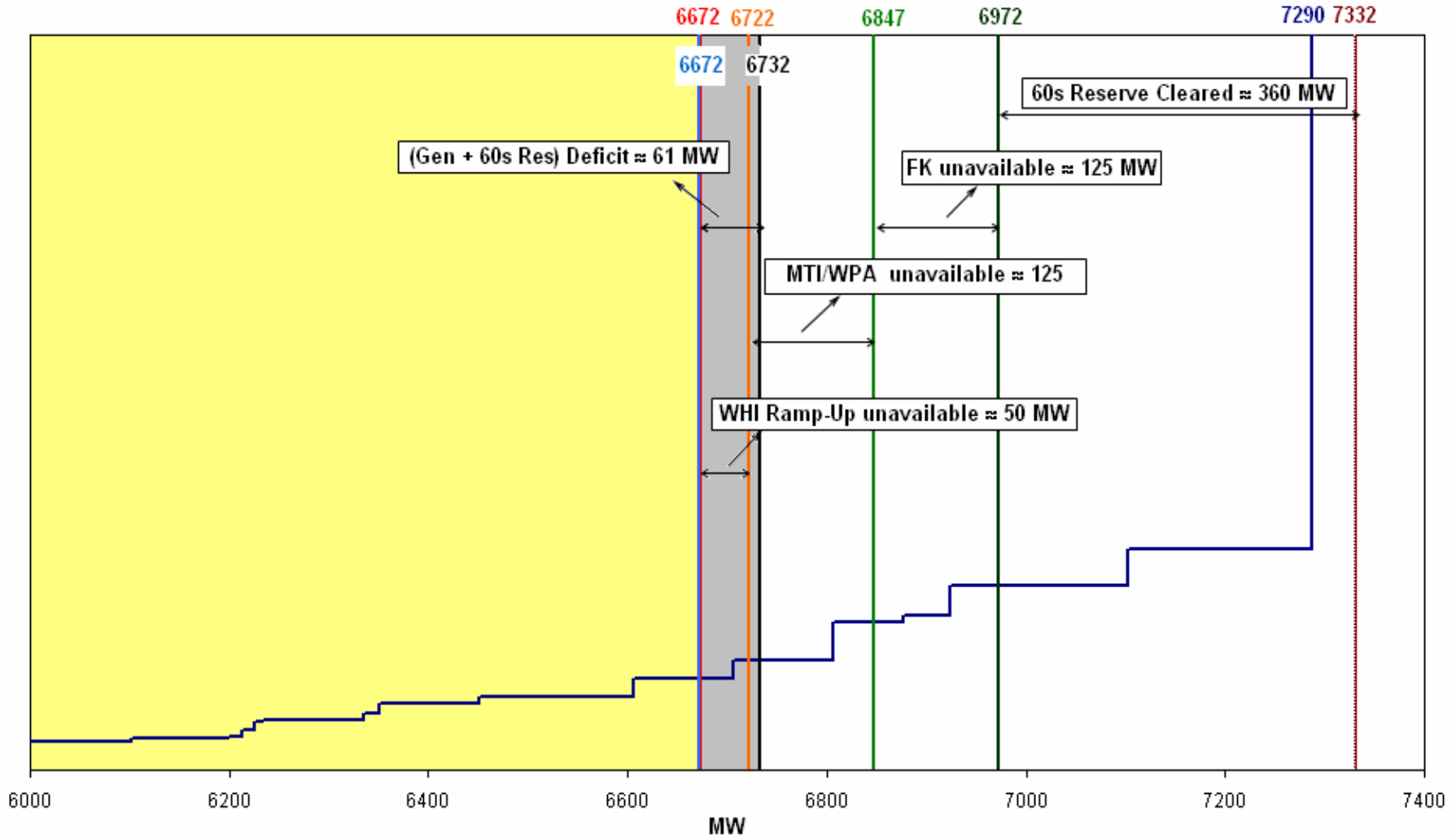
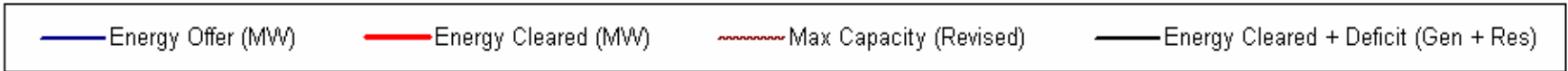
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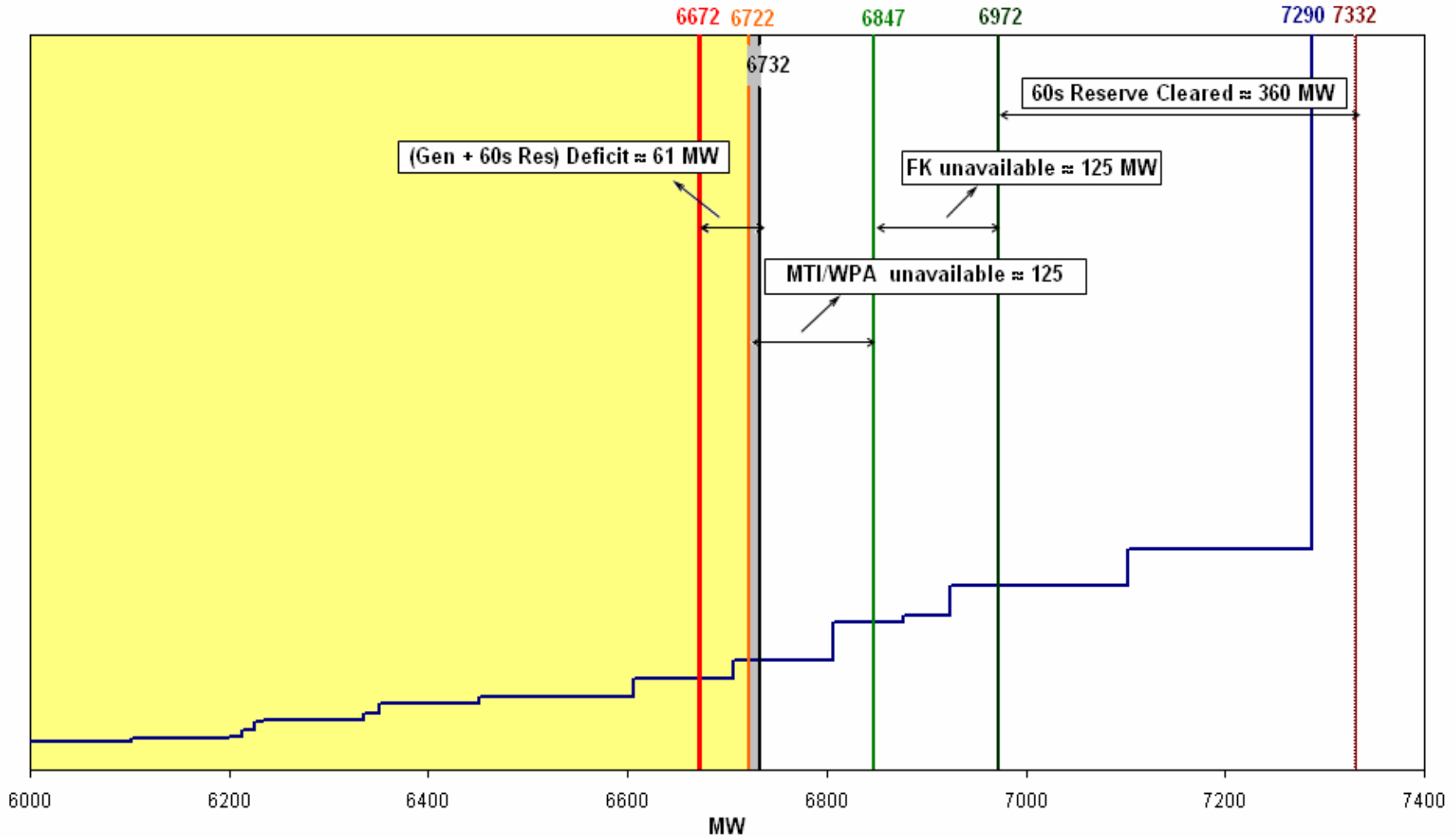
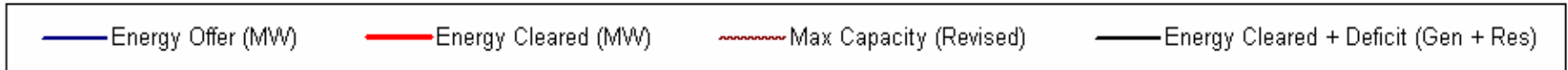
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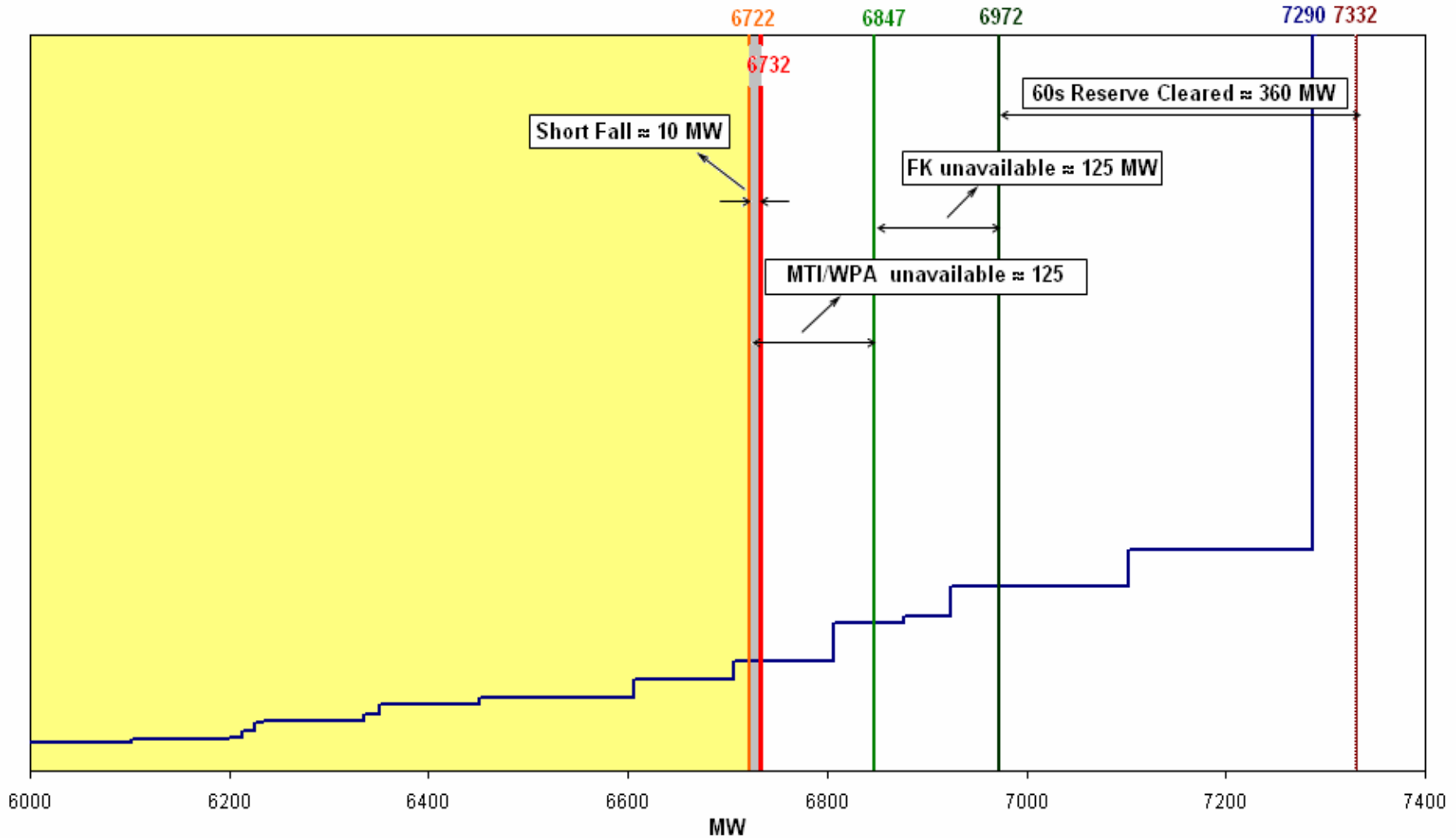
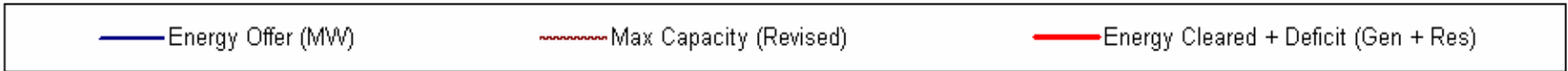
Energy Capability (19 June 2006) - RTD Output



Energy Capability (19 June 2006) - RTD Output



Energy Capability (19 June 2006) - RTD Output



Status of project

- SRC publication project under way
- project approved by EC
- basic implementation May 2007
- enhancement if agreed by EC will follow in June.

Training session

- SO will provide a training session in Wellington 2nd May – 2 hours.