

2008 AEC-NRC Bilateral Technical Meeting

Status of NPP Power Uprate in Taiwan

Shin Chang
Department of Nuclear Regulation
Atomic Energy Council, Taiwan

May 12, 2008



Status of NPP Power Uprate in Taiwan

- Current project:

- A power uprate project of Taipower for its three operating NPPs (six units) is ongoing.

Implementation is planned between 2007 and 2009 according to the refueling schedules.

- MUR type uprate

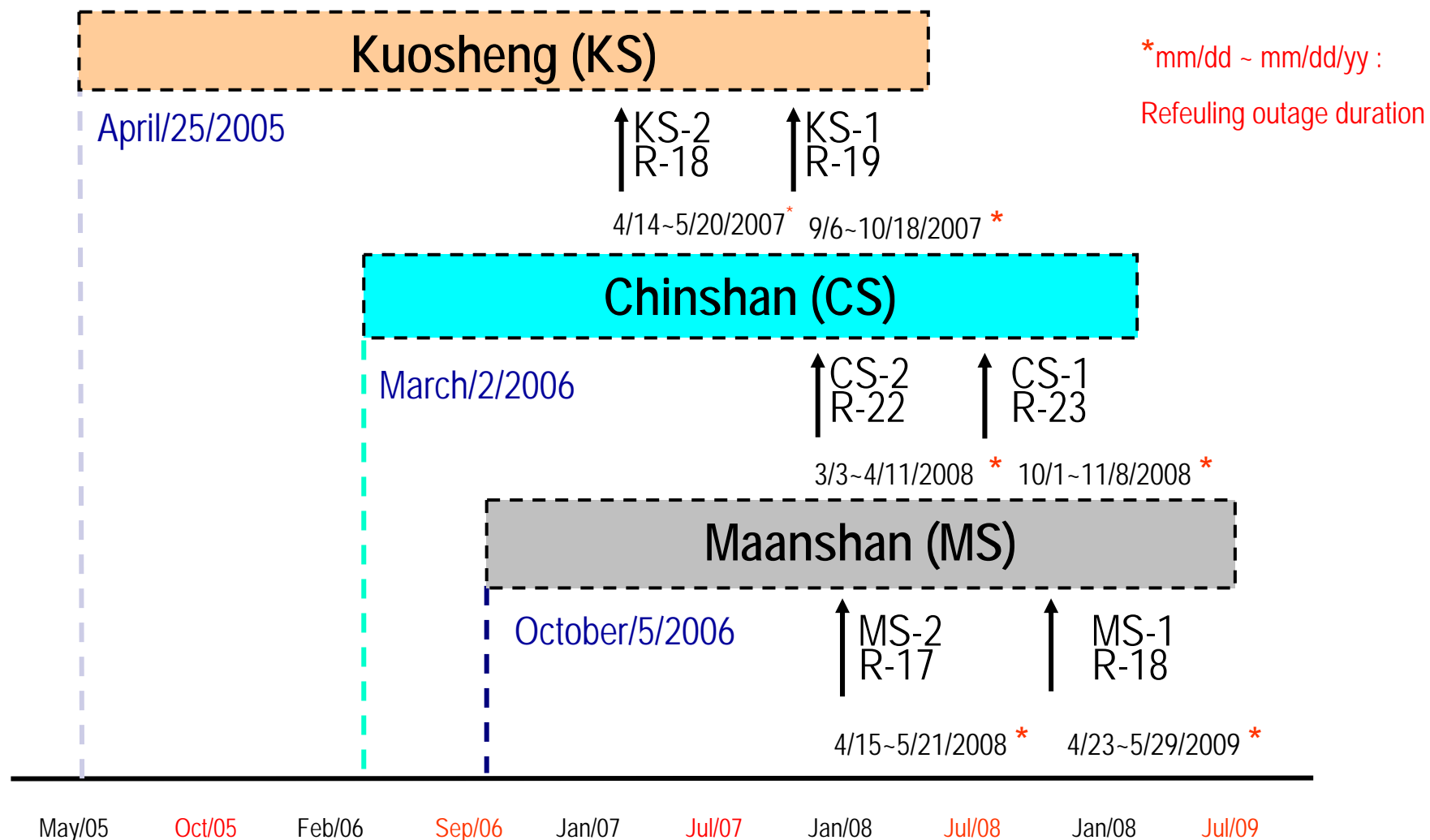
- All the units will implement power uprate from the beginning of the cycle after a refueling outage except Maanshan Unit 2 which may involve power uprate in mid-cycle.



Status of NPP Power Uprate in Taiwan

- Both Kuosheng units have implemented MUR PU in 2007.
- Chinshan 2 installed UFM in March 2008, and power ascension test is scheduled in June, 2008.
- Maanshan 2 installed in April 2008. But, safety analysis is still under review.
- Chinshan 1、 Maanshan 1 are going to install UFM in Oct. 2008 and May 2009, respectively.

Schedule of MUR PU Project





Applications of Power Uprate

NO.	PLANT	%UPRATE	MWt	DATE APPROVED	TYPE
1	Kuosheng 2	1.70 (0.3)*	49 (9)*	2007.05.09	MUR
2	Kuosheng 1	1.70 (1.5)*	49 (43)*	2007.09.06	MUR
3	Chinshan 2	1.65**	29**	2008.03.21	MUR
4	Chinshan 1	1.65**	29**	2008.09.30	MUR
5	Maanshan 2	1.7**	47**	2008.10.30	MUR
6	Maanshan 1	1.7**	47**	2009.04.27	MUR

*Number in parenthesis means actual % uprate

** means tentative



Status of NPP Power Uprate in Taiwan

- Lesson Learned through the review of topical reports for flow meter and power uncertainty analysis
 - Many typos were found in the topical reports for flow meter (ER-157P)
 - Methods used in the Time of Flight Calculation were different from those in the Topical Reports for Flow Meter
 - The Effects of Coherent Noise on LEFM CheckPlus Systems
- Lesson Learned has been discussed in the last bilateral meeting.



Status of NPP Power Uprate in Taiwan

■ Future feasibility

- TPC is preparing for the possible feasibility study for stretch power uprate.
 - Possible another 2.1% increase of rated thermal power for CS
- At this preliminary stage of possible future power uprate application, AEC has funded a project to develop review guidance.
- US's experience will be the most important reference.