

Errata: Nuclear Power Assessment Study

Posted September 2015

Original File Version: NPAS Final Report FINAL (created 1 June 2015)

Page	Erratum																																																																																																																							
55	<p>Replace Table 3-2: SRG Parametric Option Set from the Final NPAS report with the following table.</p> <p style="text-align: center;">TABLE 3-2 SRG PARAMETRIC OPTION SET</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr style="background-color: #e0f2f1;"> <th># GPHS</th> <th>2</th> <th style="border: 2px solid blue;">4</th> <th style="border: 2px solid red;">6</th> <th>8</th> </tr> </thead> <tbody> <tr style="background-color: #e0f2f1;"> <td>CBE Inputs</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr style="background-color: #e0f2f1;"> <td>BOL Power (W_a) (4 K)</td> <td>130</td> <td style="border: 2px solid blue;">240</td> <td style="border: 2px solid red;">370</td> <td>510</td> </tr> <tr style="background-color: #e0f2f1;"> <td>BOM Power (W_a) (4 K + BOL + 3 yrs)</td> <td>126</td> <td style="border: 2px solid blue;">232</td> <td style="border: 2px solid red;">357</td> <td>492</td> </tr> <tr style="background-color: #e0f2f1;"> <td>EOM Power (W_a) (4 K BOL+17 yrs)</td> <td>104</td> <td style="border: 2px solid blue;">193</td> <td style="border: 2px solid red;">297</td> <td>409</td> </tr> <tr style="background-color: #e0f2f1;"> <td>BOL Power (W_a) (270 K)</td> <td>116</td> <td style="border: 2px solid blue;">215</td> <td style="border: 2px solid red;">331</td> <td>456</td> </tr> <tr style="background-color: #e0f2f1;"> <td>BOM Power (W_a) (270 K)</td> <td>113</td> <td style="border: 2px solid blue;">207</td> <td style="border: 2px solid red;">319</td> <td>440</td> </tr> <tr style="background-color: #e0f2f1;"> <td>EOM Power (W_a) (270 K)</td> <td>93</td> <td style="border: 2px solid blue;">173</td> <td style="border: 2px solid red;">266</td> <td>366</td> </tr> <tr style="background-color: #e0f2f1;"> <td>Degradation Rate</td> <td>1.16%</td> <td>1.16%</td> <td>1.16%</td> <td>1.16%</td> </tr> <tr style="background-color: #e0f2f1;"> <td>Diameter (cm)</td> <td>19</td> <td style="border: 2px solid blue;">33</td> <td style="border: 2px solid red;">33</td> <td>36</td> </tr> <tr style="background-color: #e0f2f1;"> <td>Length (cm)</td> <td>50</td> <td style="border: 2px solid blue;">45</td> <td style="border: 2px solid red;">65</td> <td>95</td> </tr> <tr style="background-color: #e0f2f1;"> <td>GPHS Heat Load (BOL W_{th})*</td> <td>500</td> <td style="border: 2px solid blue;">1,000</td> <td style="border: 2px solid red;">1,500</td> <td>2,000</td> </tr> <tr style="background-color: #e0f2f1;"> <td>GPHS Heat Load (EOL W_a)</td> <td>437</td> <td style="border: 2px solid blue;">874</td> <td style="border: 2px solid red;">1,312</td> <td>1,749</td> </tr> <tr style="background-color: #e0f2f1;"> <td>Controller Efficiency</td> <td>90%</td> <td>90%</td> <td>90%</td> <td>90%</td> </tr> <tr style="background-color: #e0f2f1;"> <td>BOL Waste Heat (4 K) (W_a)</td> <td>356</td> <td style="border: 2px solid blue;">733</td> <td style="border: 2px solid red;">1,089</td> <td>1,433</td> </tr> <tr style="background-color: #e0f2f1;"> <td>BOL Stirling Cold End Temperature (4 K)</td> <td>420 K</td> <td style="border: 2px solid blue;">450 K</td> <td style="border: 2px solid red;">450 K</td> <td>430 K</td> </tr> <tr style="background-color: #e0f2f1;"> <td>Average Heat Rejection Temperature (4 K)</td> <td>400 K</td> <td style="border: 2px solid blue;">428 K</td> <td style="border: 2px solid red;">428 K</td> <td>408 K</td> </tr> <tr style="background-color: #e0f2f1;"> <td>Average Heat Rejection Temperature (270 K)</td> <td>440 K</td> <td style="border: 2px solid blue;">468 K</td> <td style="border: 2px solid red;">468 K</td> <td>448 K</td> </tr> <tr style="background-color: #e0f2f1;"> <td>Disturbance Force (@ 100 hz)</td> <td>10 N</td> <td style="border: 2px solid blue;">13.6 N</td> <td style="border: 2px solid red;">16.9 N</td> <td>19.8 N</td> </tr> <tr style="background-color: #e0f2f1;"> <td>BOL Specific Power (W_a/kg)</td> <td>7.5</td> <td style="border: 2px solid blue;">7.5</td> <td style="border: 2px solid red;">7.9</td> <td>7.9</td> </tr> <tr style="background-color: #e0f2f1;"> <td>Mass (kg)</td> <td>17.3</td> <td style="border: 2px solid blue;">32.0</td> <td style="border: 2px solid red;">46.8</td> <td>64.6</td> </tr> <tr style="background-color: #e0f2f1;"> <td>BOL Power Efficiency</td> <td>26.0%</td> <td style="border: 2px solid blue;">24.0%</td> <td style="border: 2px solid red;">24.7%</td> <td>25.5%</td> </tr> <tr style="background-color: #e0f2f1;"> <td>EOM Power Efficiency</td> <td>23.8%</td> <td style="border: 2px solid blue;">22.1%</td> <td style="border: 2px solid red;">22.6%</td> <td>23.4%</td> </tr> </tbody> </table> <p style="text-align: right; font-size: small;">* Assumes 250 W_a per GPHS</p> <div style="margin-top: 10px;"> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30px; border: 2px solid red; margin-right: 5px;"></td> <td>Option that was used for the TSSM Team-X Study</td> </tr> <tr> <td style="width: 30px; border: 2px solid blue; margin-right: 5px;"></td> <td>Option that was used for the UOP ACE Study</td> </tr> </table> <p style="font-size: x-small; margin-top: 5px;">BOL: Beginning of Life; BOM: Beginning of Mission; EOM: End of Mission</p> </div>	# GPHS	2	4	6	8	CBE Inputs					BOL Power (W_a) (4 K)	130	240	370	510	BOM Power (W_a) (4 K + BOL + 3 yrs)	126	232	357	492	EOM Power (W_a) (4 K BOL+17 yrs)	104	193	297	409	BOL Power (W_a) (270 K)	116	215	331	456	BOM Power (W_a) (270 K)	113	207	319	440	EOM Power (W_a) (270 K)	93	173	266	366	Degradation Rate	1.16%	1.16%	1.16%	1.16%	Diameter (cm)	19	33	33	36	Length (cm)	50	45	65	95	GPHS Heat Load (BOL W_{th})*	500	1,000	1,500	2,000	GPHS Heat Load (EOL W_a)	437	874	1,312	1,749	Controller Efficiency	90%	90%	90%	90%	BOL Waste Heat (4 K) (W_a)	356	733	1,089	1,433	BOL Stirling Cold End Temperature (4 K)	420 K	450 K	450 K	430 K	Average Heat Rejection Temperature (4 K)	400 K	428 K	428 K	408 K	Average Heat Rejection Temperature (270 K)	440 K	468 K	468 K	448 K	Disturbance Force (@ 100 hz)	10 N	13.6 N	16.9 N	19.8 N	BOL Specific Power (W_a/kg)	7.5	7.5	7.9	7.9	Mass (kg)	17.3	32.0	46.8	64.6	BOL Power Efficiency	26.0%	24.0%	24.7%	25.5%	EOM Power Efficiency	23.8%	22.1%	22.6%	23.4%		Option that was used for the TSSM Team-X Study		Option that was used for the UOP ACE Study
# GPHS	2	4	6	8																																																																																																																				
CBE Inputs																																																																																																																								
BOL Power (W_a) (4 K)	130	240	370	510																																																																																																																				
BOM Power (W_a) (4 K + BOL + 3 yrs)	126	232	357	492																																																																																																																				
EOM Power (W_a) (4 K BOL+17 yrs)	104	193	297	409																																																																																																																				
BOL Power (W_a) (270 K)	116	215	331	456																																																																																																																				
BOM Power (W_a) (270 K)	113	207	319	440																																																																																																																				
EOM Power (W_a) (270 K)	93	173	266	366																																																																																																																				
Degradation Rate	1.16%	1.16%	1.16%	1.16%																																																																																																																				
Diameter (cm)	19	33	33	36																																																																																																																				
Length (cm)	50	45	65	95																																																																																																																				
GPHS Heat Load (BOL W_{th})*	500	1,000	1,500	2,000																																																																																																																				
GPHS Heat Load (EOL W_a)	437	874	1,312	1,749																																																																																																																				
Controller Efficiency	90%	90%	90%	90%																																																																																																																				
BOL Waste Heat (4 K) (W_a)	356	733	1,089	1,433																																																																																																																				
BOL Stirling Cold End Temperature (4 K)	420 K	450 K	450 K	430 K																																																																																																																				
Average Heat Rejection Temperature (4 K)	400 K	428 K	428 K	408 K																																																																																																																				
Average Heat Rejection Temperature (270 K)	440 K	468 K	468 K	448 K																																																																																																																				
Disturbance Force (@ 100 hz)	10 N	13.6 N	16.9 N	19.8 N																																																																																																																				
BOL Specific Power (W_a/kg)	7.5	7.5	7.9	7.9																																																																																																																				
Mass (kg)	17.3	32.0	46.8	64.6																																																																																																																				
BOL Power Efficiency	26.0%	24.0%	24.7%	25.5%																																																																																																																				
EOM Power Efficiency	23.8%	22.1%	22.6%	23.4%																																																																																																																				
	Option that was used for the TSSM Team-X Study																																																																																																																							
	Option that was used for the UOP ACE Study																																																																																																																							
76	<p>Section 3.5: Clarify which team was involved in preparing the development plan by changing “The team prepared a 10-year flight system development plan for the 2010 concept that was used by the NPAS System Study Team in generating a ROM system cost of \$690 million,” to “The NRC team prepared a 10-year flight system development plan for the 2010 concept that was used at that time in generating a ROM system cost of \$690 million.”</p>																																																																																																																							