

## ENCLOSURE 2

MFN 09-037

ODYN Statistical Adders

Non-Proprietary Information

### **IMPORTANT NOTICE**

This is a non-proprietary version of Enclosure 1 to MFN 09-037, which has the proprietary information removed. Portions of the document that have been removed are indicated by white space with an open and closed bracket as shown here [[ ]].

**ODYN Statistical Adders – BWR/4-5  
GEMINI Methods – PANAC11 - GNF2 Fuel**

The following table provides the statistical adjustment factors (SAFs) and scram speed adjustment factors (SSAFs) to be applied to BWR/4-5 plants using the GNF2 fuel type when the reload licensing analyses are performed with GEMINI/ODYN/PANAC11 methods. The SAFs are used in determining the Option B MCPR operating limit, and the SSAFs are used to determine the Option A MCPR operating limit. Plant specific statistical adders may be used in accordance with the approved methodology. If plant specific statistical adders are generated, they will be provided to the NRC for information.

Transient/Condition	Cycle Exposure	Option B	Option A	Option A (ITS)
TT/LRNBP w/o RPT	EOC	[[		
FWCF w/o RPT	EOC			
HPCIL8** w/o RPT	EOC			
TT/LRNBP with RPT	EOC			
FWCF with RPT	EOC			
HPCIL8** with RPT	EOC			
TT/LRNBP w/o RPT	MOC			
FWCF w/o RPT	MOC			
HPCIL8** w/o RPT	MOC			
TT/LRNBP with RPT	MOC			
FWCF with RPT	MOC			
HPCIL8** with RPT	MOC			]]

\*\* This event is for BWR/4 plants only.

TT/LRNBP = Turbine Trip/Load Rejection with No Bypass

FWCF = Feedwater Controller Failure

HPCIL8 = Inadvertent High Pressure Coolant Injection with Level 8 Turbine Trip

RPT = Recirculation Pump Trip

EOC = End-of-Cycle

MOC = Middle-of-Cycle

ITS = Improved Technical Specifications (modified scram speed basis)

**ODYN Statistical Adders – BWR/6**  
**GEMINI Methods – PANAC11 – GE14 Fuel**

The following table provides the scram speed adjustment factors (SSAFs) to be applied to BWR/6 plants using the GE14 fuel type when the reload licensing analyses are performed with GEMINI/ODYN/PANAC11 methods. The SSAFs are used to determine the Option A MCPR operating limit. Plant specific statistical adders may be used in accordance with the approved methodology. If plant specific statistical adders are generated, they will be provided to the NRC for information.

<b>Transient/Condition</b>	<b>Cycle Exposure</b>	<b>Option A</b>
TT/LRNBP, w/o RPT	EOC	[[
FWCF, w/o RPT	EOC	
PRFDS, w/o RPT	EOC	
TT/LRNBP, w/o RPT	MOC	
FWCF, w/o RPT	MOC	
PRFDS, w/o RPT	MOC	]]

- TT/LRNBP = Turbine trip/load rejection with no bypass
- FWCF = Feedwater controller failure
- PRFDS = Pressure Regulator Failure Downscale
- RPT = Recirculation pump trip
- EOC = End-of-cycle
- MOC = Middle-of-cycle

**ODYN Statistical Adders - Grand Gulf and River Bend  
GEMINI Methods – PANAC11 - Atrium 10 Fuel Product Line**

The following table provides the scram speed adjustment factors (SSAFs) to be applied to the Grand Gulf and River Bend plants using the Atrium 10 fuel type when the reload licensing analyses are performed with GEMINI/ODYN/PANAC11 methods. The SSAFs are used to determine the Option A MCPR operating limit. These plant specific statistical adders have been developed in accordance with the approved methodology.

Transient/Condition	Cycle Exposure	Option A
TT/LRNBP, w/o RPT	EOC	[[
FWCF, w/o RPT	EOC	
PRFDS, w/o RPT	EOC	
TT/LRNBP, with RPT	EOC	
FWCF, with RPT	EOC	
TT/LRNBP, w/o RPT	MOC	
FWCF, w/o RPT	MOC	
PRFDS, w/o RPT	MOC	
TT/LRNBP, with RPT	MOC	
FWCF, with RPT	MOC	]]

- TT/LRNBP = Turbine trip/load rejection with no bypass
- FWCF = Feedwater controller failure
- PRFDS = Pressure Regulator Failure Downscale
- RPT = Recirculation pump trip
- EOC = End-of-cycle
- MOC = Middle-of-cycle

**ODYN Statistical Adders – BWR/2-3  
GEMINI Methods – PANAC11 - GNF2 Fuel**

The following table provides the statistical adjustment factors (SAFs) and scram speed adjustment factors (SSAFs) to be applied to BWR/2-3 plants using the GNF2 fuel type when the reload licensing analyses are performed with GEMINI/ODYN/PANAC11 methods. The SAFs are used in determining the Option B MCPR operating limit, and the SSAFs are used to determine the Option A MCPR operating limit. Plant specific statistical adders may be used in accordance with the approved methodology. If plant specific statistical adders are generated, they will be provided to the NRC for information.

Transient/Condition	Cycle Exposure	Option B	Option A	Option A (ITS)
TT/LRNBP w/o RPT	EOC	[[		
FWCF w/o RPT	EOC			
HPCIL8** w/o RPT	EOC			
TT/LRNBP w/o RPT	MOC			
FWCF w/o RPT	MOC			
HPCIL8** w/o RPT	MOC			]]

\*\* This event is for BWR/3 plants only.

TT/LRNBP = Turbine Trip/Load Rejection with No Bypass

FWCF = Feedwater Controller Failure

HPCIL8 = Inadvertent High Pressure Coolant Injection with Level 8 Turbine Trip

RPT = Recirculation Pump Trip

EOC = End-of-Cycle

MOC = Middle-of-Cycle

ITS = Improved Technical Specifications (modified scram speed basis)

**ODYN Statistical Adders - Columbia  
GEMINI Methods – PANAC11 - Atrium 10 Fuel Product Line**

The following table provides the statistical adjustment factors (SAFs) and scram speed adjustment factors (SSAFs) to be applied to Columbia using the Atrium 10 fuel type when the reload licensing analyses are performed with GEMINI/ODYN/PANAC11 methods. The SAFs are used in determining the Option B MCPR operating limit, and the SSAFs are used to determine the Option A MCPR operating limit. These plant specific statistical adders have been developed in accordance with the approved methodology.

Transient/Condition	Cycle Exposure	Option B	Option A
TT/LRNBP with RPT	EOC	[[	
FWCF with RPT	EOC		
TT/LRNBP w/o RPT	EOC		
FWCF w/o RPT	EOC		
TT/LRNBP with RPT	MOC		
FWCF with RPT	MOC		
TT/LRNBP w/o RPT	MOC		
FWCF w/o RPT	MOC		]]

- TT/LRNBP = Turbine Trip/Load Rejection with No Bypass
- FWCF = Feedwater Controller Failure
- RPT = Recirculation Pump Trip
- EOC = End-of-Cycle
- MOC = Middle-of-Cycle