Time to reach 800°C

Air Cooling

(EP)

Case	Decay Time	BU	OXIDATION MODEL	Cldg AIR
AC-1	1 yr	60	A	A
AC-2	1 yr	60	B	A
AC-3	"	60	A	B
AC-4	1 yr	60	B	B
AC-5	1 yr	50	A	A
AC-6	2 mo	60	A	A
AC-7	2 yr	60	A	A
AC-8	5 yr	60	A	A
AC-9				
AC-10				
AC-11				
AC-12				

Boiledown Case

BD-1	2 mo	60	1/R	N/A	[Human Error Sensitivity]

STEAM Cooling

SC-1	1 Yr	60	A STEAM	N/A	[show Importance of ADIABATIC ASSUMPTION]

Critical DECAY Time

(Insurance)

COT-1	AIR	60	A	A
-2	AIR	60	B	A
-3	AIR	60	B	B
-4	AIR	60	A	B
-5	AIR	50	A	A
-6	AIR	70	A	A
-7	STEAM	60	A STEAM	A
-8				
-9				
-10				

Looks ok
GH
5/31/00
2:25 PM

Q135

→ 4 Calcs

Time

	Time	BLR	Oxidation Models	Blds Bldg Rate
Air Cooling	1yr	50, 60	1	A
	6month, 1yr		2	B
	2yr, 5yr		3	C

Result is time 30°C → (500, 700)

Input to adhoc EP

Time to no Fire for given bldg flow rate.

→ Have partial drain down to show adiabatic is not too conservative - steam cooling

→ 2 couple of airflow cases

#1 1yr, 60, 2, B

#2 vary time 2 month
curves don't get to 6 months
get Walt or Tony

#3 2yr

#4 5yr

Do 2 month adiabatic calculation

[redacted]

- Runaway Oxidation 0649 NUREG/CR-6218
- Gap release Iodine, fuel fines & ruthenium ~~SAND91-0731~~
- Clad swelling CR-6441

Aluminum melting 640°
Rack structural integrity
Steel & zirconium 435°C eutectic
Steel & boron carbide 1150°C

If one assembly is within 100°C of assembly with runaway oxidation R.O. then first assembly would also have R.O.

1.3
Rack integrity assumption - rack intact remains
Ventilation assumption - perfect

Current Exemptions Are they ok?

Source Term for ACRS - Not sufficient difference

5-10 hours EP

Partial Draindown times
What was our base assumption before?

Mark 9, I got worst

3. expectations of new methods for TKI
reference
characteristics
not ~~used~~ any

4. ~~Severe problem~~ resolved

Executive summary 10-6

Took out industry initiative for less than one year

Under one year period ?

No ~~Zero~~ chart – Say in words what chart says

Make Chapter 5

~~DIR~~ IPC

[redacted]

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5-10 hours EP

Partial Draindown times
What was our base assumption before?

Mark & I get
next

3. expectations of new methods for TKI
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Executive summary 10-6

Took out industry initiative for less than
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Under one year period ?

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Make Chapter 5

~~DIK~~ IPC

Heat up times adiabatic & steam as function of
Charlie

Uncertainity in calcs

How did we do boil off calcs

Heat up calcs

Meet Jerry & Walt

Reference Plan
Seismic characteristics
Failure

Staff's analysis Chapter 3 Risk
Defenition of Ref Plant
SDA
FPC
Pool cooling
Mean freq of Seismic failure
CDFs assuming
checklist is met

78%

3.5

Implications for regulatory space

Inputs & how used
Results

Where decay heat came from

Problems with other codes

Surrey: at Power calculations
decommissioning calculations

Do comparison of RHO for above

Response to ACRS said Final Report would address:

1. Ruthenium under Air oxidation

2. MELCOR / plume related parameters

3. Z fire
   - Z hydride oxidation
   - Z nitrogen reactions
   - Breakaway oxidation
   - Intermetallic reactions
   - Partial Drain down

Joe Time for 10 hours
Max time for fire (Partial drain down)

Gautam's Input

Format for Public comments.

6/28/00

Provide supplemental report Sensitivities for Ruthenium/plume dispersal/fuel fines

~~Supplemental~~

End of next work for bottom line #

Differences in Jason's calc & 1150 Numbers 7/7

Draft Supple 7/14

Check SKi comments d[illegible] addressed - Dudley