

Table 2-1
Test Case 1 Input Rock and Air Properties

Properties	Rock	Air
Conductivity (k) (watts per meter per degree Kelvin [W/m/K])	2.0	-
Diffusivity, (α) (square meter per second [m ² /s])	0.85e-06	-
Initial Temperature (degrees centigrade [°C])	20	21
Mass Flow Rate (kilogram per second [kg/s])	-	0.1
Surface Heat Transfer (h) (watts per square meter per degree Kelvin [W/m ² /K])	2.0	-
Specific Heat (joules per kilogram per degrees Kelvin [J/kg/K])	900	1000

Table 2-2
NUFT Input Parameters -Thermal Properties of the Rock Domain

	Solid Density (kg/m ³) ^a	Specific Heat (J/kg/K) ^b	Wet conductivity (W/m/K) ^c	Dry conductivity (W/m/K)	Initial Saturation (1)	Permeability (m ²) ^d	Porosity (1)
Fracture	29.69	900	0.01	0.01	0.001	1.29e-16	0.011
Matrix	3038.8	900	1.99	1.99	0.001	3.04e-17	0.13

^a Kilograms per cubic meter.

^b Joules per kilogram per degrees Kelvin.

^c Watts per meter per degree Kelvin.

^d Square meter.

Table 2-3
Comparison Between Inverse REKA Evaluation Results and Expected Values

	Expected	REKA Estimate	Relative Difference [%]
Conductivity (k) (watts per square meter per degree Kelvin [W/m/K])	2.0	2.0017	0.085
Diffusivity (α) (square meter per second [m ² /s])	0.85e-06	0.85e-06	0

Table 4-1
Variations of Input Properties Used in the Sensitivity Analysis

Parameter	Figures 4-1 through 4-4						Figures 4-5 through 4-8						Figures 4-9 through 4-12						Figures 4-13 through 4-16			
k^a (watts per meter per degree Kelvin [W/m/K])	2.0	2.0	2.0	1.2	1.6	2	2.0	2.0	2.0	1.2	1.6	2	2.0	2.0	2.0	1.2	1.6	2	2.0	2.0	2.0	2.0
h^b (watts per square meter per degree Kelvin [W/m ² /K])	1.89	3.0	4	1.89	1.89	1.89	1.89	3.0	4	1.89	1.89	1.89	1.89	3.0	4	1.89	1.89	1.89	1.89	1.89	1.89	1.89
α^c (kilogram per cubic meter [kg/m ³])	2540	2540	2540	2540	2540	1905	2540	2540	2540	2540	2540	1905	2540	2540	2540	2540	2540	1905	2540	2540	2540	2540
AFR ^d (cubic meter per second [m ³ /s])	15	15	15	15	15	15	5	5	5	5	5	5	1	1	1	1	1	1	5	5	5	5
ATL ^e (metric tonnes of uranium per acre [MTU/acre])	56	56	56	56	56	56	37	37	37	37	37	37	5	5	5	5	5	5	85	85	85	85
Intake Air Temperature (degrees centigrade [°C])	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	30	25	25
Intake Air Relative Humidity (percent [%])	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	90	30
Percolation (meters per year [mm/year])	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	50

^a Surface heat transfer.

^b Bulk density of porous and fractured rock.

^c Rock thermal conductivity.

^d Air flow rate.

^e Areal thermal load.

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