

FEP

Reference Scenarios Development based on Interaction Matrix and FEP for the Near-surface LILW Repository

150

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가 . 가 FEP
가 . 가
Near-field, Far-field, Biosphere
가 .
6 가 .

Abstract

Systematic development procedure of radionuclide release scenarios was established based on FEP list and Interaction Matrix for near-surface LILW repository. FEPs were screened by experts' review in terms of domestic situation and combined into scenarios on the basis of Interaction Matrix analysis. Under the assumption of design scenario, system domain was divided into three sections: Near-field, Far-field and Biosphere. Sub-scenarios for each section were developed, and then scenarios for entire system were composed of sub-scenarios from each section. Finally, 6 reference scenarios for near-surface repository were selected through scenario screening.

1.

가

Process) (Interaction Matrix) FEP(Features, Events, and
 가 FEP 가
 가 FEP 가 가 FEP
 가 가 가 가
 가 가 가

2.

가 , 가
 가 1) , 2) , 3)
 , 4) 가 , 5)
 300 (100 200), 6)
 [1]. 가

ISAM FEP [1]
 FEP 가 FEP
 n FEP 2ⁿ 가 가 FEP
 가
 가
 FEP . 1

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2

Near-field, Far-field, Biosphere

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2.1 Near-field

field , backfill, vault Near-field
가

(1) (Normal Evolution) – **NSS1**
가 , 가 far-field

(2) (Colloid Transport) – **NSS2**

backfill (pseudo-colloid)
[2].

(3) 가 (Gas Generation) – **NSS3**

가 [2].

2.2 Far-field

Far-field , Far-field
가 가

(1) Fracture Flow – **FSS1**

(2) Porous Flow – **FSS2**

가
가

(3) (Colloid Transport) – **FSS3**
Near-field 가

(4) (Undetected Features) – **FSS4**

2.3 Biosphere

, , , , 가
가

(1) (Water Resource)– **BSS1**

(2) (Discharge to Surface Water Body)– **BSS2**
가 (, , ,)

(3) (Soil and Sediment)- **BSS3**
가

3.

가 .
가
BSS1, BSS2, BSS3 Near-field Far-
field 가 .

가
FEP
, 가
3

3.1 1 :

(1) DS1-1
가 가
porous flow

(2) DS1-2
가 , 가
()

3.2 2 :

(1) DS2-1

backfill (pseudo-colloid)
가

(2) DS2-2

backfill (pseudo-colloid)
가
()

3.3 3 : 가

(1) DS3-1

가
Far-field porous flow

(2) DS3-2

가
()

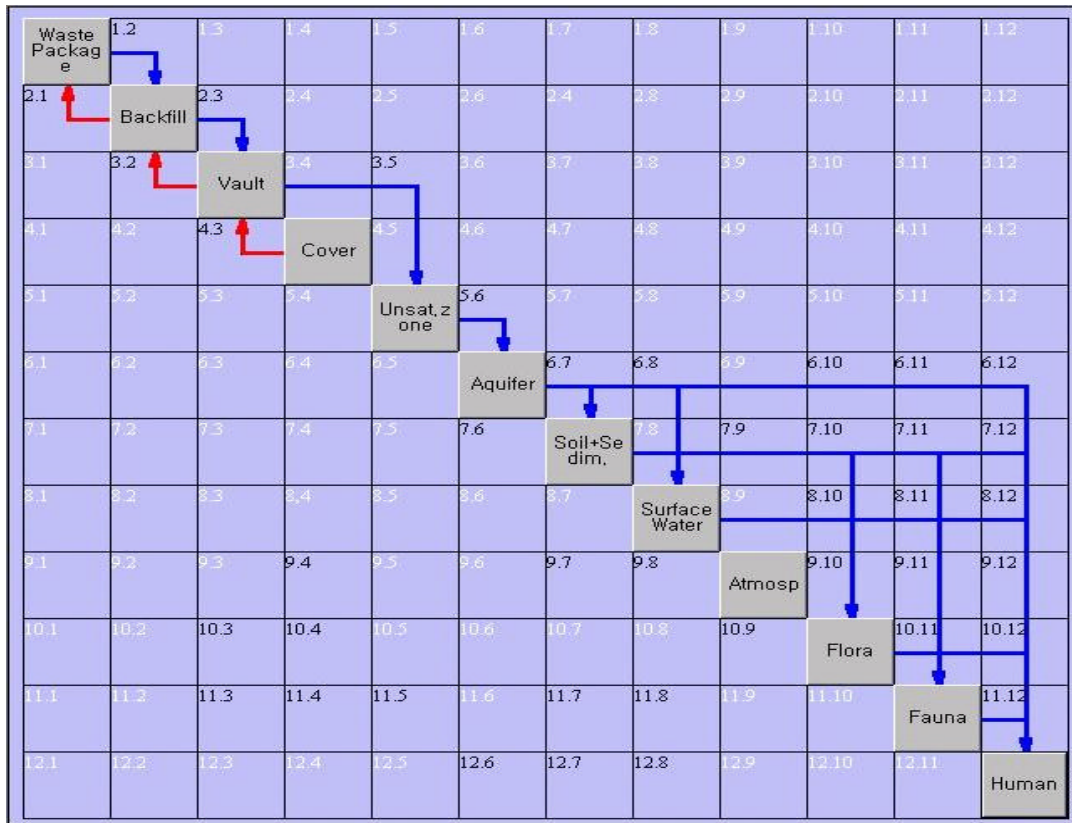
4.

FEP 6 FEP

Biosphere Near-field, Far-field,
가

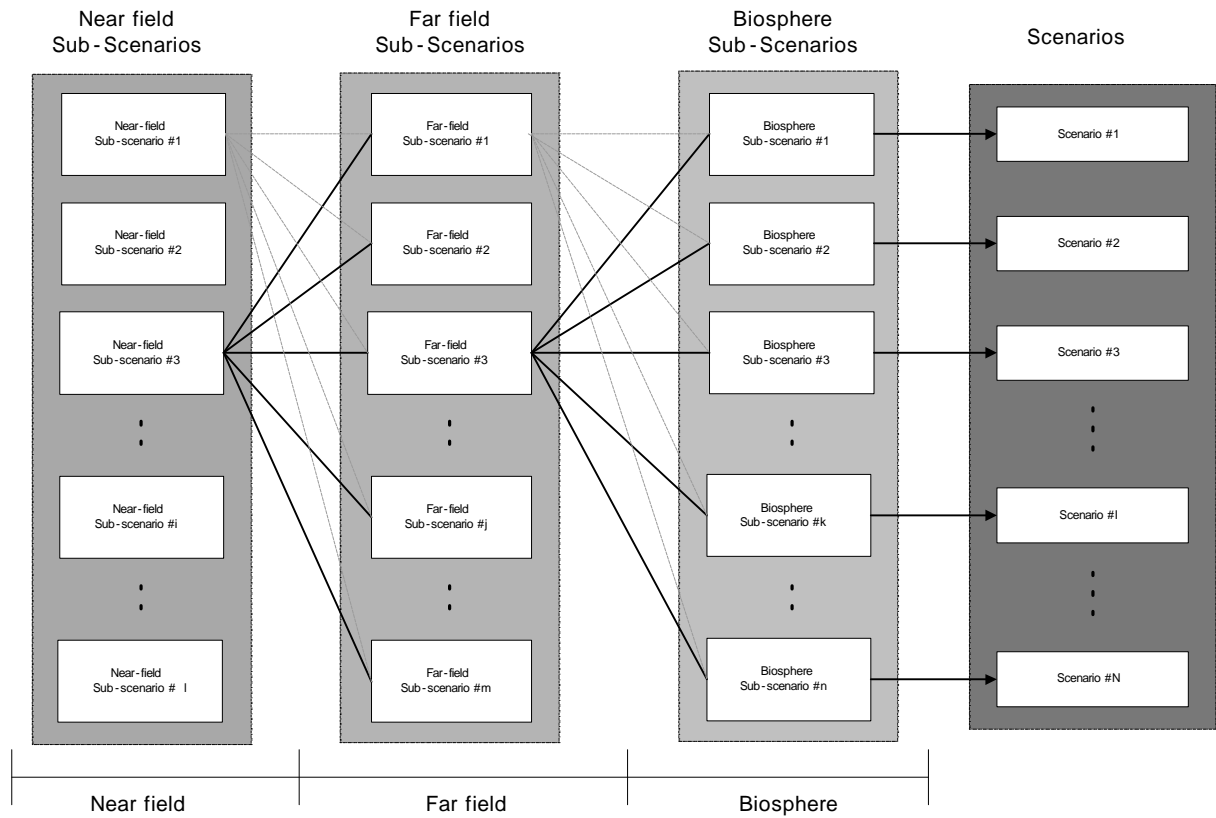
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- [2] KINS, , KINS/HR-174, , 1997
- [3] , , , 1994
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- [5] SKB, Scenario Development Methodologies, SKB Technical Report 94-28, 1994
- [6] SKB, The joint SKI/SKB scenario development project, SKB Technical Report 89-35, 1989



1.

12x12



2.

