

女川原子力発電所2号炉 確率論的リスク評価(地震PRA)について

平成30年6月7日
東北電力株式会社

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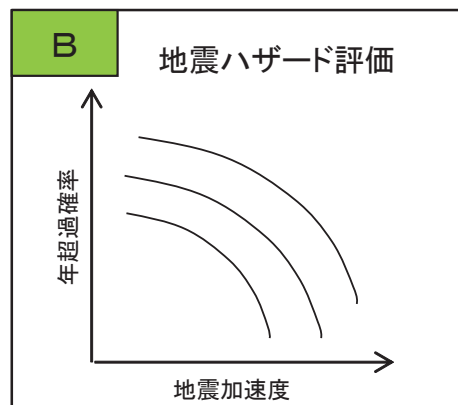
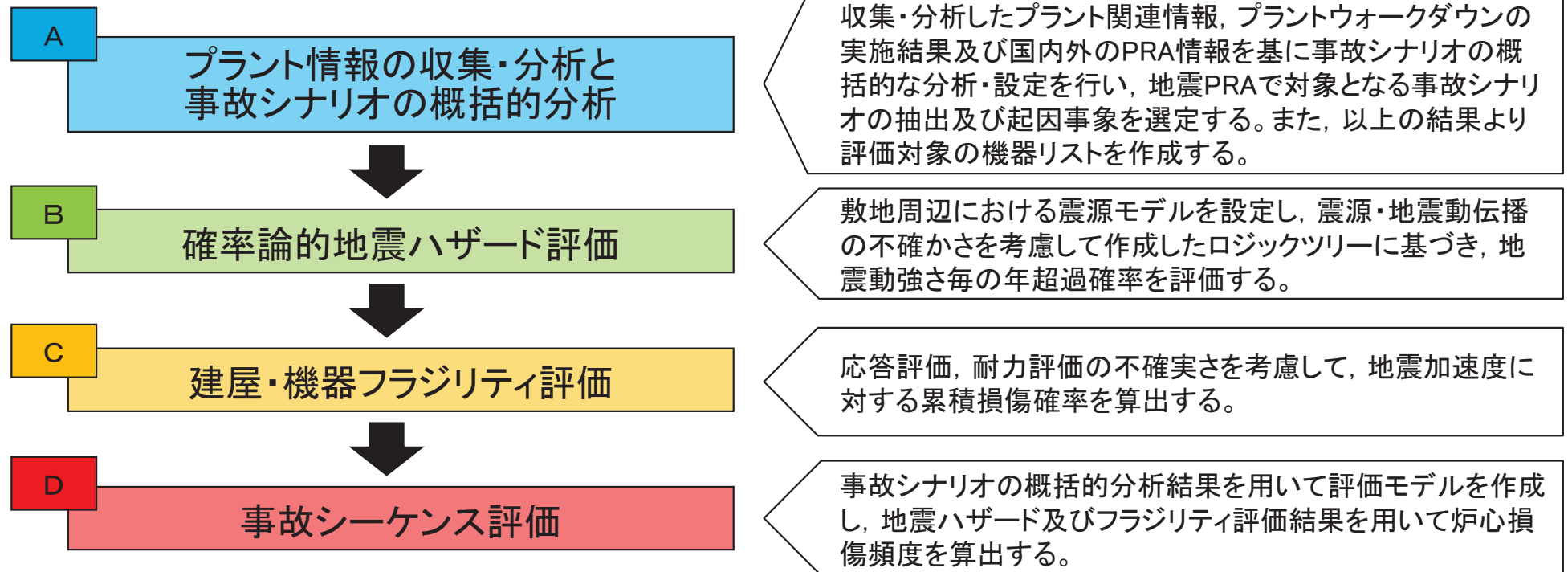
[参考] 第142回審査会合時と今回の地震ハザード評価の変更ポイント

1. はじめに

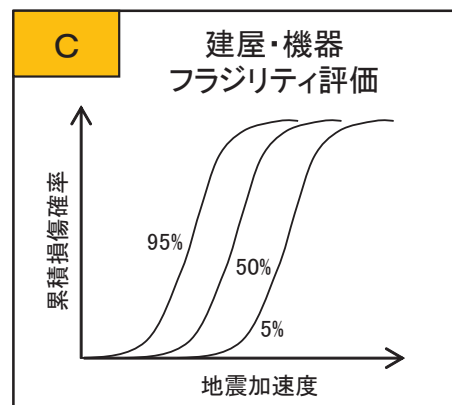
- 第142回審査会合（平成26年9月30日）において、女川2号炉の地震PRAについて全体の説明を行い、地震ハザードの審査後に改めて説明することとしていた
- 第558回審査会合（平成30年3月23日）において、地震ハザード評価について、「概ね妥当な検討がなされた」と評価された
- 本日は、地震ハザードの審査結果を踏まえた地震PRAについてご説明する

2. 地震レベル1PRAの手順

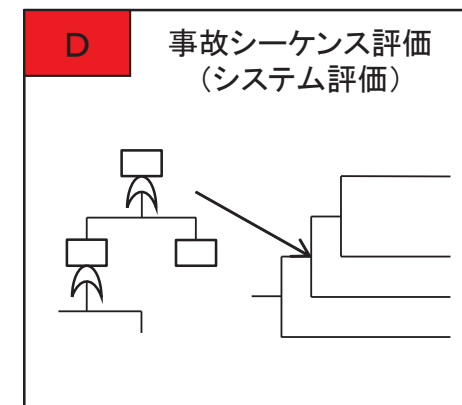
手順の概要



審査過程において見直し



建屋 fragility: 変更なし
機器 fragility: 地震ハザード変更を反映

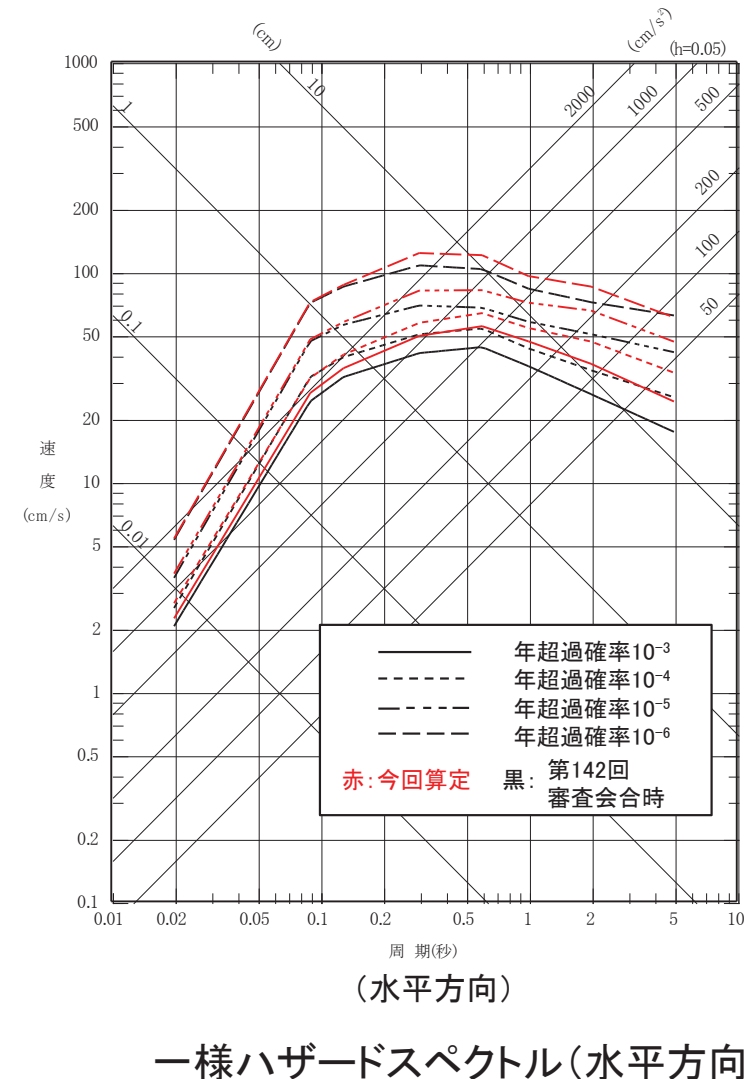
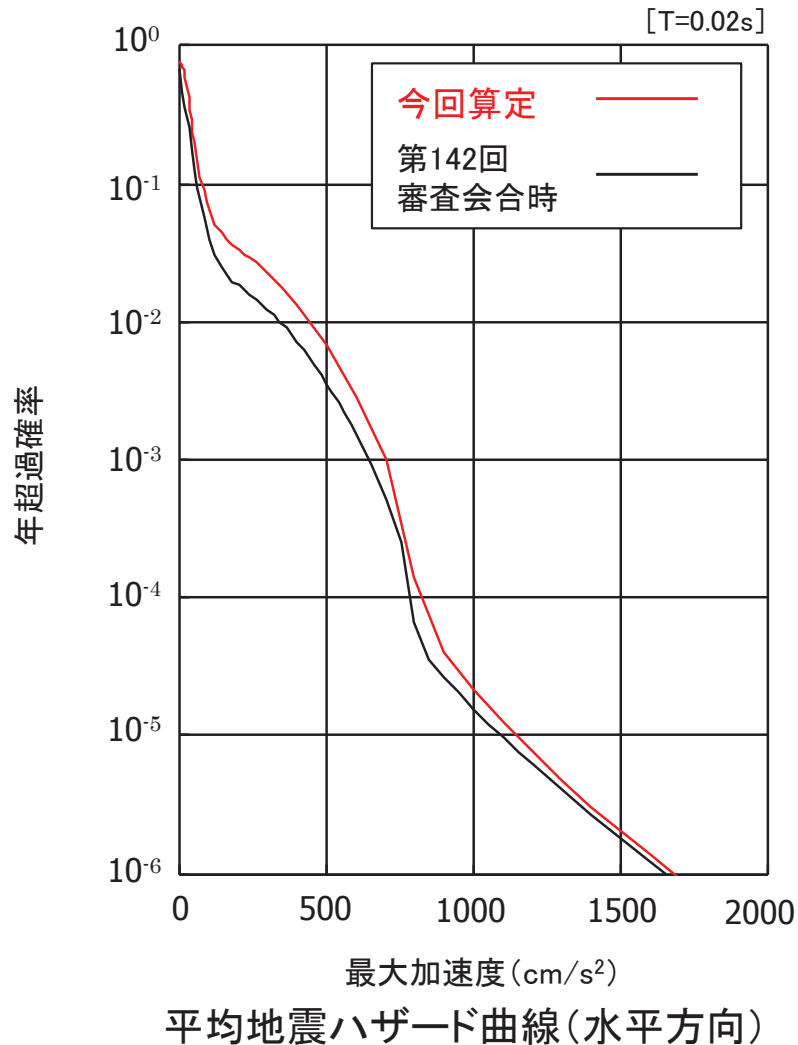


地震ハザード及び機器 fragility 評価を反映

3. 確率論的地震ハザード評価

■ 平均地震ハザード曲線及び一様ハザードスペクトル

- 基準地震動の年超過確率の参照に係わる審査を踏まえ評価した平均地震ハザード曲線及び一様ハザードスペクトルを示す。本ハザード評価については、第558回審査会合(平成30年3月23日)において、「概ね妥当な検討がなされた」と評価されている。



4. 建屋・機器フラジリティ評価(1/3)

■フラジリティ評価への影響(機器フラジリティ)

- 地震PRAに関する学会標準においては、建屋・機器のフラジリティ評価手法として「応答解析に基づく方法」、「原研法」、「安全係数法」の3手法が選択出来るとしており、機器フラジリティにおいては「安全係数法」を採用し評価を実施している。なお、安全係数法は、米国において評価手法として提案され、約40プラントでの評価実績を有する手法である
- 本手法では線形応答を前提として、設計応答に内在する保守性を安全係数として係数化し、この安全係数と不確かさを用いて機器フラジリティ評価を実施している
- 評価に用いる各種安全係数のうち、一様ハザードスペクトルと評価用地震動スペクトルを入力とする係数 F_1 があり、本係数を変更することで確率論的地震ハザードの影響を機器フラジリティ評価に反映することができる

$$A_m = \underbrace{(F_S \times F_\mu)}_{\text{耐力係数 } F_C} \times \underbrace{(F_{SA} \times F_D \times F_M \times F_{MC})}_{\text{機器応答係数 } F_{RE}} \times \underbrace{(F_1 \times F_2 \times F_3)}_{\text{建屋応答係数 } F_{RS}} \times A_d$$

A_m : 損傷加速度中央値

A_d : 評価用地震動の最大加速度

F_S : 強度係数

F_μ : 塑性エネルギー吸収係数

F_{SA} : スペクトル形状係数

F_D : 減衰係数

F_M : モデル化係数

F_{MC} : モード合成係数

F_1 : 解放基盤表面の地震動に関する係数

F_2 : 建屋への入力地震動に関する係数

F_3 : 建屋の地震応答に関する係数

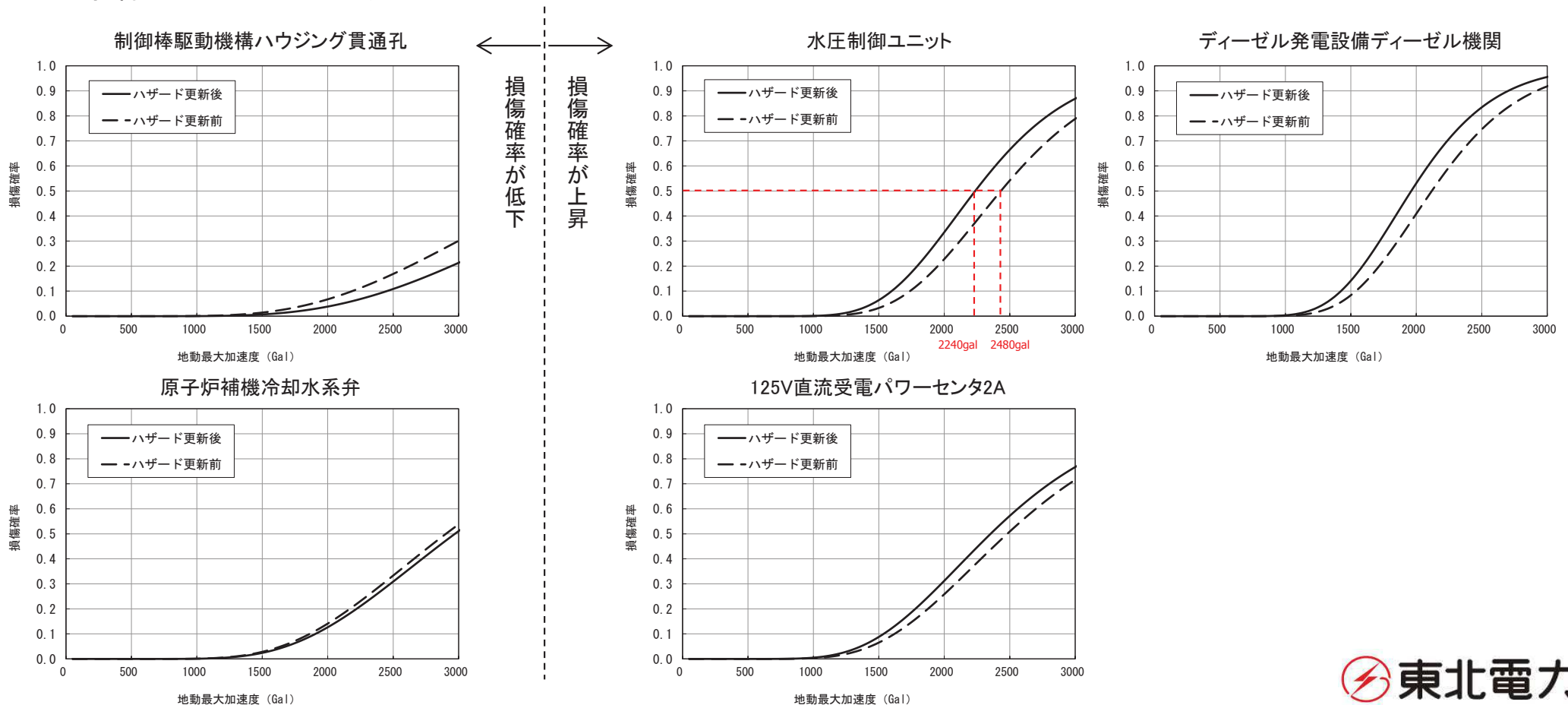
$$F_1 = \frac{\text{基準地震動の応答加速度}^*}{\text{一様ハザードスペクトルの応答加速度}^*}$$

※ 設備の固有振動数を考慮して
スペクトルより算出した加速度

4. 建屋・機器フラジリティ評価(2/3)

■フラジリティ評価への影響(機器フラジリティの変更前後比較)

- ハザードの変更に伴い、機器フラジリティ評価で用いる解放基盤表面の地震動に関する係数 F_1 を見直したことから、変更前後のフラジリティ曲線を比較した
- フラジリティは評価の特徴を踏まえて5グループ(「大型機器」、「静的機器」、「動的機器」、「電気盤・計装」及び「配管」)に分類しており、この5グループから代表機器を選定した変更例を以下に示す
- 設備ごとに固有周期が異なることから、フラジリティの影響も設備によって異なっている
- フラジリティの変動が大きい水圧制御ユニットにおいても、加速度損傷中央値は10%程度の変動に収まっており、機器フラジリティへの影響は大きくないものと考えている



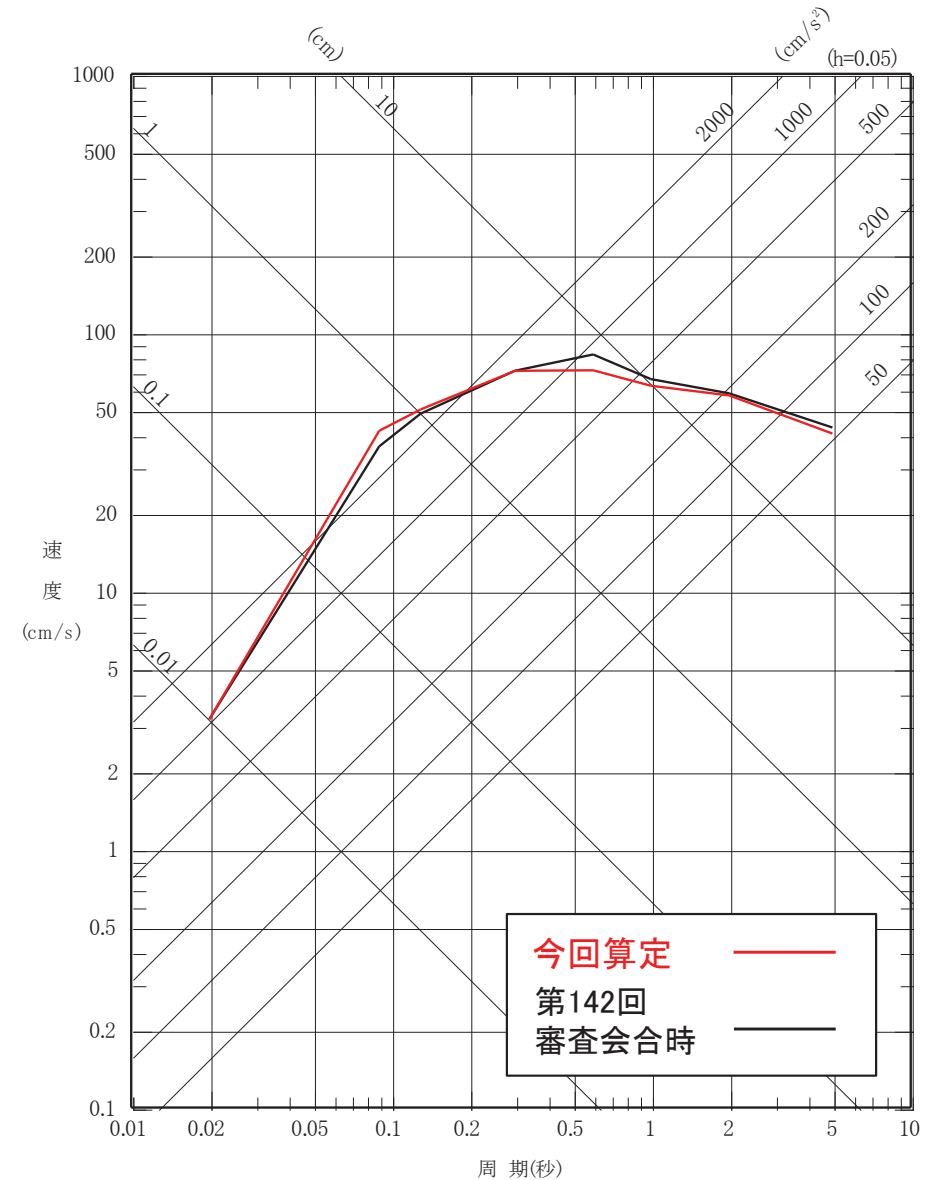
4. 建屋・機器フラジリティ評価(3/3)

■フラジリティ評価への影響(建屋フラジリティ)

- 当社は地震PRAにおける建屋フラジリティ評価において、地震PRAに関する学会標準でも認められている「現実的耐力と現実的応答による方法(応答解析に基づく方法)※1」を採用し評価を実施している

※1 「応答解析に基づく方法」とは、フラジリティ評価における現実的応答を、解析モデルを用いた地震応答解析により評価する方法である

- 新旧の建屋フラジリティ評価用模擬地震波ターゲットスペクトル(水平方向)を比較すると形状は概ね一致していることから、建屋フラジリティも大きくは変わらないと仮定し、建屋フラジリティは従前のものを踏襲した



建屋フラジリティ評価用模擬地震波
ターゲットスペクトル(水平方向)

5. 事故シーケンス評価(1/2)

■ 炉心損傷頻度評価結果(起回事象別)

- 地震PRAについての炉心損傷頻度: 3.3×10^{-5} [/炉年]
- 起回事象別の結果では, 交流電源・原子炉補機冷却系喪失を起因とする炉心損傷頻度が最も大きく(45.0%), 次いで外部電源喪失を起因としたもの(43.0%)となった

起回事象別炉心損傷頻度

| 起回事象 | 変更前 | | 変更後 | |
|-----------------|----------------------|-------------|----------------------|-------------|
| | 炉心損傷頻度 [/炉年] | 寄与割合 [%] | 炉心損傷頻度 [/炉年] | 寄与割合 [%] |
| 交流電源・原子炉補機冷却系喪失 | 7.7×10^{-6} | 43.6 | 1.5×10^{-5} | 45.0 |
| 外部電源喪失 | 6.9×10^{-6} | 39.0 | 1.4×10^{-5} | 43.0 |
| 直流電源喪失 | 6.0×10^{-7} | 3.4 | 1.2×10^{-6} | 3.6 |
| 制御建屋空調系喪失※1 | 5.9×10^{-7} | 3.3 | 4.3×10^{-7} | 1.3 |
| E-LOCA | 5.6×10^{-7} | 3.1 | 5.9×10^{-7} | 1.8 |
| 格納容器損傷 | 3.1×10^{-7} | 1.8 | 5.1×10^{-7} | 1.5 |
| 圧力容器損傷 | 3.1×10^{-7} | 1.8 | 4.0×10^{-7} | 1.2 |
| 制御建屋損傷 | 3.1×10^{-7} | 1.7 | 3.8×10^{-7} | 1.1 |
| 計測・制御系喪失 | 3.1×10^{-7} | 1.7 | 3.6×10^{-7} | 1.1 |
| 格納容器バイパス | 8.0×10^{-8} | 0.5 | 9.8×10^{-8} | 0.3 |
| 原子炉建屋損傷 | 2.1×10^{-8} | 0.1 | 2.5×10^{-8} | 0.1 |
| 合計 | 1.8×10^{-5} | 100.0※2 | 3.3×10^{-5} | 100.0※2 |

※1 フラジリティ評価の詳細化を実施(中央制御室送風機の動的機能維持評価について部品ごとの評価を実施する詳細評価を採用)

※2 四捨五入処理のため寄与割合の合計が100.0とならないことがある

5. 事故シーケンス評価(2/2)

■ 炉心損傷頻度評価結果(事故シーケンスグループ別)

- 事故シーケンスグループ別の結果では、長期TB(40.8%)とTW(35.4%)が大部分を占める結果となった

事故シーケンスグループ別炉心損傷頻度

| 事故シーケンスグループ | 変更前 | | 変更後 | |
|-------------|----------------------|---------|----------------------|---------|
| | 炉心損傷頻度[／炉年] | 寄与割合[%] | 炉心損傷頻度[／炉年] | 寄与割合[%] |
| 原子炉建屋損傷 | 2.1×10^{-8} | 0.1 | 2.5×10^{-8} | 0.1 |
| 格納容器損傷 | 3.1×10^{-7} | 1.8 | 5.1×10^{-7} | 1.5 |
| 圧力容器損傷 | 3.1×10^{-7} | 1.8 | 4.0×10^{-7} | 1.2 |
| 制御建屋損傷 | 3.1×10^{-7} | 1.7 | 3.8×10^{-7} | 1.1 |
| 計測・制御系喪失 | 3.1×10^{-7} | 1.7 | 3.6×10^{-7} | 1.1 |
| 制御建屋空調系喪失※1 | 5.9×10^{-7} | 3.3 | 4.3×10^{-7} | 1.3 |
| TQUV | 2.2×10^{-8} | 0.1 | 3.7×10^{-8} | 0.1 |
| TQUX | 7.9×10^{-7} | 4.5 | 1.6×10^{-6} | 4.9 |
| 長期TB | 6.9×10^{-6} | 38.6 | 1.4×10^{-5} | 40.8 |
| TBU | 2.3×10^{-7} | 1.3 | 4.2×10^{-7} | 1.3 |
| TBP | 2.3×10^{-8} | 0.1 | 4.4×10^{-8} | 0.1 |
| TBD | 6.0×10^{-7} | 3.4 | 1.2×10^{-6} | 3.6 |
| TW | 5.6×10^{-6} | 31.6 | 1.2×10^{-5} | 35.4 |
| TC | 9.5×10^{-7} | 5.3 | 1.6×10^{-6} | 4.8 |
| E-LOCA | 7.2×10^{-7} | 4.1 | 8.0×10^{-7} | 2.4 |
| 格納容器バイパス | 8.0×10^{-8} | 0.5 | 9.8×10^{-8} | 0.3 |
| 合計 | 1.8×10^{-5} | 100.0※2 | 3.3×10^{-5} | 100.0※2 |

※1 フラジリティ評価の詳細化を実施(中央制御室送風機の動的機能維持評価について部品ごとの評価を実施する詳細評価を採用)

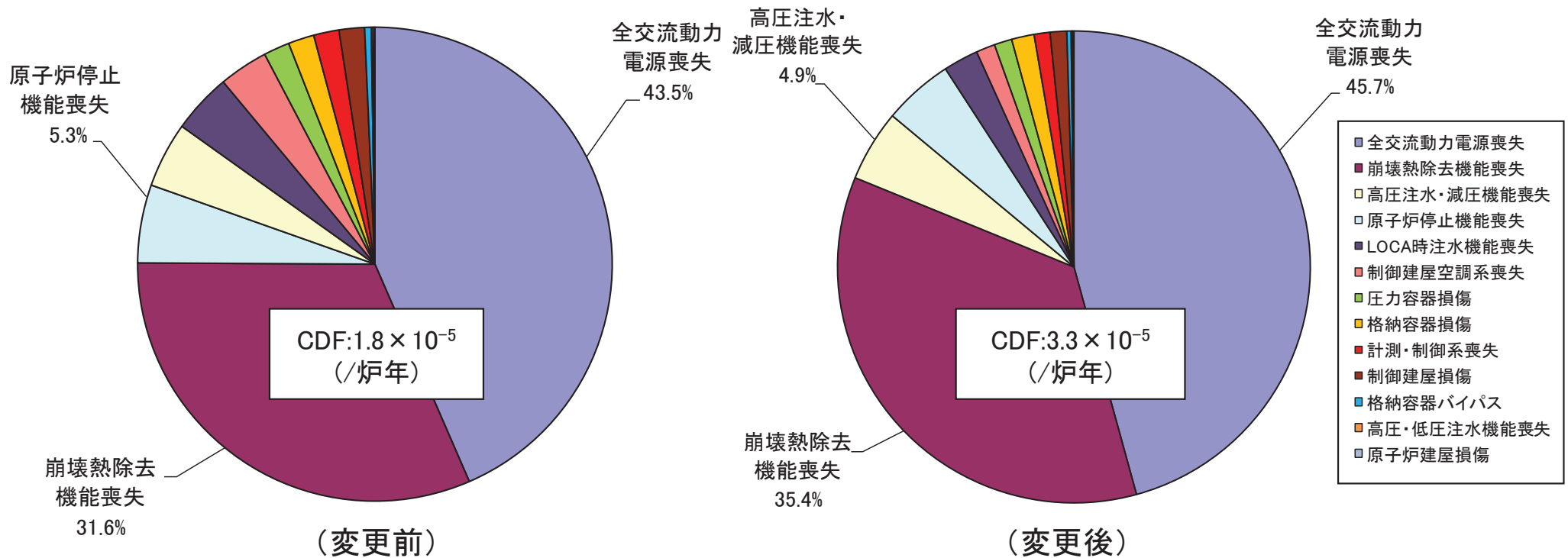
※2 四捨五入処理のため寄与割合の合計が100.0とならないことがある

6. 確率論的地震ハザード見直しの影響確認

■ 炉心損傷頻度への影響

< 評価結果 >

- 確率論的地震ハザード及びフラジリティの変更に伴い、各加速度区分の発生頻度及び全ての評価対象機器の損傷確率に影響を与えることから、全ての事故シーケンスの発生頻度が変更となった
- 変更前の評価結果が、 1.8×10^{-5} (/炉年) であったのに対して変更後の評価結果は、 3.3×10^{-5} (/炉年) であった。また、下図に示すように、リスクプロファイルは変更前後でほぼ同等の結果となった

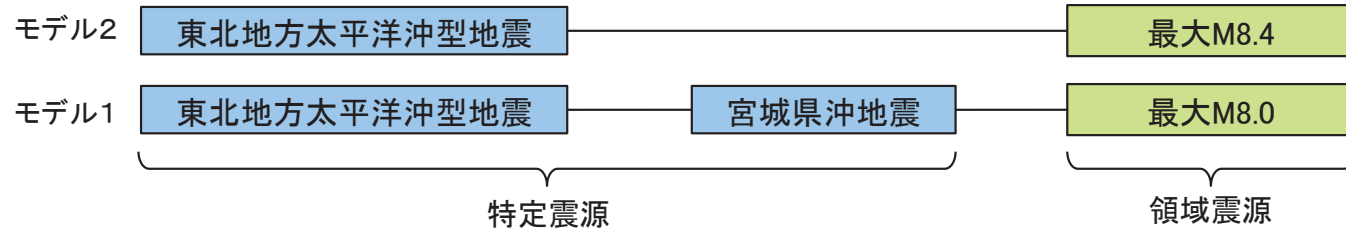


事故シーケンスグループ別炉心損傷頻度寄与割合の推移(地震PRA)

[参考]第142回審査会合時と今回の地震ハザード評価の変更ポイント(1/3)

■特定震源(プレート間地震)の評価に係わるロジックツリーの変更

- 女川においては、震源モデルの設定に際し、地震調査研究推進本部の知見を参考にしている。
- 地震本部(2013)では、宮城県沖に関わる特定震源と領域震源を、モデル1、モデル2としてそれぞれ次のように評価を実施。



※モデル1(従来モデル): 主要な活断層や海溝型地震の長期評価をベースとしたモデル
 モデル2(検討モデル): 地震活動度の不確実性を大きくしたモデル

第142回審査会合時

特定震源

領域震源

- ・特定震源の宮城県沖地震と領域震源は震源域が重複している。
- ・特定震源の宮城県沖地震でプレート間の固着域が破壊することと、領域震源でプレート間の固着域が破壊することの両方を考慮するのは過大評価になる。

宮城県沖地震と領域震源を等分配に設定 (頻度を1/2)

【基準地震動の年超過確率の参照の審査でのコメント】
 宮城県沖の特定地震と領域震源の発生頻度を1/2とする考え方は重み付けが小さいともみえるので、他の考え方も含め再度、整理して説明すること。

今回 第558回審査会合(平成30年3月23日)で概ね妥当と評価

特定震源

領域震源

- ・日本原子力学会標準(2015)では、対象とする認識論的不確実さ要因について、判断が分かれる項目、評価方法が複数存在する項目等のうち、影響を及ぼす項目をロジックツリーで考慮することとされている。

地震本部(2013)のモデル1、モデル2を分岐させたロジックツリーを設定

[参考]第142回審査会合時と今回の地震ハザード評価の変更ポイント(2/3)

■特定震源(内陸地殻内地震)の評価内容の変更

- ・最新の調査結果等に基づき、評価対象の活断層を追加および諸元の見直し(下表の朱書き部分)
- ・「単独の活動を考慮」と「連動の活動を考慮」を分岐させたロジックツリーを設定

| 第142回審査会合時 | 今回 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|---|-------------|--------------------|-------|-------------|-------------|-------|---------------|-------------|--------|--------|--------|--------|--------|--------|---------------|----------------------|----------------------|-------|------------|------|-----------|-----|------------------------|---------------|-----------|-----------|-----------|-----------|---------|---------|-----------|-----------|------|------|------|-----------|------|------|-------|------|-------|-------|-------|-------|-------|-------|------|-------|--------|------|---------|--------|---|---------|-----|-------------------------|-----|----------------------------|-----|-----------------------------|-----|-------------|-----|-------|-----|-------------|-----|---------------|-----|--------|-----|--------|-----|--------|-----|---------------|-----|----------------------|-----|-------|-----|------|-----|-----|-----|------------|-----|-----------|-----|------------------------|-----|---------|-----|------------------|-----|---------------|-----|-----------|-----|-----------|-----|---------|-----|-----------|-----|------|-----|-----------|-----|------|-----|------|-----|-------|-----|-------|-----|-------|-----|-------|-----|------|-----|--------|-----|---------|-----|
| 単独の活動を考慮 | 単独の活動を考慮 1/2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| ■, ■, ■: 連動を考慮した断層 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| F-2断層・F-4断層 | 7.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| F-5断層 | 6.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| F-6断層~F-9断層 | 7.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| f-13断層 | 6.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| f-14断層 | 6.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| f-15断層 | 6.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 網地島南西沖で1測線のみで認められる断層 | 6.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| III断層 | 7.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| IV断層 | 7.6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| V断層 | 7.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1900年宮城県北部の地震 | 7.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 長町-利府線断層帯 | 7.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 北上低地西縁断層帯 | 7.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 山形盆地断層帯 | 7.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 福島盆地西縁断層帯 | 7.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 双葉断層 | 7.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 横手盆地東縁断層帯 | 7.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 鬼首断層 | 6.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 愛子断層 | 6.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 作並屋敷平 | 6.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 遠刈田断層 | 6.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 鶴巻田断層 | 6.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 尾花沢断層 | 6.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 楯岡断層 | 6.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 新山寺境ノ目 | 6.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 田沢-一里断層 | 6.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 仙台湾の断層群による地震 | 7.6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 石巻平野周辺の断層群による地震 | 7.6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 岩手・宮城県境の断層群による地震 | 7.6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

■地震基盤相当の速度構造の見直し

- ・Noda et al.(2002)に基づく地震動評価において、地震基盤相当の速度構造を見直した。
 S波速度 = 3,000m/s → 2,200m/s P波速度 = 5,000m/s → 4,200m/s

[参考]第142回審査会合時と今回の地震ハザード評価の変更ポイント(3/3)

- ①特定震源(プレート間地震)の評価に係わるロジックツリーの変更 …… 主に $10^{-2} \sim 10^{-3}$ の年超過確率に影響(図1参照)
- ②特定震源(内陸地殻内地震)の評価内容の変更 …… 主に低頻度, 長周期のスペクトル形状に影響
(影響度は低)(図2参照)
- ③地震基盤相当の速度構造の見直し …… 主に長周期帯のスペクトル形状に影響(図2参照)

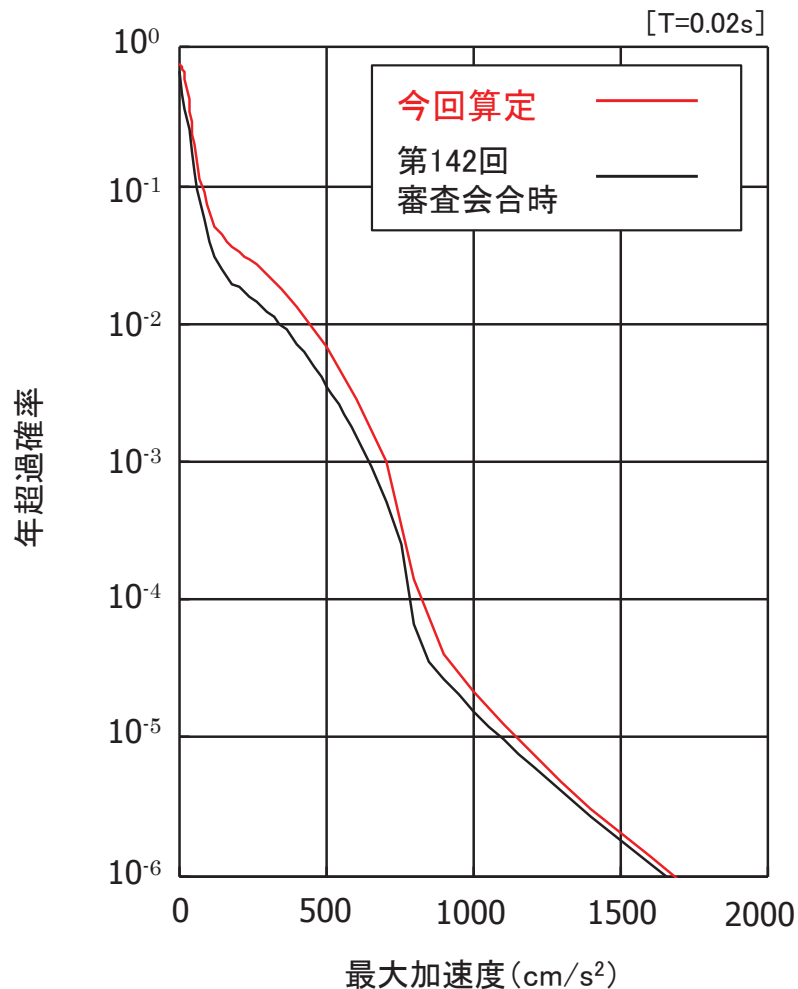


図1 平均地震ハザード曲線(水平方向)

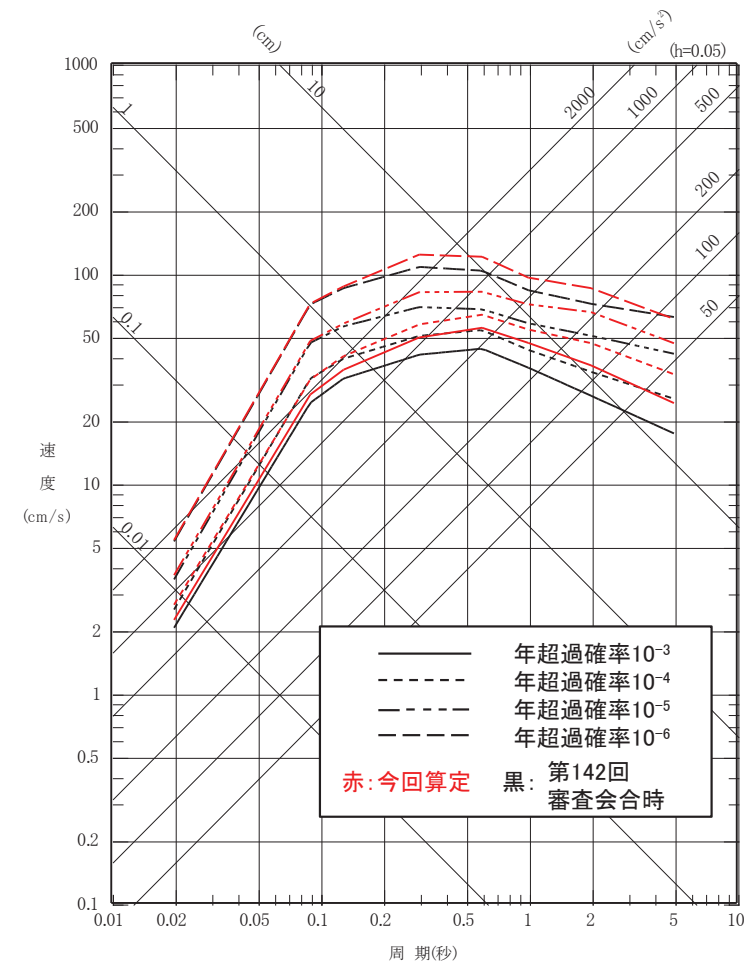


図2 一様ハザードスペクトル(水平方向)