
BR 79 / 2010

INSURANCE ACT 1978

1978 : 39

**INSURANCE (PRUDENTIAL STANDARDS) (CLASS 4 and CLASS 3B
SOLVENCY REQUIREMENT) AMENDMENT ORDER 2010**

In exercise of the powers conferred upon the Bermuda Monetary Authority by section 6A of the Insurance Act 1978, the following Order is made:

Citation and commencement

1 This Order may be cited as the Insurance (Prudential Standards) (Class 4 and Class 3B Solvency Requirement) Amendment Order 2010, and shall come into operation on the 31st day of December 2010.

Interpretation

2 In this Order “principal Order” means the Insurance (Prudential Standards) (Class 4 Solvency Requirement) Order 2008.

Paragraph 2 of principal Order amended

3 Paragraph 2 of the principal Order is amended by inserting the following definitions in their alphabetical order—

“catastrophe risk” means the risk of a single catastrophic event or series of catastrophic events that lead to a significant deviation in actual claims from the total expected claims;

“concentration risk” means the risk of exposure to losses associated with inadequate diversification of portfolios of assets or obligations.

“credit risk” includes the risk of loss arising from an insurer’s inability to collect funds from debtors.

“group risk” means any risk of any kind, arising from membership of a group.

“legal risk” means the risk arising from (a) an insurer’s failure to comply with statutory or regulatory obligations; or (b) failure to comply with its bye-laws; or (c) failure to comply with any contractual agreement.

“liquidity risk” means (a) the risk arising from an insurer’s inability to meet its obligations as they fall due or (b) an insurer’s inability to meet such obligations except at excessive cost.

“market risk” means the risk arising from fluctuations in values of, or income from, assets or in interest rates or exchange rates.

“operational risk” means the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events, including legal risk.

“premium risk” means the risk that premium is insufficient to meet future obligations.

“reputational risk” includes risk of adverse publicity regarding an insurer’s business practices and associations.

“reserve risk” means the risk that an insurer’s reserves would be insufficient to satisfy its obligations.

“strategic risk” means the risk of an insurer’s inability to implement appropriate business plans and strategies, make decisions, allocate resources, or adapt to changes in the business environment.

Paragraph 3 of principal Order amended

4 Paragraph 3 (3) of the principal Order is amended by inserting “Class 3B or ” before “Class 4”.

Paragraph 5 of principal Order amended

5 Paragraph 5 (1) of the principal Order is amended by inserting “Class 3B or ” before “Class 4”.

Paragraph 6 of principal Order amended

6 Paragraph 6 (2) of the principal Act is amended by inserting “Class 3B or ” before “Class 4”.

Schedule V amended

7 (1) The Schedule of Risk Management of Schedule V of the principal Order is amended —

- (a) in the subheading by inserting “Class 3B or ” before “Class 4” ;
- (b) by deleting paragraphs (a) and (b);
- (c) by deleting in paragraph (n) “description of the insurers risk management program”
- (d)by amending **“INSTRUCTIONS AFFECTING SCHEDULE V”** by deleting paragraphs (j) and (k) and substituting the following—
 - “(j) list of statutory lines and statutory territories that have catastrophe exposures as set out under paragraph (o);
 - (k) the projected net premiums written, underwriting profit or loss, and net income or loss and a description of underwriting strategy shall disclose:
 - i) the insurer’s latest estimate of annual net premiums written;
 - ii) underwriting profit or loss;
 - iii) net income or loss for the year following the relevant year either for the insurer or on a group basis with disclosure of the estimated percentage of the insurer’s contribution relative to the group and
 - iv) a description of the insurer’s underwriting strategy.”;
 - (l) loss triangles by broad line of business groupings: “Property”, “Property reinsurance”, “Casualty”, “Financial

Lines”, “Other specialty” and “Structured/finite reinsurance”.”

Schedule VI amended

8. Schedule VI of the principal Order is amended in paragraph (a) by inserting “Class 3B or” before “Class 4”.

Schedules VII and VIII added

9. The principle Order is amended by the insertion of new Schedules VII and VIII after Schedule VI as follows:

“SCHEDULE VII

(Paragraph 6)

SCHEDULE OF COMMERCIAL INSURER’S SOLVENCY SELF ASSESSMENT (CISSA)

The Schedule of CISSA shall provide particulars of the following matters:

- a) Table 8: CISSA capital summary disclosing the insurer’s own capital computations, insurer’s plans for raising additional capital and contingency arrangements impacting the available capital.
- b) Table 8A: CISSA general questions relating to an insurer’s risk management and governance program, the review and approval of CISSA, integration of CISSA into the strategic decision making process, governance and controls surrounding the model(s)/tool(s) used to compute the capital, assessment of concentration risk and risk appetite of an insurer.
- c) Insurer’s qualitative and quantitative assessment of the following risk categories:
 - o Table 8B: Catastrophe risk;
 - o Table 8C: Reserve risk;
 - o Table 8D: Premium risk;
 - o Table 8E:Market risk;
 - o Table 8F: Credit risk;
 - o Table 8G: Liquidity risk;
 - o Table 8H: Operational risk; and

o Table 8I: Group, Reputational and Strategic risk.

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INSTRUCTIONS AFFECTING SCHEDULE VII

Table 8

CISSA Capital Summary

	Projected Target Economic Capital	Projected Economic Capital at 99.0% TVaR	Projected Economic Capital at 99.95% TVaR
CAPITAL			
Catastrophe risk			
Reserve risk			
Premium risk			
Market risk			
Credit risk			
Liquidity risk			
Operational risk			
Group, Reputational and Strategic risk			
Other (specify)			
Total capital pre-diversification between risk categories			
Diversification credit between risk categories			
Total capital after diversification between risk categories			

Table 8, continued

ADDITIONAL INFORMATION

1. What is the primary reason(s) (select multiple responses where applicable) for aiming at the disclosed Projected Target Economic Capital amount? (select all that apply)

- ☐ target agency rating (e.g. "A-", "AA", etc);
- ☐ market share;
- ☐ business expansion;
- ☐ nature of product(s) (e.g. risk characteristics);
- ☐ manage downgrade risk; and
- ☐ others (briefly describe).

2. What methodology is used to aggregate the risk categories?

3. Does the insurer have sufficient capital and liquidity based on CISSA to achieve its medium and long-term (e.g. 2 to 5 years, etc.) strategic objectives? (Yes or No)

If no, briefly describe the potential adverse consequences.

4. What contingency plans are in place for raising additional capital under stress situations? (select all that apply)

- ☐ parental guarantees;
- ☐ revolving letters of credit;
- ☐ issue subordinated debt;
- ☐ issue preference shares;
- ☐ float additional shares;
- ☐ capital injections from parent;
- ☐ contingent surplus notes;
- ☐ catastrophe derivatives (e.g. bonds, swaps and options); and
- ☐ Others (briefly describe)

5. Does the insurer have arrangements/ contractual commitments to provide support to affiliates/other companies in stressed situations? (Yes or No)

If yes, briefly describe the arrangement(s) and the aggregate exposure.

6. Does the insurer have assets, above those that are encumbered (to support regulatory capital requirements and policyholder obligations) at the subsidiary level, that are not fungible and transferable? (Yes or No)

If yes, provide details and briefly describe how these have been reflected in the CISSA.

7. Has the insurer engaged in multiple gearing? (Yes or No)

If yes, provide details and amount of capital .

8. Briefly provide a narrative surrounding actual business continuity/disaster plans in place and any disaster mitigation and monitoring.

9. Was the CISSA return reviewed and approved by the Board of Directors?

INSTRUCTIONS AFFECTING TABLE 8

- o In this Table, the Projected Target Economic Capital, Projected Economic capital at 99.0%TVaR and Projected Economic Capital at 99.95% TVaR amounts for the respective risks are derived from Tables 8C, 8D, 8E, 8F, 8G, 8H, and 8I.
- o Total capital pre-diversification between risk categories is derived by aggregating all the risk categories.
- o Total capital after diversification between risk categories shall be derived by deducting the diversification benefit (calculated by an insurer) from the "Total capital pre-diversification between risk categories".

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- o Where a question/section is not applicable to an insurer or the options provided do not fully reflect the insurer's position, the insurer shall include a brief description in the comment fields.

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Table 8A

CISSA General Questions

1. CISSA Intergration

Is the CISSA and its underlying information integrated (ie considered when making key strategic decisions) into the insurer's strategic and risk management decision-making processes? (Yes or No)

If yes, how is CISSA and its underlying information used? (select all that apply)

- ☐ strategic planning;
- ☐ annual business planning;
- ☐ setting risk limits;
- ☐ defining risk appetite;
- ☐ evaluation of capital adequacy;
- ☐ allocation of capital to business segments and lines of business;
- ☐ capital management;
- ☐ determination of rates of return for pricing and underwriting guidelines;
- ☐ reinsurance purchase;
- ☐ determination of investment policies and strategies;
- ☐ meeting regulatory requirements;
- ☐ improving credit rating;
- ☐ improving investor relations;
- ☐ assessing risk adjusted product profitability;
- ☐ performance measurement and assessment;
- ☐ improving mergers and acquisition decisions; and
- ☐ others (list)

2. Concentration Risk

a) Is there a potential for an insurer to have an accumulation of losses to material lines of business outside of the property catastrophe line arising from the following that could threaten its solvency? (Yes or No)

If yes, what are the potential cause(s) of the accumulation of losses? (select all that apply)

- ☐ a severe event;
- ☐ series of many small events or individual claims;
- ☐ over concentration of exposure to one product;
- ☐ over concentration to one source of business;
- ☐ over concentration to one line of business;
- ☐ a common cause across many underwriting years (e.g. asbestos, pollution, silicon etc.); and
- ☐ others (list)

b) Does the insurer have absolute limitations set on individual policies or groups of policies to avoid threatening its solvency (such as limitations on a geographical basis, product basis, line of business basis, source of business basis, etc)? (Yes or No)

If yes, are the limitations assessed for reasonableness and effectiveness in reducing the threat to solvency?

c) Does the insurer purchase reinsurance to mitigate the risk of accumulated losses? (Yes or No)

d) Does the insurer have procedures in place to assess the adequacy of the reinsurance purchased both from a severity and frequency perspective for solvency purposes? (Yes or No)

e) Does the insurer have procedures in place to ensure that there are no significant mismatches between the policies issued by the insurer and the reinsurance programme (e.g. an insurer may have basis risk from catastrophe bonds or industry loss warranties etc)? (Yes or No)

f) Does the insurer have access to additional capital and surplus to cover loss and loss adjustment expenses (e.g. letters of credit, parental guarantees, other contingent capital sources, etc)? (Yes or No)

3. Related Business

a) What percentage of the gross premiums written covers a related policyholder ?

Optionally, insurers may provide additional comments to support its responses under questions 2 and 3 above.

4. Model(s)/tool(s) used to calculate the Projected Target Economic Capital

Governance	Response	Comments
Does the board of directors, chief and senior executives approve the design, maintenance and use of the model(s)/tool(s)?		
How often does the board or relevant board committees review outputs, changes and issues arising from the model(s)/tool(s) (review should be documented e.g. minutes, presentations etc)?		
Does the board and chief and senior executives have a thorough understanding of the key assumptions/elements and the implications of the outputs (including limitations) of the model(s)/tool(s)?		
Validation		
Is the model(s)/tool(s) subject to a regular cycle of validation, which includes the monitoring of performance, review appropriateness of model specifications and testing of forecast results against actual results?		
How often is the validation of the model(s)/tool(s) performed?		
Does the validation process demonstrate that the model(s)/tool(s) remains suitable during changing conditions (e.g. changes in inflation, interest rate, etc)? If no, provide comments.		
Documentation		
Does the insurer have formal documentation of the structure, design, operational details, input assumptions, parameters, governance process and controls of the model(s)/tool(s)?		
If yes, to what extent is the model(s)/tool(s) documented such that it can be used by new personnel with limited user experience? (include comments for partial or no documentations)		
How often does the Board of Directors or chief and senior executives review and approve the model/input documentation?		
Internal controls		

How does the insurer rate the effectiveness of the controls in place to monitor and evaluate the operation and maintenance of the model(s)/tool(s)?		
Are there strict protocols in place restricting access to the model(s)/tool(s) and ability to make adjustments thereto?		
Others		
What is the risk measure (Var, TVaR etc), confidence interval (95%, 99.95% etc) and time horizon (1 year, 3 years etc)?		

5. The Insurer's risk appetite (i.e. the amount of capital the insurer is willing to lose in any single event or a series of events over a defined period).

- a) How does the insurer define its risk appetite?
- b) How does the insurer measure its risk appetite?
- c) What are the limits imposed and how are the limits enforced?
- d) How often does the insurer monitor/review adherence to its risk appetite (e.g. adherence to limits set)?

6. Has the insurer applied reverse stress testing to both identify the scenarios that could cause business failure and the required actions to manage such situations? (Yes or No)

7. Is the CISSA process clearly documented and regularly amended for changes in strategic direction, risk management framework, and market developments? (Yes or No)

8. How often is the information underlying CISSA discussed and reviewed by the board and chief and senior executives?

9. Has the board and chief and senior executives ensured that an appropriate oversight process is in place, including an appropriate level of independent verification, whereby material deficiencies are reported on a timely basis and suitable actions taken? (Yes or No)

10. What are the key risks that the insurer faces over the course of the next 2 to 3 years, and the steps taken (if any) to manage/address these key risks? (list the risks and the steps taken).

11. Briefly describe the insurer's governance structure including the:

- a) The structure of the board of directors and executive management, including roles and work experience of officers.
- b) The terms of reference of the board of directors and its sub-committees.

12. Provide details of material intra-group exposures between the insurer and other members of the group to which it belongs.

- a) The details of the intra-group transactions would include (where applicable):
 - i Exposure value (face value or market value, if the latter is available);
 - ii. Counterparties involved including where they are located;
 - iii Summary details of the transaction including purpose, terms, transaction costs etc.;
 - iv Duration of the transaction; and
 - v Performance triggers.
- b) The details surrounding reinsurance and retrocessions arrangements would cover:
 - i Aggregated values of the exposure limits (gross and net) by counterparties, broken down by counterparty rating;
 - ii Aggregated premium flows between counterparties (gross and net); and
 - iii The proportion of the insurer's business exposure covered by internal reinsurance, retrocession and other risk transfer arrangements.

13. Briefly describe the risk management program including:

- i How the risk management program is used for strategic management decision making, capital allocation and capital adequacy;
- ii The governance surrounding the risk management process including the identification of the owners of the process and the extent of the board of directors involvement;and

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- iii A description of the process undertaken to monitor material risk concentration.

14. Provide a risk register analysis disclosing:

- i A description of the insurer's material risks;
- ii Owners of the respective risks;
- iii The impact and probability of the risk and the overall risk assessment;
- iv A summary of risk mitigation/controls in place and an assessment of their effectiveness in reducing the probability and/or impact of the risk; and
- v Overall assessment of the impact and probability of the residual risk.

Instructions affecting Table 8A

- o Where a question/section is not applicable to an insurer or the options provided do not fully reflect the insurer's position, a brief description shall be included in the comment fields.
- o independent verification shall be conducted by an internal or external auditor or any other appropriately skilled internal or external function, as long as they have not been responsible for the part of the CISSA process they review, and are therefore deemed to be independent in their assessment.
- o In relation to intra-group transactions, materiality will be defined as:
 - i. an intra-group transaction whose impact can cause a reduction in the insurer's available statutory capital and surplus by 5% or more;
 - ii. a series of linked intra-group transactions that can cumulatively reduce an insurer's available capital and surplus by 10% or more; and
 - iii. Qualitative risk characteristics of the transaction: for example, a transaction may be assessed as high risk; however, the quantitative impact remains unknown.

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Table 8B

CISSA Catastrophe Risk

- o Who is the risk owner (title)?
- o What are the qualifications of the risk owner?
- o What are the responsibilities of the risk owner? (summary).

PROJECTED TARGET ECONOMIC CAPITAL

1. What is the primary model(s)/tool(s) used to calculate the Projected Target Economic Capital for Catastrophe risk?
2. What are the primary sources of data inputs for the model(s)/tool(s) used for Catastrophe risk (e.g. insurer's historical data, brokers, etc)?
3. What are the key assumptions used (e.g. assumed correlation considerations and the diversification benefits, discount rate, etc) to determine the Catastrophe risk?
4. What are the main drivers for the insurer's Catastrophe risk? (select all that apply from list below)
 - o US earthquake;
 - o European windstorm;
 - o Japanese earthquake;
 - o Japanese typhoon;
 - o Terrorism; and
 - o Others (list).

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5. What are the main limitations of the model(s)/tool(s) used for Catastrophe risk and how are these limitations addressed?
 6. Provide details of stress and scenario testing performed for Catastrophe risk; include the key assumptions and the quantitative results of the tests.
 7. What risk mitigation/transfer techniques does the insurer have in place to address Catastrophe risk (e.g. reinsurance, catastrophe bonds)?

		Pre-diversification	Diversification benefit	Post-diversification
8.	Projected Target Economic Capital for Catastrophe risk			
9.	Projected Economic Capital at 99.0% TVaR for Catastrophe risk (over 1 year time horizon)			
10.	Projected Economic Capital at 99.95% TVaR for Catastrophe risk (over 1 year time horizon)			

11. Explain the primary reason(s) for any material deviations between the Projected Target Economic Capital at 99% TVaR calculated for Catastrophe risk and the same capital charge in the BSCR model (material being difference exceeding 10%).

Instructions affecting Table 8B

- o Where a question/section is not applicable to an insurer or the options provided do not fully reflect the insurer's position, a brief description shall be included in the comment fields.
- o Where an insurer does not allocate capital for Catastrophe risk, questions 8, 9 and 10 shall include nil amounts.

Table 8C

CISSA Reserve risk

- o Who is the risk owner (title)?
- o What are the qualifications of the risk owner?
- o What are the responsibilities of the risk owner? (summary).

PROJECTED TARGET ECONOMIC CAPITAL

1. What is the primary model(s)/tool(s) used to calculate the Projected Target Economic Capital for Reserve risk?
2. What are the primary sources of data inputs for the model(s)/tool(s) used for Reserve risk (e.g. insurer's historical data, industry data, Onesource, NCCI, ISO etc)?
3. What are the key assumptions used (e.g. assumed correlation considerations and the diversification benefits, etc) to determine the Reserve risk?
4. What are the main drivers for the insurer's Reserve risk? (select all that apply from list below)
 - o inflation;
 - o correlation of lines of business;
 - o legislative and regulatory changes;
 - o loss trend movements;
 - o timing and reporting changes at underlying ceding insurer; and
 - o Others (list).

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5. What are the main limitations of the model(s)/tool(s) used for Reserve risk and how are these limitations addressed?
 6. Provide details of stress and scenario testing performed for Reserve risk; include the key assumptions and the quantitative results of the tests.
 7. What risk mitigation/transfer techniques does the insurer have in place to address Reserve risk (e.g. adverse development covers)?

		Pre-diversification	Diversification benefit	Post-diversification
8	Projected Target Economic Capital for Reserve risk			
9	Projected Economic Capital at 99.0% TVaR for Reserve risk (over 1 year time horizon)			
10	Projected Economic Capital at 99.95% TVaR for Reserve risk (over 1 year time horizon)			

11. Explain the primary reason(s) for any material deviations between the Projected Target Economic Capital at 99% TVaR calculated for Reserve risk and the same capital charge in the BSCR model (material being difference exceeding 10%).

Instructions affecting Table 8C

- o Where a question/section is not applicable to an insurer or the options provided do not fully reflect the insurer's position, a brief description shall be included in the comment fields.
- o Where an insurer does not allocate capital for Reserve risk, questions 8, 9 and 10 shall include nil amounts.

Table 8D

CISSA Premium risk

- o Who is the risk owner (title)?
- o What are the qualifications of the risk owner?
- o What are the responsibilities of the risk owner? (summary)

PROJECTED TARGET ECONOMIC CAPITAL

1. What is the primary model(s)/tool(s) used to calculate the Projected Target Economic Capital for Premium risk?
2. What are the primary sources of data inputs for the model(s)/tool(s) used for Premium risk (e.g. insurer's historical data, peer data, industry data, etc)?
3. What are the key assumptions used (e.g. distributions, parameters of distribution, assumed correlation considerations and the diversification benefits, etc) to determine the Premium risk?
4. Which classes/lines of business have the most volatility?
5. What are the main limitations of the model(s)/tool(s) used for Premium risk and how are these limitations addressed?
6. Provide details of stress and scenario testing performed for Premium risk, include the key assumptions and the quantitative results of the tests.
7. What risk mitigation/transfer techniques does the insurer have in place to address Premium risk?

		Pre-diversification	Diversification benefit	Post-diversification
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8	Projected Target Economic Capital for Premium risk			
9	Projected Economic Capital at 99.0% TVaR for Premium risk (over 1 year time horizon)			
10	Projected Economic Capital at 99.95% TVaR for Premium risk (over 1 year time horizon)			

11. Explain the primary reason(s) for any material deviations between the Projected Target Economic Capital at 99% TVaR calculated for Premium risk and the same capital charge in the BSCR model (material being difference exceeding 10%).

Instructions affecting Table 8D

- o Where a question/section is not applicable to an insurer, a brief description shall be included in the comment fields.
- o Where an insurer does not allocate capital for Premium risk, questions 8, 9 and 10 shall include nil amounts.

Table 8E

CISSA Market risk

- o Who is the risk owner (title)?
- o What are the qualifications of the risk owner?
- o What are the responsibilities of the risk owner? (summary)

PROJECTED TARGET ECONOMIC CAPITAL

1. What is the primary model(s)/tool(s) used to calculate the Projected Target Economic Capital for Market risk?
2. What are the primary sources of data inputs for the model(s)/tool(s) used for Market risk (e.g. market prices from Bloomberg, asset ratings, interest rates etc)?
3. What are the key assumptions used (e.g inflation rate, duration, assumed correlation considerations and the diversification benefits, etc) to determine the Market risk?
4. What are the main drivers for the insurer's Market risk?
5. What are the main limitations of the model(s)/tool(s) used for Market risk and how are these limitations addressed?
6. Provide details of stress and scenario testing performed for Market risk, include the key assumptions and the quantitative results of the tests.
7. What risk mitigation/transfer techniques does the insurer have in place to address Market risk (e.g. the hedging strategies applied)?

		Pre-diversification	Diversification benefit	Post-diversification
8	Projected Target Economic Capital for Market risk			
9	Projected Economic Capital at 99.0% TVaR for Market risk (over 1 year time horizon)			
10	Projected Economic Capital at 99.95% TVaR for Market risk (over 1 year time horizon)			

11. Explain the primary reason(s) for any material deviations between the Projected Target Economic Capital at 99% TVaR calculated for Market risk and the same capital charge in the BSCR model (material being difference exceeding 10%).

Instructions affecting Table 8E

- o Where a question/section is not applicable to an insurer, a brief description shall be included in the comment fields.
- o Where an insurer does not allocate capital for Market risk, questions 8, 9 and 10 shall include nil amounts.
- o Market risk from the BSCR model consists of Equity Investment risk, Fixed Income Investment risk and Interest Rate/Liquidity risk capital charges.

Table 8F

CISSA Credit risk

- o Who is the risk owner (title)?
- o What are the qualifications of the risk owner?
- o What are the responsibilities of the risk owner? (summary)

PROJECTED TARGET ECONOMIC CAPITAL

1. What is the primary model(s)/tool(s) used to calculate the Projected Target Economic Capital for Credit risk?
2. What are the primary sources of data inputs for the model(s)/tool(s) used for Credit risk (e.g. rating agency, historical data, etc)?
3. What are the key assumptions used (e.g probabilities of default used, assumed correlation considerations and the diversification benefits, etc) to determine the Credit risk?
4. What are the main drivers for the insurer's Credit risk?
5. What are the main limitations of the model(s)/tool(s) used for Credit risk and how are these limitations addressed?
6. Provide details of stress and scenario testing performed for Credit risk, include the key assumptions and the quantitative results of the tests.
7. What risk mitigation/transfer techniques does the insurer have in place to address Credit risk ?

		Pre-diversification	Diversification	Post-
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			benefit	diversification
8.	Projected Target Economic Capital for Credit risk			
9.	Projected Economic Capital at 99.0% TVaR for Credit risk (over 1 year time horizon)			
10.	Projected Economic Capital at 99.95% TVaR for Credit risk (over 1 year time horizon)			

11. Explain the primary reason(s) for any material deviations between the Projected Target Economic Capital at 99% TVaR calculated for Credit risk and the same capital charge in the BSCR model (material being difference exceeding 10%).

Instructions affecting Table 8F

- o Where a question/section is not applicable to an insurer, a brief description shall be included in the comment fields.
- o Where an insurer does not allocate capital for Credit risk, questions 8, 9 and 10 shall include nil amounts.

Table 8G

CISSA Liquidity risk

- o Who is the risk owner (title)?
- o What are the qualifications of the risk owner?
- o What are the responsibilities of the risk owner? (summary)

PROJECTED TARGET ECONOMIC CAPITAL

1. What are the main drivers for the insurer's Liquidity risk?
2. Provide details of stress and scenario testing performed for Liquidity risk, include the key assumptions and the quantitative results of the tests.
3. What risk mitigation/transfer techniques does the insurer have in place to address Liquidity risk?

		Pre-diversification	Diversification benefit	Post-diversification
4	Projected Target Economic Capital for Liquidity risk			
5	Projected Economic Capital at 99.0% TVaR for Liquidity risk (over 1 year time horizon)			
6	Projected Economic Capital at 99.95% TVaR for Liquidity risk (over 1 year time horizon)			

Instructions affecting Table 8G

- o Where a question/section is not applicable to an insurer, a brief description shall be included in the comment fields.
- o Where an insurer does not allocate capital for Liquidity risk, questions 4, 5 and 6 shall include nil amounts.

Table 8H

CISSA Operational risk

- o Who is the risk owner (title)?
- o What are the qualifications of the risk owner?
- o What are the responsibilities of the risk owner? (summary)

PROJECTED TARGET ECONOMIC CAPITAL

1. What are the main drivers for the insurer's Operational risk?
2. Provide details of stress and scenario testing performed for Operational risk, include the key assumptions and the quantitative results of the tests.
3. What risk mitigation/transfer techniques does the insurer have in place to address Operational risk?

		Pre-diversification	Diversification benefit	Post-diversification
4	Projected Target Economic Capital for Operational risk			
5	Projected Economic Capital at 99.0% TVaR for Operational risk (over 1 year time horizon)			
6	Projected Economic Capital at 99.95% TVaR for Operational risk (over 1 year time horizon)			

Instructions affecting Table 8H

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- o Where a question/section is not applicable to an insurer, a brief description shall be included in the comment fields.
 - o Where an insurer does not allocate capital for Operational risk, questions 4, 5 and 6 shall include nil amounts.

Table 8I

CISSA Group, Reputational and Strategic risk

- o Who is the risk owner (title)?
- o What are the qualifications of the risk owner?
- o What are the responsibilities of the risk owner? (summary)

PROJECTED TARGET ECONOMIC CAPITAL

1. What are the main drivers for the insurer's Group, Reputational and Strategic risk?
2. Provide details of stress and scenario testing performed for Group, Reputational and Strategic risk, include the key assumptions and the quantitative results of the tests.
3. What risk mitigation/transfer techniques does the insurer have in place to address Group, Reputational and Strategic risk ?

		Pre-diversification	Diversification benefit	Post-diversification
4	Projected Target Economic Capital for Group risk			
5	Projected Economic Capital at 99.0% TVaR for Group risk (over I year time horizon)			
6	Projected Economic Capital at 99.95% TVaR for Group risk (over I year time horizon)			

Instructions affecting Table 8I

- o Where a question/section is not applicable to an insurer, a brief description shall be included in the comment fields.
- o Where an insurer does not allocate capital for Group, Reputational and Strategic risk, questions 4, 5 and 6 shall include nil amounts.

Schedule VIII

CATASTROPHE RISK RETURN

The schedule of catastrophe risk return shall provide particulars of the following matters:

(a) Exceedance probability ("EP") curves represent an insurer's exposure to loss from all insurance and reinsurance operations including the impact of any insurance linked securities for the following region perils:

- o Total all perils combined (Table 9): shall consist of the aggregate of Table 9A and Table 9B below;
- o Atlantic basin hurricane (Table 9C);
- o North American earthquake (Table 9D);
- o European windstorm (Table 9E);
- o Japanese earthquake (Table 9F);
- o Japanese typhoon (Table 9G); and
- o All other perils (Table 9H).

(b) EP curve for each of the following major business segments for all perils combined:

- o Insurance segment (Table 9A); and
- o Reinsurance segment (Table 9B).

EP curve for insurance and reinsurance segment will not be required, where the insurance or reinsurance premiums as a percentage of total catastrophe net premiums is less than 10%.

- (c) Accumulations overview (Table 9I) shall provide details of the features of accumulation methodologies, the catastrophe models used and the frequency of conducting accumulations.
- (d) Data analysis (Table 9J) shall consist of information on modeled versus non modeled catastrophe risk, the quality and comprehensiveness of data and how data is considered in accumulations and pricing.
- (e) Reinsurance disclosures (Table 9K) seek to obtain information on the type of protection (reinsurance or retro) purchased against natural catastrophe losses.

-
- (f) Catastrophe loss event analysis shall assess the veracity of catastrophe modeling by assessing the relationship between estimated losses and actual losses of the event.
- (g) Stress tests on terrorism risk are designed to assess the insurer's exposure to a terrorism event either through insurance and/or reinsurance arrangements. The stress tests include:
- o Insurance and reinsurance terrorism exposure - 150m defined geographical radius (Table 9L). Provides information (based on a stress of 150m radius) on top ten largest accumulations of exposures from terrorism, assuming total loss on the insurance and reinsurance cover.
 - o Terrorism loss scenario (Table 9M). Provides information (based on a stress of 2 tonne bomb) on the top ten largest accumulations of loss arising from terrorism.
 - o Reinsurance terrorism limits (Table 9N). Insurers shall disclose the top ten reinsurance limits with terrorism exposure.
- h) Assumed exchange rates (Table 9O): Contains information on all exchange rates used in compiling the information contained in the Catastrophe risk return.

INSTRUCTIONS AFFECTING SCHEDULE VIII

Table 9

Exceedance Probability (“EP”) Curve Total information

Exceedance probability information

	Gross loss		Pre-tax net loss	
Loss return period (years)	Gross per occurrence loss	Gross TVaR	Net per occurrence loss	Net TVaR
	(\$M)	(\$M)	(\$M)	(\$M)
50				
100				
250				
500				
1000				

	Gross loss (\$M)		Net loss (\$M)
Annual average aggregate gross loss		Annual average aggregate net loss (net of reinstatements terms)	
Standard deviation of annual aggregate gross loss		Standard deviation of annual aggregate net loss (net of reinstatements terms)	
Total gross statutory property catastrophe premium modeled		Total net statutory property catastrophe premium modeled (net of upfront reinsurance premiums paid)	
Total gross all other premium modeled		Total net all other premium modeled (net of proportional reinsurance only)	
Total gross statutory property catastrophe limits exposed –		Total net statutory property catastrophe limits exposed – modeled (net of proportional	

modeled		reinsurance only)	
Total gross statutory property catastrophe limits exposed - not modeled		Total net statutory property catastrophe limits exposed- not modeled (net of proportional reinsurance only)	
Total gross all other lines limits exposed - modeled		Total net all other lines limits exposed - modeled (net of proportional reinsurance only)	
Total gross all other lines limits exposed - not modeled		Total net all other lines limits exposed - not modeled (net of proportional reinsurance only)	

Significant sources of catastrophe risk and associated loss:

	Select (Yes or No)	If no, briefly explain
Allocated loss adjustment expense		
Property - buildings		
Property - contents		
Additional living expenses		
Business interruption		
Auto physical damage		
Worker's compensation		
Personal accident		
Life insurance		
Onshore energy		
Offshore energy		
Ocean marine		
Inland marine		
Flood		
Crop		
Other primary insurance		

Assumed reinsurance information

	Select (Yes or No)	If no, briefly explain
Proportional - quota share		
Proportional - surplus share		
Non-proportional - catastrophe		
Non-proportional - per risk		
Other reinsurance assumed		

Pools and assessments information

	Select (Yes or No)	If no, briefly explain
Voluntary pools and/or assessments		
Involuntary pools and/or assessments		

Supplemental perils and model options

	Select (Yes or No)	If no, briefly explain
Fire following		
Sprinkler leakage		
Storm surge		
Demand surge		
Secondary uncertainty		
Atlantic multi-decadal oscillation selection		

Other adjustments information

	Select (Yes or No)	If no, briefly explain
Adjustments for exposure data quality		
Adjustments for insurance to value		

Adjustments for exposure growth		
Supplemental losses for non-modeled line of business		
Adjustments for model deficiencies – severity		
Adjustments for model deficiencies - frequency		
Additional demand surge loadings		
Other factors for prudence		
Average loading factor applied to ground up loss for all adjustments applied:		
Is this average loading factor determined analytically or estimated?		
Which vendor catastrophe models (“cat model”) do you include in this modeling:		
Which version of the model or version of the region-peril models are used for each vendor cat model as appropriate:		

Instructions affecting Table 9

- o The responses for the “Exceedance probability information” section shall consist of amounts in \$millions.
- o The responses/inputs to Table 9, will automatically populate the following sections in Tables 9A through 9H.
 - Significant sources of catastrophe risk and associated loss;
 - Assumed reinsurance information;
 - Pools and assessments information;
 - Supplemental perils and model options; and

-
- Other adjustments information.
- o Where the responses to the above sections for Tables 9A through 9H differ from those in Table 9, the insurer must modify the response(s) of the respective Table.
 - o Except for one question in the section “Other adjustments information”, where the response shall include amounts, responses to the other sections shall include selecting the appropriate response that best reflects their position. Where the response is “no” the insurer shall provide a brief description.

Table 9A

EP Curve Insurance**Exceedance probability information**

	Gross loss		Pre-tax net loss	
Loss return period (years)	Gross per occurrence loss	Gross TVaR	Net per occurrence loss	Net TVaR
	(\$M)	(\$M)	(\$M)	(\$M)
50				
100				
250				
500				
1000				

	Gross loss (\$M)		Net loss (\$M)
Annual average aggregate gross loss		Annual average aggregate net loss (net of reinstatements terms)	
Standard deviation of annual aggregate gross loss		Standard deviation of annual aggregate net loss (net of reinstatements terms)	
Total gross statutory property catastrophe premium modeled		Total net statutory property catastrophe premium modeled (net of upfront reinsurance premiums paid)	
Total gross all other premium modeled		Total net all other premium modeled (net of proportional reinsurance only)	
Total gross statutory property catastrophe limits exposed – modeled		Total net statutory property catastrophe limits exposed – modeled (net of proportional reinsurance only)	
Total gross statutory		Total net statutory property	

property catastrophe limits exposed - not modeled		catastrophe limits exposed- not modeled (net of proportional reinsurance only)	
Total gross all other lines limits exposed - modeled		Total net all other lines limits exposed - modeled (net of proportional reinsurance only)	
Total gross all other lines limits exposed - not modeled		Total net all other lines limits exposed - not modeled (net of proportional reinsurance only)	

o **Significant sources of catastrophe risk and associated loss;**

o **Assumed reinsurance information;**

o **Pools and assessments information;**

o **Supplemental perils and model options; and**

o **Other adjustments information.**

Instructions affecting Table 9A

- o The responses to the sections “Significant sources of catastrophe risk and associated loss” through “Other adjustments information” will automatically be populated with the responses from Table 9. Where the responses for total insurance differ from those in Table 9, the insurer shall modify the response, by input of an amount or selecting the appropriate response. Where the response selected is “no” the insurer shall provide a brief description.

Table 9B

EP Curve Reinsurance**Exceedance probability information**

	Gross loss		Pre-tax net loss	
Loss return period (years)	Gross per occurrence loss	Gross TVaR	Net per occurrence loss	Net TVaR
	(\$M)	(\$M)	(\$M)	(\$M)
50				
100				
250				
500				
1000				

	Gross loss (\$M)		Net loss (\$M)
Annual average aggregate gross loss		Annual average aggregate net loss (net of reinstatements terms)	
Standard deviation of annual aggregate gross loss		Standard deviation of annual aggregate net loss (net of reinstatements terms)	
Total gross statutory property catastrophe premium modeled		Total net statutory property catastrophe premium modeled (net of upfront reinsurance premiums paid)	
Total gross all other premium modeled		Total net all other premium modeled (net of proportional reinsurance only)	
Total gross statutory property catastrophe limits exposed – modeled		Total net statutory property catastrophe limits exposed – modeled (net of proportional reinsurance only)	
Total gross statutory property		Total net statutory property	

catastrophe limits exposed - not modeled		catastrophe limits exposed- not modeled (net of proportional reinsurance only)	
Total gross all other lines limits exposed - modeled		Total net all other lines limits exposed - modeled (net of proportional reinsurance only)	
Total gross all other lines limits exposed - not modeled		Total net all other lines limits exposed - not modeled (net of proportional reinsurance only)	

- o **Significant sources of catastrophe risk and associated loss;**
- o **Assumed reinsurance information;**
- o **Pools and assessments information;**
- o **Supplemental perils and model options; and**
- o **Other adjustments information.**

Instructions affecting Table 9B

- o The responses to the sections “Significant sources of catastrophe risk and associated loss” through “Other adjustments information” will automatically be populated with the responses from Table 9. Where the responses for total reinsurance differ from those in Table 9, the insurer shall modify the response.

Table 9C through 9H

The insurer shall complete the table below for each of the following perils:

- o Atlantic basin hurricane (Table 9C)
- o North American earthquake (Table 9D)
- o European windstorm (Table 9E)
- o Japanese earthquake (Table 9F)
- o Japanese typhoon (Table 9G)
- o All other perils (Table 9H)

Which statutory zones (schedule V paragraph (o) and statutory lines of business (Schedule IV) is the insurer exposed to with regards to the perils relating to Table 9C through Table 9H?

Exceedance probability information

	Gross loss		Pre-tax net loss	
Loss return period (years)	Gross per occurrence loss	Gross TVaR	Net per occurrence loss	Net TVaR
	(\$M)	(\$M)	(\$M)	(\$M)
50				
100				
250				
500				
1000				

	Gross loss (\$M)		Net loss (\$M)
Annual average aggregate gross loss		Annual average aggregate net loss (net of reinstatements terms)	
Standard deviation of annual aggregate gross loss		Standard deviation of annual aggregate net loss (net of reinstatements terms)	
Total gross statutory property catastrophe premium modeled		Total net statutory property catastrophe premium modeled (net of upfront reinsurance premiums paid)	
Total gross all other premium modeled		Total net all other premium modeled (net of proportional reinsurance only)	
Total gross statutory property catastrophe limits exposed - modeled		Total net statutory property catastrophe limits exposed - modeled (net of proportional reinsurance only)	
Total gross statutory property catastrophe limits exposed - not modeled		Total net statutory property catastrophe limits exposed- not modeled (net of proportional reinsurance only)	
Total gross all other lines limits exposed - modeled		Total net all other lines limits exposed - modeled (net of proportional reinsurance only)	
Total gross all other lines limits exposed - not modeled		Total net all other lines limits exposed - not modeled (net of proportional reinsurance only)	

o **Significant sources of catastrophe risk and associated loss;**

o **Assumed reinsurance information;**

- o **Pools and assessments information;**
- o **Supplemental perils and model options; and**
- o **Other adjustments information.**

Instructions affecting Tables 9C through 9H

List of perils and respective statutory exposures are as follows:

Table	Peril	Statutory zones as described in Schedule V paragraph (o)
9C	Atlantic basin hurricane	Zones 1, 2, 7, 11, 12 and 13
9D	North American earthquake	Zones 1,3,4,5,7,11,12 and 13
9E	European windstorm	Zones 8 and 12
9F	Japanese earthquake	Zones 10 and 12
9G	Japanese typhoon	Zones 10 and 12
9H	All other perils	Zones 1,2,3,4,5,6,7,8,9,10,11,12,13 and 14

- o For each of the exposures listed above, the insurer shall include the amount of the total losses for each event taking into account the correlation of losses.
- o The responses to the sections “Significant sources of catastrophe risk and associated loss” through “Other adjustments information” will automatically be populated with the responses from Table 9. Where the responses for Tables 9C through H differ from those in Table 9, the insurer shall modify the response, by input of an amount or selecting the appropriate response. Where the response selected is “no” the insurer shall provide a brief description.

-
- o All Other Perils shall consist of the residual natural catastrophe exposure retained by the company for all other region-perils except Atlantic basin hurricane, North American earthquake, European windstorm, Japanese earthquake, Japanese typhoon.

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Table 9I

Accumulations Overview

What frequency best describes the update process of accumulations?
Are there are differences in the frequency of accumulations for various business units? Briefly describe.
Which vendor catastrophe models does the insurer license?
Does the insurer incorporate internally developed stochastic catastrophe models within the accumulations that capture correlation across contracts or lines of business?
Which methodology best describes your accumulation methodology?
Where more than one cat model is used in the accumulations, which methodology best describes how multiple models considered? If other please explain
Are your pricing and accumulations fully consistent?
How much business (other than insurance business), measured as a percentage of premium is written without occurrence limits?
Does the insurer provide reinsurance to both affiliated companies and unaffiliated companies
If there is more than 2.49% of premium written without occurrence limits (other than insurance business) briefly describe this business, including information on territorial exposure, potential for correlation of losses across contracts/policies and the assessment of maximum loss potential for these exposures.
How are outwards reinsurance protections considered in accumulation calculations?

Instructions affecting Table 9I

- o For the item “Are insurer’s pricing and accumulations fully consistent” requires insurers to provide a response on whether the annual expected loss implied in the accumulations is equal to the annual expected at the time of underwriting.

DRAFT

Table 9J

Data Analysis

For all contracts written by the insurer please provide splits of those that are:

	US specific contracts - all exposures		All other contracts – all exposures		Total	
	Contract count	Limit provided (\$M)	Contract count	Limit provided (\$M)	Contract count	Limit provided (\$M)
Modeled						
Not modeled						
Total						

For those contracts that are written by the insurer that are modelable please provide splits of those that are:

	US specific contracts - all exposures		All other contracts – all exposures		Total	
	Contract count	Limit provided (\$M)	Contract count	Limit provided (\$M)	Contract count	Limit provided (\$M)
Modeled						
Not modeled						
Total						

Table 9J, cont'd

For those contracts that are written by the insurer that are modeled please provide splits of those that are:

	US specific contracts - all exposures		All other contracts – all exposures		Total	
	Contract count	Limit provided (\$M)	Contract count	Limit provided (\$M)	Contract count	Limit provided (\$M)
Detailed exposure data						
Aggregate exposure data						
A proxy peer insurer is selected and losses are derived from this insurer						
Derived from an industry loss curve utilizing market share						
Other						
Total						

For contracts that are written by the insurer that may be modeled but are not please describe what the insurer does from an accumulation perspective.

Table 9J, cont'd

insurerinsurer For contracts that are written by the insurer that may be modeled but are not please describe what the insurer does from an accumulation perspective:

	US specific contracts - all exposures		All other contracts – all exposures		Total	
	Contract count	Limit provided (\$M)	Contract count	Limit provided (\$M)	Contract count	Limit provided (\$M)
Data deficient						
Model deficient						
Other						
Total						

If other is selected please describe the reasons for not modeling the contract(s).

For contracts that are written by the insurer that may be modeled but are not please describe what the insurer does from an accumulation perspective:insurerinsurer

Table 9J, cont'd

For contracts that are written by the insurer that may be modeled but are not please describe what the insurer does from an accumulation perspective:

	US specific contracts - all exposures		All other contracts – all exposures		Total	
	Contract count	Limit provided (\$M)	Contract count	Limit provided (\$M)	Contract count	Limit provided (\$M)
Data deficient						
No catastrophe model exists						
Model deficient						
Other						
Total						

If other is selected please describe the reasons for not modeling the contract(s):

What percentage of total net premiums written represents contracts with no limits.

For contracts that are written by the insurer that may be modeled but are not please describe what the insurer does from an accumulation perspective:insurerinsurer

If there are contracts that are written by the insurer that have no occurrence limits or where TIV has not been included as the exposure in the above exhibits please describe how this exposure is included in the above data:

Instructions affecting Table 9J

- o In this Table, where applicable, the responses shall include: inputting the amount/number and or providing a brief description in the comment fields.

Table 9K

Reinsurance disclosures

This table needs to be properly formatted as there are lines missing below between items.

Reinsurance or Retro information:

	US specific contracts		Worldwide contracts		All other contracts	
	Premium	Occurrence Limit provided	Premium	Occurrence Limit provided	Premium	Occurrence Limit provided
	(\$M)	(\$M)	(\$M)	(\$M)	(\$M)s	(\$M)
ILS protection						
ILW contracts						
Other contracts						
Property catastrophe contracts						
Catastrophe swaps						
Property per risk contracts						
Property retro contracts						
Quota share contracts						
Surplus share contracts						
Total						

If there are reinsurance or retro contracts that are purchased by the insurer that have no occurrence limits, provide details below:

Instructions affecting Table 9K

In this Table, where applicable, the responses shall include: inputting the amount/number and or providing a brief description in the comment fields.

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Table 9L

Insurance Terrorism Exposure - 150m Defined Geographical Radius

	Latitude of accumulation centroid	Longitude of accumulation centroid	Zipcode/ Postcode	State/ Province	Country	Total gross exposure (\$M)	TRIP or other terror pool recoverables if any (\$M)	Reinsurance recoveries if any (\$M)	Total net exposure (\$M)	Target location?
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										

Table 9L, cont'd

Reinsurance Terrorism Exposure - 150m Defined Geographical Radius

	Latitude of accumulation centroid	Longitude of accumulation centroid	Zipcode/ Postcode	State/ Province	Country	Total gross exposure (\$M)	TRIP or other terror pool recoverables if any (\$M)	Reinsurance recoveries if any (\$M)	Total net exposure (\$M)	Target location?
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										

Instructions affecting Table 9L

The “total net exposure” and total net loss estimate is derived by subtracting the TRIP or other terror pool recoverables if any and reinsurance recoveries from the total gross exposure and total loss estimate , respectively.

Table 9M

Terrorism Loss Scenario - 2 Tonne Bomb

	Latitude of accumulation centroid	Longitude of accumulation centroid	Zipcode/ Postcode	State/ Province	Country	Total gross loss estimate (\$M)	TRIP or other terror pool recoverables if any (\$M)	Reinsurance recoveries if any (\$M)	Total net loss estimate (\$M)	Target location?
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										

Instructions affecting Table 9M

- o The total net exposure and total net loss estimate is derived by subtracting the TRIP or other terror pool recoverables if any and reinsurance recoveries from the total gross exposure and total loss estimate” respectively.

Table 9N

Reinsurance Terrorism Limits

		U.S. State/Country	Total gross reinsurance limits exposed to terrorism (\$M)	TRIP or other terror pool recoverables if any (\$M)	Reinsurance or retro recoveries if any (\$M)	Total net reinsurance limits exposed to terrorism (\$M)
Conventional terrorism exposure	1					
	2					
	3					
	4					
	5					
	6					
	7					
	8					
	9					
	10					

Table 9 N, Cont'd

		U.S. State/Country	Total gross reinsurance limits exposed to terrorism (\$M)	TRIP or other terror pool recoverables if any (\$M)	Reinsurance or retro recoveries if any (\$M)	Total net reinsurance limits exposed to terrorism (\$M)
NBCR terrorism exposure	1					
	2					
	3					
	4					
	5					
	6					
	7					
	8					
	9					
	10					

Instructions affecting Table 9N

- o The total gross exposure is derived by the sum of all reinsurance limits exposed to terrorism.
- o Total net reinsurance limits exposed to terrorism is derived by subtracting the TRIP or other terror pool recoverables if any and reinsurance recoveries from the total gross reinsurance limits exposed to terrorism.

Table 90

Assumed Exchange Rates

		Total – all perils combined EP curve	Total insura nce EP curve	Total reinsura nce EP curve	Atlantic basin hurricane EP curve	North America n earthqu ake EP curve	European windstor m EP curve	Japanese earthquak e EP curve	Japanes e typhoon EP curve	All other perils EP curve
Currency	\$	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	\$.EUR									
	\$.GBP									
	\$.Yen									
	\$.CHF									
	\$.Other									
	\$.Other									
	\$.Other									
	\$.Other									
	\$.Other									
	\$.Other									
	\$.Other									

Instructions affecting Table 90

- o In this Table the insurer shall input the amounts in the respective currency; the amounts are then converted to US dollars and totaled in the column return period information - total – all perils combined.

Made this day of , 2010

Bermuda Monetary Authority