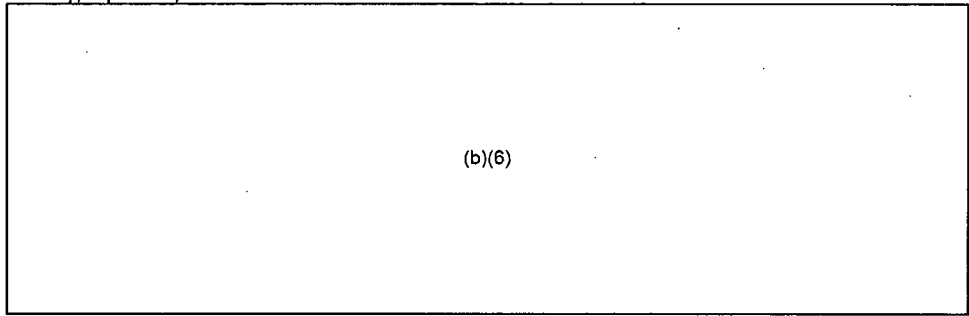


Group DK

(Records Withheld
In Part)

From: RST01 Hoc
Sent: Friday, April 29, 2011 8:30 PM
To:



Cc: PMT_japan Resource
Subject: April 29 roadmap analysis Rev7.docx
Attachments: April 29 roadmap analysis Rev7.docx

All,

Attached is the final Consortium approved Roadmap analysis.

Chuck Norton
RST BWR Analyst

April 28, 2011

The United States Consortium of Industrial and Governmental Organizations* analysis of the adequacy of the Tokyo Electric Power Company (TEPCO) Roadmap for the purpose of achieving near term plant stability goals established by the Consortium

Introduction: The United States Consortium of Industrial and Governmental Organizations associated with nuclear energy suggests near and long term goals for the stabilization of the damaged Fukushima Daiichi nuclear units. This document is not an official position of the U.S. Nuclear Regulatory Commission or associated industrial or governmental entities. It is meant as technical insights to the Government of Japan on the TEPCO Roadmap. It is understood that the responsibility and decision-making regarding meeting these goals is the responsibility of TEPCO and the Japanese regulatory body.

Purpose: As requested, the purpose of this analysis is to evaluate if the TEPCO Roadmap will accomplish the near term actions necessary to minimize radiological releases and reestablish safety functions. The consortium considers these functions to be reasonable to support long-term efforts that will be needed to achieve a safe end state.

Note: The TEPCO Roadmap is included as an attachment to this document.

Background:

The consortium has established five essential functions necessary for achieving the near term (TEPCO's Step 2 (6 to 9 months)) goal of establishing plant conditions that provide reasonable confidence that unanticipated conditions will not require increased Protective Action measures. These five essential functions are as follows:

1. Remove decay and chemical heat from reactors, containment, and spent fuel pools.
2. Maintain reactors and spent fuel pools subcritical and adequately shielded.
3. Ensure structural integrity for all units (e.g. containment and spent fuel pools).
4. Provide reliable indication of essential parameters.

5. Terminate (or render insignificant) uncontrolled radioactive releases.

Factors used to evaluate the status of the essential functions are as follows:

1. Remove decay and chemical heat.
 - a. Establish reactor pressure vessel (RPV) water level, reliably maintained, above top of the active fuel (TAF). If unable to maintain RPV water level, establish and maintain containment water levels covering the RPV lower head. Reduce RPV temperatures to less than 100 degrees Celsius.
 - b. Provide functional and reliable backups, including power sources, for each of the systems being used; ensure backups can be employed in time to maintain adequate cooling.
 - c. Establish a functional and clean water source of sufficient capacity to ensure adequate on-site cooling water.
 - d. Establish the ability to reliably add makeup water to each spent fuel pool and maintain spent fuel pool temperatures less than 100 degrees Celsius.
2. Maintain reactors and spent fuel pools sub-critical and adequately shielded.
 - e. Establish reliable means, either chemical or geometric, to maintain each reactor and each spent fuel pool sub-critical.
 - f. Establish adequate shielding or zone of protection around reactors and spent fuel pools to allow for the safe execution of Roadmap countermeasures.
3. Ensure structural integrity for all units (e.g. containment and spent fuel pools).
 - g. Preclude detonation in primary containment atmosphere by establishing a non-combustible atmosphere in the primary containment.
 - h. Establish reasonable assurance of Reactor Pressure Vessel, Primary Containment, and Spent Fuel Pool integrity .
4. Reliable Indication of essential parameters.

- i. Establish reliable means to determine key parameters associated with actual or potential large releases.
 - i. Instrumentation to confirm reactors and spent fuel pools are sub-critical,
 - ii. Area Radiation, gaseous and liquid release detectors,
 - iii. Reactor Pressure Vessel/Drywell/Suppression Pool (RPV/DW/SP) level, RPV/DW/SP pressure indications, RPV/DW/SP temperatures
 - iv. Spent fuel pool level, temperature indications

5. Terminate (or render insignificant) uncontrolled radioactive releases
 - j. Establish the means for containment of significant external leakage (e.g. primary containment leakage) for portions of the plant (spent fuel pools or reactor units) with credible potential for energetic releases of significant quantities of radioactive material.
 - k. With regard to activities in close proximity to the site, consider measures to minimize further spread of contamination (e.g., covers or resin spray over significant sources of loose contamination at the plant).

Summary of US Technical Suggestions:

The following are suggestions to enhance TEPCO's ability to achieve its stated Roadmap targets. They are suggestions that, if enacted, could better align the Roadmap to the Consortium's "stability" recommendations.

The Roadmap contains the essential countermeasures for core and spent fuel cooling. Completion of these elements as quickly as possible will reduce the risk of further damages. Obstacles to flooding of the containments, e.g., radwaste processing should be given priority so that containment flooding can begin as quickly as possible.

The equipment used to add water to the spent fuel pools (i.e., giraffes) are a single point of failure that could result in a loss of cooling function to the 1F1 and 1F4 spent fuel pools. The Consortium encourages TEPCO to provide independent, redundant backup means of cooling

the spent fuel pools 1F1 and 1F4 that can be employed in time to provide adequate cooling should the primary means fail.

Based on photographs of 1F1 it is not clear to the Consortium that water is actually reaching the pool. The Consortium encourages TEPCO to pursue additional investigations to validate that the spent fuel in spent fuel pool 1F1 is being cooled.

The consortium recommends that TEPCO consider adding a redundant means of adding water as a backup to the normal fuel pool cooling systems for the 1F2 spent fuel pool. Restoration of the cooling function of fuel pool cooling system would also increase reliability.

The Consortium recommends redundant delivery systems with multiple points of injection to each of the seven fuel locations requiring emergency cooling to improve the reliability of the cooling function. In addition, installing pipes that are seismically supported, in place of fire hoses that are currently being used to carry cooling water may improve system reliability in case of aftershocks.

The Consortium acknowledges the need to circulate water back to the RPVs to improve the waste-water generation situation. Coupling this action with redundant delivery systems to the fuel locations requiring emergency cooling would be highly beneficial.

The TEPCO Roadmap is silent on maintaining the fuel sub-critical. Fuel movement and structural degradation have the potential to increase reactivity. Actions to further prevent or detect inadvertent criticality, such as adding borated water to spent fuel pools, would improve confidence that inadvertent criticality will not inhibit recovery actions.

The fuel configuration in 1F1, 1F2, and 1F3 spent fuel pools has not been verified. Verification of actual conditions in the spent fuel pools would help inform the proposed countermeasures contained in the Roadmap.

The Consortium encourages continued prevention of a hydrogen explosion by implementing nitrogen injection into the Primary Containment Vessels (PCV) for 1F2 and 1F3.

TEPCO Roadmap structural concerns related to spent fuel pools are primarily focused on the 1F4 spent fuel pool. However, the structural integrity of reactor building 3 also appears to be degraded from the explosions. Although 1F4 spent fuel pool may have more significant consequences because the full core was offloaded from 1F4 reactor core, the consortium also encourages TEPCO to assess the structural integrity of the 1F3 spent fuel pool, and confirm the structural integrity of spent fuel pools 1F1 and 1F2.

Instrumentation is showing signs of degradation and will continue to degrade with time. Investigation and development of alternate instrumentation systems will be necessary to ensure critical parameters will continue to be monitored, and that the data will be accurate. Also, recovery of installed instrumentation, where possible, will be helpful.

Consideration should be given to the issues of biological growth within the reactor vessels, primary containments, and the spent fuel pools. It is likely that sea water used for emergency cooling included some life forms capable of enduring temperatures and radiation doses currently present much as was the case at Three Mile Island (TMI). It is likely that seawater also provides nutrients for such life forms. Growth of the life forms could at a minimum reduce visibility in the waters again as was the case at TMI. In a worst case, growth of life forms could affect coolability of the fuel either by reducing flows or reducing heat transfer coefficients from surfaces.

Analysis:

The analysis that follows assesses the adequacy of the TEPCO Roadmap countermeasures and risk considerations. It addresses the factors necessary to satisfy the five Consortium identified essential functions necessary to provide reasonable confidence that unanticipated conditions will not require increased protective action measures.

Understandably, the TEPCO Roadmap presents a high-level strategy with timeframe goals and is not a project plan and schedule. It addresses key objectives such as shifting to recirculation and heat exchanger based cooling, flooding the primary containment vessels to improve core cooling, stopping the containment water leakage that is preventing containment flood up, and radioactive waste water reprocessing. The Roadmap lays out a path that accomplishes the stated objectives. However, the practicability of achieving the step 1 and step 2 objectives in

the indicated timeframes cannot be reliably assessed considering the tremendous challenges involved in achieving some of the pivotal goals. For example, flooding the 1F2 core depends on having an intact RPV or stopping the suspected leak in the suppression pool. Considering the lack of access to the damaged area it is impossible to accurately assess the feasibility and timeframe for such a repair. For such items, further details developed by TEPCO will enable a more meaningful assessment of the planned actions. Thus, we suggest that the countermeasures be prioritized, further defined, and scheduled so a clearer view of site activities can be gained. Those priorities will guide specific action plans and specific actions as TEPCO progresses through recovery.

Note: For clarity US Consortium items will be non-italicized; *TEPCO countermeasures and risks will be italicized*

Note: Because it may not be possible to accomplish some proposed actions in the near future, individual assessments of each reactor unit and spent fuel pool may be necessary to demonstrate that the five essential functions are accomplished without necessarily complying with each individual factor.

Factors used to evaluate Essential Function 1 (Remove decay and chemical heat)

- a. **Factor: Establish reactor pressure vessel (RPV) water level, reliably maintained, above top of the active fuel (TAF). If unable to maintain RPV water level, establish and maintain containment water levels covering the RPV lower head. Reduce RPV temperatures to less than 100 degrees Celsius.**

(Unit F1 and Unit F3)

Countermeasure [9]: Flood the primary containment vessel (PCV) up to the top of active fuel (TAF).

Countermeasure [10]: Reduce the amount of radioactive materials (utilization of standby gas treatment system (filter), etc.) when PCV venting (release of steam containing radioactive materials into the atmosphere).

Countermeasure [11]: Continue preventing hydrogen explosion by injecting nitrogen into the PCV.

Risk [4]: Increase in water leakage into the turbine building in the process of flooding the PCV.

Countermeasure [12]: Consideration and implementation of measures to hold down water inflow (e.g., circulating the water back into the RPV by storing and processing the accumulated water in the turbine building.).

Countermeasure [13] Consideration of recovering heat exchange function for the reactor (installing heat exchangers)

Risk [5]: Possibility of prolonged work in high dose level area (keep countermeasures [9] and [12])

(Unit 2)

Countermeasure [14]: Continue cooling by current minimum injection rate.

Countermeasure [16]: Continue consideration and implementation of sealing measure to damaged location. Implement cooling measures similar to those for Units F1 and F3 once the damaged location is sealed.

Risk [2]: Possibility of prolonged work sealing the damaged location (continue countermeasures [12] and [14])

Factor a. analysis:

Countermeasure [9] will satisfy Factor a. Obstacles to flooding of the containments, e.g., radwaste processing should be given priority so that flooding can begin as quickly as possible.

- b. Factor: Provide functional and reliable backups, including power sources, for each of the systems being used; ensure backups can be employed in time to maintain adequate cooling.**

Counter measure [8]: Install interconnecting lines of offsite power soon

Countermeasure [22] Continue water injection by "Giraffe", etc (reliability improvement (enhanced durability of hoses)/switch to remote-controlled operation)

Factor b. analysis:

Countermeasures [8] and [22] address redundancy. The Consortium encourages TEPCO to provide backup means of cooling, including backup power sources, that can be employed in time to provide adequate cooling should the primary means fail. TEPCO may consider using probabilistic risk assessment to determine countermeasures that provide the greatest risk reduction.

- c. Factor: Establish a functional and clean water source of sufficient capacity to ensure adequate on-site cooling water.**

Countermeasure [12] Consideration and implementation of measures to hold down water inflow (e.g. circulating water back into the RPV by storing and processing the water in the turbine building)

Countermeasure [23]: Add cooling function to normal fuel pool cooling system and continue injecting water for unit F2.

Countermeasure [24]: Examination for and implementation of restoration of normal cooling system for units F1, F3, and F4.

Factor c. Analysis:

Stabilization countermeasures are appropriate for this Factor. However TEPCO should also assess the reliability of the ultimate fresh water source including the delivery system

(water piped from nearby reservoir and the onsite delivery system to the reactors and spent fuel pools). The consortium recommends that TEPCO consider adding a backup means of adding water to the normal fuel pool cooling systems for the 1F2 spent fuel pool. Restoration of the cooling function of fuel pool cooling system would also increase reliability.

The Consortium recommends redundant delivery systems to each of the seven fuel locations requiring emergency cooling.

The Consortium acknowledges the need to circulate water back to the RPVs to improve the waste-water generation situation. When recirculation methods are put into place, there will be increased risk of debris in re-circulated water interfering with cooling. TEPCO should address this concern in design of the recirculation systems. A once-through water addition method should still be maintained as a backup.

TEPCO should also address the possibility of biological fouling of reactors, spent fuel pools, containments, water recirculation systems, and water delivery systems.

d. Factor: Establish the ability to reliably add makeup water to each spent fuel pool and maintain spent fuel pool temperatures less than 100 degrees Celsius

Countermeasure [22]: Continue water injection by "Giraffe", etc (reliability improvement (enhanced durability of hoses)/switch to remote-controlled operation.)

Factor d. analysis:

It is not clear how TEPCO is reliably adding water to the 1F1 spent fuel pool and the basis for concluding that adequate cooling is occurring. It is our understanding that reported temperatures are based on thermography from above, which indicates only the surface temperature of the first obstacle encountered. This would not seem to be a reliable indicator of actual spent fuel pool temperature. Also, the basis for determining how much water is actually being added to the 1F spent fuel pool is unclear, considering the almost complete obstruction by the collapsed roof shown in photographs.

TEPCO might consider countermeasures to establish reliable temperature indication for the spent fuel pools.

Factors used to evaluate Essential Function 2 (Maintain reactors and spent fuel pools sub-critical and adequately shielded)

- e. Factor: Establish reliable means, either chemical or geometric, to maintain each reactor and spent fuel pool sub-critical.**

Factor e. analysis:

This factor is not satisfied.

The TEPCO Roadmap is silent on maintaining the fuel sub-critical. Fuel movement or structural degradation may potentially increase reactivity. Actions to further prevent or detect inadvertent criticality would improve confidence that inadvertent criticality will not inhibit recovery actions.

TEPCO may consider establishing countermeasures that will assure the fuel in 1F1, 1F2, and 1F3 reactors is subcritical.

The fuel configuration in 1F1, 1F2, and 1F3 spent fuel pools has not been verified.

One cooling water sample on the 1F4 spent fuel pool indicated that criticality had not occurred in the pool. Additional samples would enhance the validity of this single sample. Visual observations indicate that the fuel is intact in the racks.

- f. Factor: Establish adequate shielding or zone of protection around reactors and spent fuel pools to allow for safe execution of the Roadmap countermeasures.**

Factor f. analysis:

This factor is not satisfied. The Roadmap considers dose rates at or beyond the site boundary. There is little consideration in the Roadmap for providing shielding to the workers on site.

Factors used to evaluate Essential Function 3 (Ensure structural integrity for all units (e.g. containment and spent fuel pools))

- g. Factor: Preclude detonation in primary containment atmosphere by establishing a non-combustible atmosphere in the primary containment**

Countermeasure [15]: Continue prevention of hydrogen explosion by nitrogen injection into the PCV.

Factor g. analysis

This factor is satisfied for 1F1 and should be continued.

This factor is not satisfied for 1F2 and 1F3. Given that TEPCO has reported that normal injection paths may be unavailable, it becomes necessary to evaluate alternate methods for injecting nitrogen into 1F2 and 1F3 PCVs. When evaluating paths for injecting nitrogen into 1F2 and 1F3 PCVs, the consortium recommends against considering the RPV water addition flow path for nitrogen injection, as a nitrogen blanket in the RPV would reduce steam cooling of the core material.

If nitrogen injection and containment atmospheric sampling are not feasible, verify analytically the steam inerting and/or leakage is sufficient to not have an explosive mixture.

- h. Factor: Establish reasonable assurance of Reactor Pressure Vessel, Primary Containment, and Spent Fuel Pool integrity**

Countermeasure [20]: tolerance evaluation is especially needed for F4. A certain level of seismic tolerance has been confirmed.

Factor h. analysis

TEPCO Roadmap structural concerns related to spent fuel pools are primarily focused on the 1F4 spent fuel pool. However, the structural integrity of reactor building 3 also appears to be degraded from the explosions. Although spent fuel pool 1F4 may have more significant consequences because the full core was offloaded from 1F4, the consortium also encourages TEPCO to assess the structural integrity of the 1F3 spent fuel pool, and confirm the structural integrity of spent fuel pools 1F1 and 1F2.

TEPCO is encouraged to consider adding a corrosion control countermeasures to preserve the integrity of the RPV primary containment, and spent fuel pools. Vessel materials have been exposed to water chemistry that can accelerate stress corrosion cracking (SCC) and general corrosion in the RPV. This is a particular concern for materials and welds in the RPV which are known to be susceptible to failure by SCC. While guillotine fractures due to SCC are not expected if stress levels are low, a circumferential SCC crack could increase susceptibility to failure in a transient or seismic event. The Consortium is not aware of any attempts to characterize or control the chemistry of water injected into the RPV to mitigate corrosion. Actions to characterize the corrosion environment and countermeasures to reduce risk of corrosion failures (e.g., pH adjustment or addition of specific corrosion inhibitors) should be considered.

Factor used to evaluate Essential Function 4 (Reliable Indication of essential parameters)

- i. Factor: Establish reliable means to determine key parameters associated with actual or potential large releases**
 - i. Instrumentation to confirm reactors and spent fuel pools are sub-critical,**
 - ii. Area Radiation, gaseous and liquid release detectors,**
 - iii. RPV/DW/SP level, RPV/DW pressure indications, RPV/DW/SP temperatures**
 - iv. Spent fuel pool level, temperature indications**

Countermeasure [57]: Monitoring seawater, soil and atmosphere within the site boundary (25 locations)

Countermeasure [58]: Monitoring the radiation dose at site boundary (12 locations)

Countermeasure [59]: Consideration of monitoring methods in evacuation order / planned evacuation / emergency evacuation preparation areas.

Countermeasure [60] Consideration and implementation of monitoring methods in evacuation order / planned evacuation / emergency evacuation preparation areas (in cooperation with national/prefectural/municipal governments)

Countermeasure [61]: announce accurately monitoring results of long half life residue radioactive materials such as cesium 137

Countermeasure [62]: Monitoring of homecoming residences (in cooperation with national/prefectural/municipal governments)

Countermeasure [63]: Examination and implementation of necessary measures to reduce radiation dose (decontamination of homecoming residences and soil surface) (in cooperation with national/prefectural/municipal governments)

Factor i. analysis

This factor is not satisfied. The Roadmap places an emphasis on radiation readings off site but little emphasis on determining essential parameters to monitor the state of the reactors and spent fuel pools.

TEPCO should evaluate what instrumentation indications are essential to successfully completing stabilizing actions (e.g., SFP level and temperature, RPV/PCV water level, temperature, pressure) and determine what backups or contingency plans are necessary should these indications fail. The Roadmap countermeasures focus on radiation measurement, but do not address instrumentation necessary to take proper plant stabilization actions. Also, the recovery of inoperable installed instrumentation should be sought.

Factors used to evaluate Essential Function 5 (Terminate (or render insignificant) uncontrolled radioactive releases)

- j. Establish the means for containment of significant external leakage (e.g. primary containment leakage) for portions of the plant (SFPs or reactor units) with credible potential for energetic releases of significant quantities of radioactive material.**

Countermeasure [29]: identify leakage path and examine and implement preventative measures

Countermeasure [30]: Transferring accumulated water to facilities that can store it (condenser and Centralized Waste Treatment Facility)

Countermeasure [31]: preparing decontamination and desalt of transferred accumulated water

Countermeasure [32]: preparing to install tanks

Countermeasure [33]: Preparing to store with tanks and barges

Countermeasure [34]: Preparing for decontamination and desalt of contaminated water

Countermeasure [35]: Preparing to install reservoir

Countermeasure [36]: Preparing to decontaminate sub-drainage water after being pumped up.

Countermeasure [37]: Utilization of “Centralized Waste Treatment “, to store water

Countermeasure [38]: Install water processing facilities; decontaminate and desalt highly contaminated water and store in tanks.

Risk [7]: Possibility of delay in installing water processing facilities or poor operating performance of the facilities.

Countermeasure [39]: Examination and implementation of backup measures (installment of additional tanks or pools or leakage prevention by coagulator, etc)

Countermeasure [40]: Increase storage capacity by adding tanks , barges, Megafloat, etc.

Countermeasure [41]: Decontaminating contaminated water using decontaminates to below acceptable criteria

Countermeasure [42]: Expansion of additional tanks to store high radiation level contaminated water

Countermeasure [43]: Continuation and reinforcement of decontamination and desalt of high radiation level water

Countermeasure [44]: Continuation and reinforcement of decontamination and desalt of low radiation level water.

Countermeasure [45]: Reuse of processed water as reactor coolant.

Countermeasure [46]: Decontamination to the level below criteria level.

Factor j. analysis:

When put in place these water management countermeasures should satisfy this factor.

- k. Factor: With regard to activities in close proximity to the site, consider measures to minimize further spread of contamination (e.g., covers or resin spray over significant sources of loose contamination at the plant)**

Countermeasure [47]: Inhibit scattering of radioactive materials by full-scale dispersion inhibitor after confirming its performance by test.

Countermeasure [48]: Prevent rainwater contamination by dispersion inhibitor

Countermeasure [49]: Removal of debris

Countermeasure [50]: Examination and implementation of basic design for reactor building cover full fledged measure (container with concrete roof and wall, etc.)

Countermeasure [51]: Consideration of solidification, substitution and cleansing of contaminated soil (mid-term issues)

Countermeasure [52]: Improvement of work condition by expanding application and dispersion of inhibitors to the ground and buildings.

Countermeasure [53]: Continue removal of debris.

Countermeasure [54]: Begin installing reactor building cover (with ventilation and filter)

Risk [8]: Considerable reduction in radiation dose is a prerequisite to launch construction.

Countermeasure [55]: Complete installing reactor building covers (Units 1, 3, and 4)

Countermeasure [56]: Begin detailed design of full-fledged measure (container with concrete roof and wall, etc.)

Factor k. analysis:

When completed these countermeasures could be effective in satisfying the factor.

Organizational Risks and Considerations:

Understandably TEPCO did not include organizational risks and considerations in their Roadmap. The Roadmap is primarily a technical document. Nevertheless, the NRC has included suggestions regarding organizational issues that, if considered, may enable more efficient and effective implementation of the Roadmap. These organizational suggestions may also improve the safety of the facility.

Organizational issues associated with the Roadmap are directly related to safety. Those organizational issues are: 1) ensuring a safety culture is maintained throughout the stabilization and recovery at the site and 2) providing independent oversight.

As the site transitions from crisis conditions to stable conditions, it will require a focus on maintaining a safety culture at the site, especially with the influx of a large non-nuclear trained workforce. Minimizing human error is essential for both public safety and the safety of workers at the site. Human conditions for workers are highly important to ensure safe work practices. Human error can be further minimized by the development and use of procedures, by training workers, and practicing work activities on mock ups before the activities are actually carried out in the plants.

As Fukushima Daiichi transitions from crisis conditions to stable conditions, providing strong independent oversight is essential. Activities that could affect criticality, emergency response, core conditions, heat removal, radiation exposure, structural stability and other safety elements must be rigorously reviewed through independent oversight that includes written safety evaluations. A special licensing and safety review process will likely be needed. This process may include separation of regulatory activities for Fukushima Daiichi in order to avoid any adverse impacts on operating Japanese reactors. Keeping accurate records of activities will be necessary to help with the ultimate decommissioning of the site. In the long term developing and approving a Safety Analysis Report and technical specifications would be beneficial.

TEPCO will need to ensure organizational reliability within their own organization so that there remains a safety focus on Fukushima Daiichi while continuing safe operations of the other Japanese nuclear sites.

* The United States Consortium of Industrial and Governmental Organizations was established to provide advice and assistance to the people of Japan in an effort to stabilize and improve conditions at the Fukushima Daiichi Reactor Site following the earthquake and tsunami on March 11, 2011. The Consortium includes:

General Electric Hitachi
Institute of Nuclear Power Operations

~~Official Use Only~~ Sensitive Internal Information

Naval Reactors

US Department of Energy/Nuclear Energy

United States Nuclear Regulatory Commission

To view the TEPCO Roadmap follow the link below:

<http://www.tepco.co.jp/en/press/corp-com/release/11041707-e.html>

From: RST01 Hoc
Sent: Friday, April 29, 2011 3:21 PM
To:

(b)(6)

Subject: FW: Instrumentation answers with attachments
Attachments: Fukushima - major plant parameters.doc; Supplemental explanation of major parameters of the plant.pdf

One action from today's 11:00 call is to forward the attached for your use.

From: Bush, Devin G LTJG RIA-Midwest MPLS, N47922 [mailto: (b)(6)]
Sent: Thursday, April 28, 2011 12:59 PM
To: RST01 Hoc
Subject: Instrumentation answers with attachments

Mr. Brown

During the 1100 conference call you spoke of someone from PACOM requesting more information about how TEPCO is able to take their instrument readings. I found a TEPCO press release (109th release) dated April 23rd; it may contain some of the information being requested. You may pass this on to the requester.

Yesterday, the NR representative was inquiring about a spread sheet containing the instrumentation data. I have attached a Word Document which can be used to help find over 50 instrumentation readings from critical plant parameters on a Japanese website. Sometimes this information is posted within a few hours of the measurements being taken.

Thank you.

V/R,
LT Bush
NMCI: (b)(6)

This signature line and my digital signature is the equivalent of a hard copy signature, serving to authenticate that I have the authority to send this e-mail and to indicate I have consciously decided that it should have the same legal authority normally accorded to an actual hard copy signature.

~~For Official Use Only - Privacy Sensitive~~

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Fukushima Dai-ichi Nuclear power Station Major Parameters of the Plant.

There are over 50 plant parameters which are posted on the NISA website through "Press Releases". This normally happens twice a day at around 0800 and 1500 (Tokyo time). Most of the time the press releases come out within a few hours of the data being recorded.

The English side of NISA is not updated regularly. These directions will assist you to view the current data in Japanese.

Link for NISA <http://www.nisa.meti.go.jp/english/> click on Japanese link.

The screenshot shows the top navigation bar of the NISA website. The logo 'NISA Nuclear and Industrial Safety Agency' is on the left, with 'METI' on the right. A search box is located to the right of the logo. Below the logo is a horizontal menu with items: 'TOP', 'About NISA', 'Regulation', 'International cooperation', and 'Resources'. An arrow points from the 'International cooperation' link to a 'Japanese' link in the top right corner. Below the navigation bar is a large black box with white text that reads 'Countermeasures for the Great East Japan Earthquake'.

[Responding to a Nuclear Emergency](#)

[FAQs for People Living Outside the Evacuation and In-house Evacuation Areas](#)

[Information about the radiation : Monitoring Post out of 20 Km Zone of Fukushima Dai-ichi NPP](#)

[Countermeasures for the Great East Japan Earthquake from Prime Minister and His Cabinet](#)

[Tohoku Pacific Earthquake and the seismic damage to the NPPs](#)

[Side event on the Fukushima Daiichi Accident and Initial Safety Measures Worldwide in IAEA](#)

Apr.13.2011 [Information of the Situation Caused by the Earthquake of Hamadori in Fukushima Prefecture : As of 13:37 April 13th, 2011](#)

Apr.12.2011 [Information of the Situation Caused by the Earthquake of Hamadori : 12th April in Fukushima Prefecture : As of 13:37 April 12th, 2011](#)

Apr.12.2011 [INES \(the International Nuclear and Radiological Event Scale\) Rating on the Events in Fukushima Daiichi Nuclear Power Station by the Tohoku District of the Pacific Ocean Earthquake](#)

By clicking on the following button, you will receive all of the archived Press Releases.

① 緊急情報

現在、保安院からの緊急情報があります

- [【緊急時】東日本大震災による原子力発電所に関する緊急情報](#)
- [東日本大震災による原子力発電所への影響](#)
- [福島第一原子力発電所](#)
- [福島第二原子力発電所](#)

東日本大震災の影響について

関連情報はこちらをクリックしてください。

避難地域等への広報の強化
現地対策本部
ニュースレター等



- 申告について
- パノミックコメント
- 広聴・広報
- 調査情報
- 資格・試験
- 毎月情報
- 用語集
- リンク集

原子力発電所の安全審査状況

- お知らせ

2011年4月11日

[福島第一原子力発電所3号機原子炉冷却系に異常が生じたことに関する原子力規制委員会の臨時会合開催](#)

- お知らせ

2011年4月11日

[福島第一原子力発電所3号機原子炉冷却系に異常が生じたことに関する原子力規制委員会の臨時会合開催](#)

- 2011年4月11日

[福島第一原子力発電所3号機原子炉冷却系に異常が生じたことに関する原子力規制委員会の臨時会合開催](#)

- 2011年4月8日

[福島第一原子力発電所3号機原子炉冷却系に異常が生じたことに関する原子力規制委員会の臨時会合開催](#)

- 2011年4月8日

[福島第一原子力発電所3号機原子炉冷却系に異常が生じたことに関する原子力規制委員会の臨時会合開催](#)

一覧ページ

At the time this was created, the most recent post was numbered 91 (as of 4/13/2011 1500 Tokyo time) you can also see the date and time in the hyperlink. Look for a larger number (117 as of 4/27) and a current time/date and click on the link.

①緊急情報
 現在、保安院からの
 緊急情報があります

【緊急】 原子力安全
 に関する緊急による
 原子力発電所の稼働
 について(4/13/2011)
 について(4/13/2011)

原子力安全のお知らせ

2011年4月13日 更新

原子力安全のお知らせ

新着情報

- 中台について
- パブリックコメント
- 広聴・広報
- 調達情報
- 資格・試験
- 採用情報
- 用語集
- リンク集

新着情報 2010年 2009年 2008年 2007年 2006年 2005年 2004年 2003年 2002年 2001年 2000年

2011年4月13日 [原子力発電所の稼働について\(4/13/2011\)](#) 2011年4月13日 15時00分現在、及び過去3日間、
[稼働状況](#)

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[稼働状況](#)

中越沖地震における
 柏崎刈羽原子力発電所に
 関する調査・検討状況の
 住民説明会

原子力発電所の
 安全審査状況

The .pdf is normally around 400KB ± 50KB. Look for a file around that size, the first few symbols repeat day after day also.



経済産業省

Ministry of Economy, Trade and Industry

三三六

[トップページ](#) | [経済産業省について](#) | [政策別を探す](#) | [組織別を探す](#) | [窓口一覧](#) | [ご意見・お問合せ](#)

[トップページ](#) > [報道発表](#) > [過去の報道発表](#) > [地震被害情報（第91報）（4月13日15時00分現在）及び現地モニタリング情報](#)

地震被害情報（第91報）（4月13日15時00分現在）及び現地モニタリング情報

本件の概要

原子力安全・保安院が現時点で把握している東京電力(株)福島第一原子力発電所、福島第二原子力発電所、東北電力(株)原子力発電所、日本原子力(株)関西第二、電気、ガス、熱供給、コンビナート被害の状況をお知らせします。

担当

原子力安全・保安院 原子力安全広報課

公表日

平成23年4月13日(水)

発表資料名

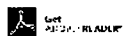
[地震被害情報（第91報）（4月13日15時00分現在）\(PDF形式：491KB\)](#)

[現地モニタリング情報\(PDF形式：3,142KB\)](#)

[プラント関連パラメータ\(PDF形式：379KB\)](#)

関連リンク

●●●関連情報はこちから「福島原子力発電所等への影響について」●●●



Acrobat Readerをダウンロード(Adobeサイトへ)

Find this table and you will be able to read the current data. Use the table converted into English to understand the numbers you are seeing.

※1: 計器不目
※2: データ採取が停止
※3: 状況説明を参照してください

福島第一原子力発電所 プラント関連パラメータ
4月13日 13:00現在

号機	1u	2u	3u	4u	5u	6u
注水状況	燃料管冷却水供給停止中。 流量 6m³/h (4/13 17:30) 経過計測	燃料管冷却水供給停止中。 流量 7m³/h (4/13 19:00) 経過計測	燃料管冷却水供給停止中。 流量 7m³/h (4/13 17:32) 経過計測	停止中	停止中	停止中
原子炉水位	燃料管A: -1600mm 燃料管B: -1650mm (4/13 12:00 現在)	燃料管A: -1500mm (4/13 12:00 現在)	燃料管A: -1750mm 燃料管B: -2200mm (4/13 12:10 現在)	※2	燃料管A: 1650mm (4/13 13:00 現在)	燃料管A: 2350mm (4/13 13:00 現在)
原子炉圧力	0.420MPa g (A) 0.825MPa g (B) ※3 (4/13 12:00 現在)	-0.016MPa g (A) ※3 -0.023MPa g (D) ※3 (4/13 12:00 現在)	-0.023MPa g (A) ※3 -0.081MPa g (C) ※3 (4/13 12:10 現在)	※2	0.003MPa g (4/13 13:00 現在)	0.016MPa g (4/13 13:00 現在)
原子炉水温度	(系統毎監視できない状態にあり)					
原子炉圧力容器の温度	R/C1 温度: 204.5°C ※3 圧力容器下層温度: 118.5°C (4/13 12:00 現在)	R/C1 温度: 186.0°C 圧力容器下層温度: 69.1°C ※3 (4/13 12:00 現在)	R/C1 温度: 82.2°C ※3 圧力容器下層温度: 117.3°C (4/13 12:10 現在)	4u 原子炉内に加熱棒 (燃料) がなし。 5.6u 原子炉内に加熱棒 (燃料) がなし。		
D/W - S/C 圧力	D/W: 0.160MPa abs S/C: 0.165MPa abs (4/13 12:00 現在)	D/W: 0.095MPa abs S/C: #1 (4/13 12:00 現在)	D/W: 0.105MPa abs S/C: 0.107MPa abs (4/13 12:10 現在)	※2		
CAMS	D/W: #1 S/C: 1.03×10⁵ Sv/h (4/13 12:00 現在)	D/W: 2.79×10⁵ Sv/h S/C: 853×10⁵ Sv/h (4/13 12:00 現在)	D/W: 1.69×10⁵ Sv/h S/C: 653×10⁵ Sv/h (4/13 12:10 現在)	※2		
D/W 設計操作圧力	0.384MPa g(0.485MPa abs)	0.384MPa g(0.485MPa abs)	0.384MPa g(0.485MPa abs)	※2		
D/W 最大操作圧力	0.427MPa g(0.528MPa abs)	0.427MPa g(0.528MPa abs)	0.427MPa g(0.528MPa abs)	※2		
燃料管冷却プール温度	※1	45.0°C (4/13 12:00 現在)	※1	※1	35.1°C (4/13 13:00 現在)	23.0°C (4/13 13:00 現在)
FPC スクランナーレベル	4500mm (4/13 12:00 現在)	5350mm (4/13 12:00 現在)	※1	4850mm (4/13 12:10 現在)	※2	
電源	外部電源供給中 (P/C2C)		外部電源供給中 (P/C4D)			外部電源供給中
その他情報				加熱プール: 29°C 現在 (4/13 8:00)	5u: 計器不目 - P (4/13 8:57~)	6u: S/C モード (4/13 10:16~)

圧力換算 g(=MPa g) → abs(=MPa abs) - 大気圧(標準大気圧 0.1013 MPa)
abs(=MPa abs) → g(=MPa g) + 大気圧(標準大気圧 0.1013 MPa)

You can find an English table the same way, just stay on the original English homepage to find the links.

Fukushima Dai-ichi Nuclear Power Station Major Parameters of the Plant (As of 14:00 April 9th)

Unit No.	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Situation of water injection	Injecting fresh water via the Water Supply Line. Flow rate of injected water: 6 m³/h (As of 17:30 April 3rd) temporary measuring instrument	Injecting fresh water via the Fire Extinguish Line. Flow rate of injected water: 7 m³/h (As of 19:00, April 7th) temporary measuring instrument	Injecting fresh water via the Fire Extinguish Line. Flow rate of injected water: 7 m³/h (As of 17:32, April 3rd) temporary measuring instrument	Under shutdown	Under shutdown	Under shutdown
Reactor water level	Fuel range A: -1.650mm Fuel range B: -1.650mm (As of 12:00, April 9th)	Fuel range A: -1.500mm (As of 12:00, April 9th)	Fuel range A: -1.700mm Fuel range B: -2.250mm (As of 12:25, April 9th)	※2	Shutdown range measurement: 2.25mm (As of 14:00, April 9th)	Shutdown range measurement: 1.648mm (As of 14:00, April 9th)
Reactor pressure	0.410MPa g (A) 0.825MPa g (B) (As of 12:00, April 9th)	-0.020MPa g (A) -0.023MPa g (D) (As of 12:00, April 9th)	-0.004MPa g (A) -0.081MPa g (C) (As of 12:25, April 9th)	※2	0.007MPa g (As of 14:00, April 9th)	0.008MPa g (As of 9:00, April 9th)
Reactor water temperature	(Impossible collection due to low system flow rate)			※2	43.8°C (As of 14:00, April 9th)	30.5°C (As of 14:00, April 9th)
Reactor Pressure Vessel (RPV) temperature	Feedwater nozzle temperature: 235.2°C #3 Temperature at the bottom head of RPV: 120.1°C (As of 12:00, April 9th)	Feedwater nozzle temperature: 144.5°C Temperature at the bottom head of RPV: #1 (As of 12:00, April 9th)	Feedwater nozzle temperature: 96.6°C #3 Temperature at the bottom head of RPV: 109.2°C (As of 12:25, April 9th)	Unit 4 Unit 5,6 Monitoring by the reactor water temperature	No heating element (fuel) inside the reactor	
D/W*1 Pressure, S/C*2 Pressure	D/W: 0.160MPa abs S/C: 0.166MPa abs (As of 12:00, April 9th)	D/W: 0.095MPa abs S/C: Down scale #3 (As of 12:00, April 9th)	D/W: 0.105MPa abs S/C: 0.107MPa abs (As of 12:25, April 9th)	※2		
CAMS*3	D/W: #1 S/C: 1.19×10⁵ Sv/h (As of 12:00, April 9th)	D/W: 2.92×10⁵ Sv/h S/C: 7.43×10⁵ Sv/h (As of 12:00, April 9th)	D/W: 1.84×10⁵ Sv/h S/C: 7.12×10⁵ Sv/h (As of 12:25, April 9th)	※2		
D/W*1 design operating pressure D/W*1 maximum operating pressure	0.384MPa g(0.485MPa abs) 0.427MPa g(0.528MPa abs)	0.384MPa g(0.485MPa abs) 0.427MPa g(0.528MPa abs)	0.384MPa g(0.485MPa abs) 0.427MPa g(0.528MPa abs)	※2		
Spent Fuel Pool water	#1	45.0°C (As of 12:00, April 9th)	#1	#1	34.7°C (As of 14:00, April 9th)	23.0°C (As of 14:00, April 9th)
FPC skimmer level	4500mm (As of 12:00, April 9th)	5350mm (As of 12:00, April 9th)	#1	4850mm (As of 12:25, April 9th)	※2	
Power supply	Receiving external power supply (P/C*1,2C)		Receiving external power supply (P/C4D)			Receiving external power supply

Fukushima Dai-ichi Nuclear Power Station ——— Supplemental explanation of Major Parameters of the Plant (Data such as water level, pressure, temperature, etc.)
 Supplemental explanation of each Parameter

Item	Description Method	Measuring Instrument	Number of Entry /Channel or System
Situation of water injection to reactor	Describing flow rate of injected water / changed time (Only updated when flow rate of water injection is changed)	Temporary measuring instrument	1/1 System
Reactor water level	Describing data measured by the water level indicator monitoring fuel range	Installed indicator	Fuel range A 1/ 1Channel Fuel range B 1/ 1Channel
Reactor pressure	Reading the voltage to be transmitted from the instrument panel, and describing the pressure value converted from the voltage. There are several data points for each range A and B, however only one is described as a representative.	After reading the voltage indicated in the instrument panel, and converted to pressure.	Fuel range A 1/ 2Channels Fuel range B 1/ 2Channels
Reactor water temperature	It would not collected data due to no system flow near the installed thermometer.	—	—
Temperature related to Reactor Pressure Vessel (RPV)	Though temperatures related to RPV are collected from multiple points, temperatures at the “Feedwater Nozzle” and at the “Bottom Head of RPV” are described as representatives from the viewpoint of understanding the whole.	Installed recorder	At the Feedwater Nozzle 1/4 Channel At the Bottom Head of RPV 1/2Channels (Unit 1) 1/1Channel(Unit 2, Unit 3)
D/W & S/C Pressure	Describing the installed instrument readings. If no date can be collected from it, the pressure converted from the voltage to be transmitted from the instrument panel is described. (D/W: Dry Well, S/C: Suppression Chamber)	Installed gauge : Unit 1, Unit 2 Installed instrument panel(Reading Voltage) : Unit 3	Installed gauge : 1/1System Installed recorder Regular 1/1Channel Wide range 1/1Channel
D/W atmosphere temperature	Though D/W atmosphere temperatures are collected from multiple points, temperatures at “Upper D/W (RPV bellows seal temperature) and Center of D/W (Return air temperature from HVH)” are described as representatives from the viewpoint of understanding the whole. (HVH: Heating and Ventilating Handling Unit)	Installed recorder	Upper D/W (RPV bellows seal) 1/5Channels Center of D/W (Return air temp. form HVH) 1/5Channels
CAMS Radiation monitors	Describing reading of the installed indicator (CAMS: Containment Atmosphere Monitoring System)	Installed indicator	D/W Range A 1/1Channel Range B 1/1Channel S/C Range A 1/1Channel Range B 1/1Channel
S/C temperature	Describing reading of the installed indicator There are several data points for each range A and B, however only one is described as a representative.	Installed indicator	Range A 1/4Channels(Unit 1) 1/8Channels(Unit 2, Unit 3) Range B 1/4Channels(Unit 1) 1/8Channels(Unit 2, Unit 3)
Spent Fuel Pool water temperature	Describing reading of the installed indicator (Supplemental Fuel Pool Cooling Mode; Cooling system mode for heat load except for reactor at the shutdown , SHC(Shut down Cooling) Mode; Cooling system mode for reactor at the shutdown)	Installed indicator	1/2Channels (Unit 1) 1/1Channel (Units 2 to 4)
FPC Skimmer Surge Tank level	Describing reading of the installed indicator (FPC: Fuel Pool Cooling and Clean up System)	Installed indicator	1/1System

Supplemental explanation of explanatory note

Item	Description Contents	Situation as of 22:00 April 22nd
Measuring instrument malfunction	Measuring instrument malfunction: Down(Over)scale /Indicator malfunction	Unit1 Spent Fuel Pool water temperature and CAMS D/W radiation monitors Unit2 Temperature at the Bottom Head of RPV, S/C Pressure and RPV bellows seal temperature Unit3 Spent Fuel Pool water temperature and FPC Skimmer Surge Tank level Unit4 Spent Fuel Pool water temperature
Out of covering rang for data collection	Unit4: The data related to RPV and D/W are not collected as no fuel is in RPV. Units5 and 6: The data related to D/W are not collected as units 5 and 6 are in cold shutdown condition.	—
Under monitoring of the change of the situation	The reading is shown, however, it shows the change that is clearly different from other parameters including the fluctuation, negative indication and so on.	Unit1 Reactor pressure, Feedwater Nozzle temperature and CAMS S/C radiation monitors Unit2 Reactor pressure and CAMS S/C radiation monitors Unit3 Reactor pressure, RPV bellows seal temperature, Feedwater Nozzle temperature and CAMS S/C radiation monitors

From: RST01 Hoc
Sent: Friday, April 29, 2011 10:44 AM
To:

(b)(6)

Cc: RST01 Hoc; RST02 Hoc
Subject: Agenda for Today's Technical Consortium Call
Attachments: April 29 1100 Agenda.docx

Good Morning,

Please see attached agenda for today's 1100 (EDT) call.

Thanks

**Agenda
11:00 am Consortium Call
4/29/2011**

1. Plant status update [significant changes since last call]

a.

(b)(5)

2.

3.

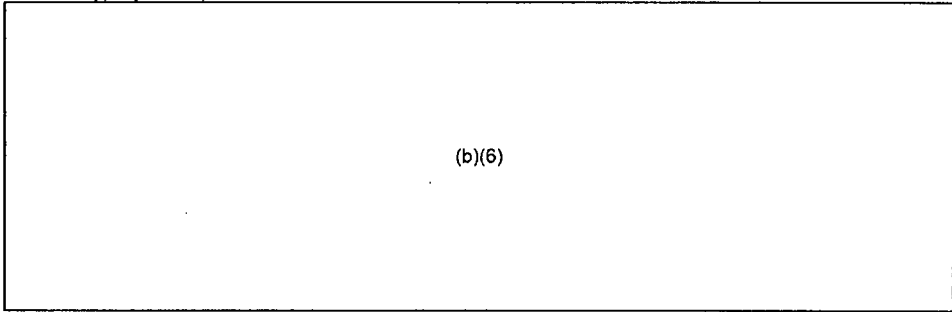
4.

5.

(b)(5)

6. NRC weekend HOC/RST coverage will be "On-Call" basis – will resume Consortium 11:00 am call next Monday May 2/2011.

From: RST01 Hoc
Sent: Thursday, April 28, 2011 5:28 PM
To:



Subject: FW: 11 am meeting minutes
Attachments: April 28 1100 Agenda Minutes.docx

All

Here are the minutes from the 11am call.

Andy Kugler
Reactor Safety Team

Agenda
11:00 am Consortium Call
4/28/2011

1. Plant status update/ information from 0300 call and 0830 call

(b)(5)

- 2.

(b)(5)

(b)(5)

- 3.

(b)(5)

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- 4.

(b)(5)

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5.

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6.

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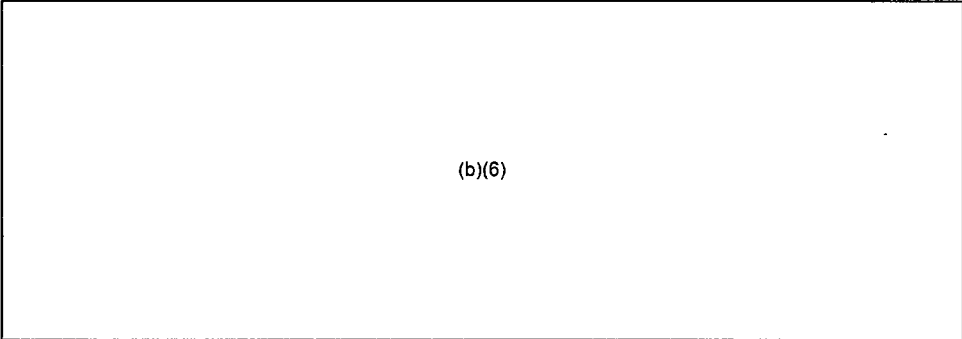
(b)(5)

7. Concerns still exist about the Unit 4 SFP, Site team would like us to address

(b)(5)

8. RST took an action to determine how the Safety Culture was added to the Analysis of the TEPCO road map.

From: RST01 Hoc
Sent: Thursday, April 28, 2011 2:17 PM
To:



Cc: Norton, Charles
Subject: 11 am call minutes
Attachments: April 28 1100 Agenda Minutes.docx

Here are the minutes from the 11 am call.

The one major change is that I mis-spoke on when we need comments back on the TEPCO roadmap.

Apparently, we will have the TEPCO roadmap analysis out today and we need to have comments back by COB tomorrow.

Sorry for the rapid turnaround.

Mike

Mike Brown
Reactor Safety Team

Agenda
11:00 am Consortium Call
4/28/2011

1. Plant status update/ information from 0300 call and 0830 call

(b)(5)

- 2.

(b)(5)

(b)(5)

- 3.

(b)(5)

(b)(5)

- 4.

(b)(5)

(b)(5)

5.

(b)(5)

(b)(5)

6.

(b)(5)

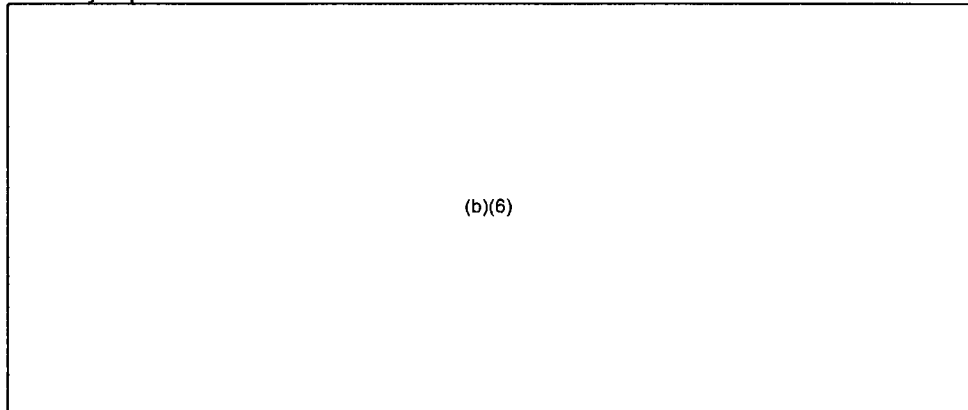
(b)(5)

7. **Concerns still exist about the Unit 4 SFP, Site team would like us to address**

(b)(5)

8. **RST took an action to determine how the Safety Culture was added to the Analysis of the TEPCO road map.**

From: RST01 Hoc
Sent: Tuesday, April 26, 2011 10:08 AM
To:



Subject: Consortium Agenda for 4/26
Attachments: April 26 1100 Agenda.docx

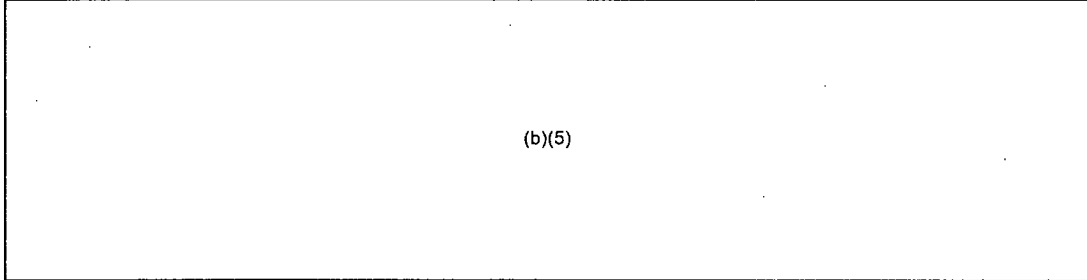
All:

Attached is the April 26th meeting Agenda.

Thanks,
Steve Campbell
Reactor Safety Team

Agenda
11:00 am Consortium Call
4/26/2011

1.



2.

3. When RPV / PCV level above TAF, need strategies on possible recirculation path and heat exchange system. Discuss any options that the Consortium has come up with.

From: Casto, Chuck
Sent: Monday, April 25, 2011 9:28 PM

To:

(b)(6)

Cc: Hiland, Patrick; Skeen, David; Carpenter, Cynthia; Ruland, William
Subject: Re: April 23 roadmap assessment Rev 2 Skeen CN.docx

It has not been provided to GOJ. Yet.

----- Original Message -----

From: (b)(6)

To: (b)(6)

(b)(6)

Cc: Hiland, Patrick; Skeen, David; Casto, Chuck; Carpenter, Cynthia; Ruland, William
Sent: Mon Apr 25 21:22:17 2011
Subject: RE: April 23 roadmap assessment Rev 2 Skeen CN.docx

If the document was shared with GoJ with references to NR/Knolls/Bettis on page 15-16, it should be retracted and replaced with one that does not have the NR organizations referenced until you have our comments incorporated. This was the agreement from conversations between NR and NRC earlier today.

I just spent several hours reviewing and commenting on this and need to staff it within Naval Reactors before this is release document with Naval Reactors name on it.

TG Vavoso

From: RST01 Hoc [mailto:RST01.Hoc@nrc.gov]
Sent: Mon 4/25/2011 8:59 PM

To: (b)(6)

(b)(6)

(b)(6)

Cc: Hiland, Patrick; Skeen, David; Casto, Chuck; Carpenter, Cynthia; Ruland, William
Subject: April 23 roadmap assessment Rev 2 Skeen CN.docx

All,

Attached is the latest version of the NRC Analysis of the TEPCO Roadmap which better reflects current views of the NRC and the rest of the US Consortium. Changes from the revision that was distributed this morning include:

(b)(5)

(b)(5)

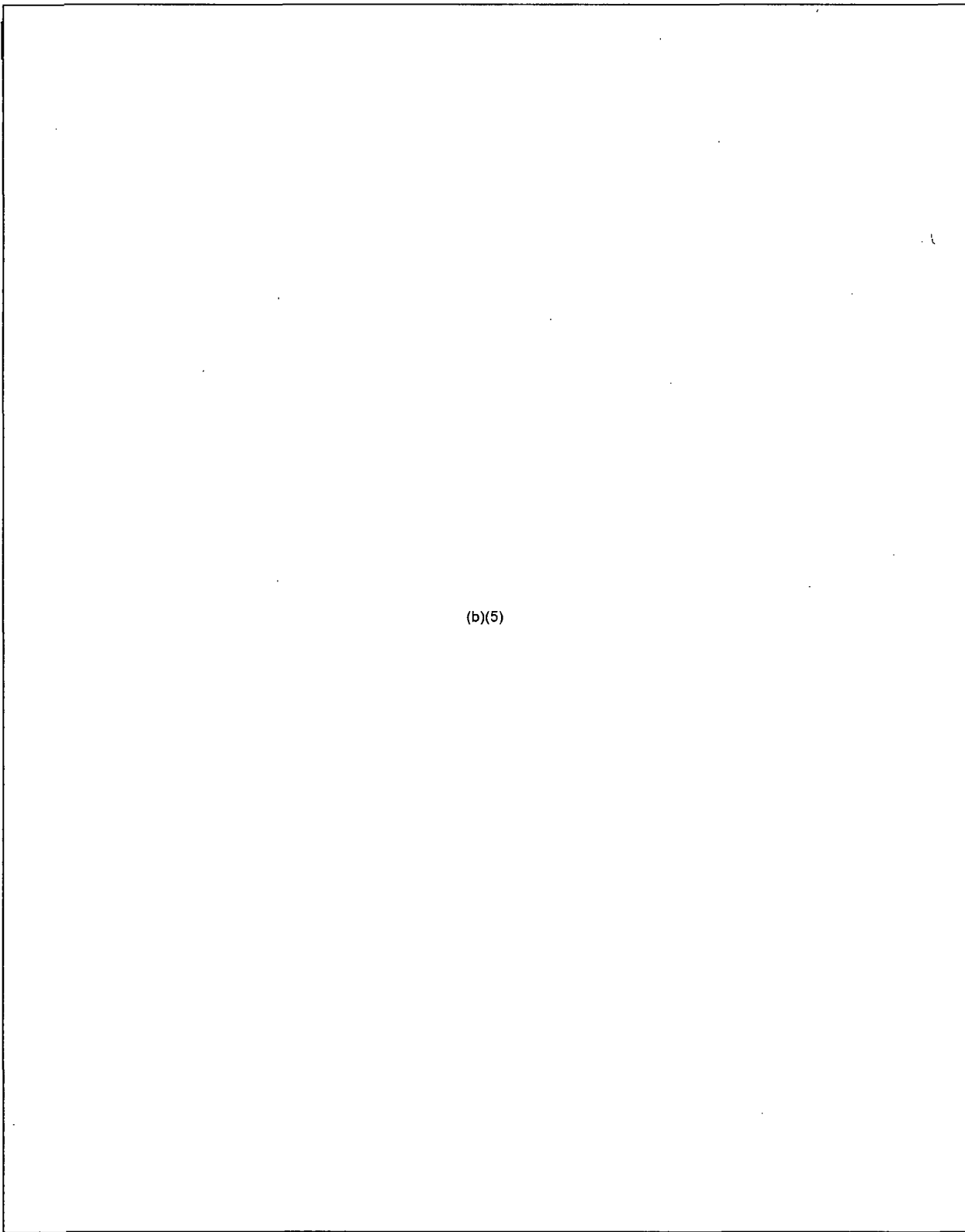
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Thank you all for your continued support.

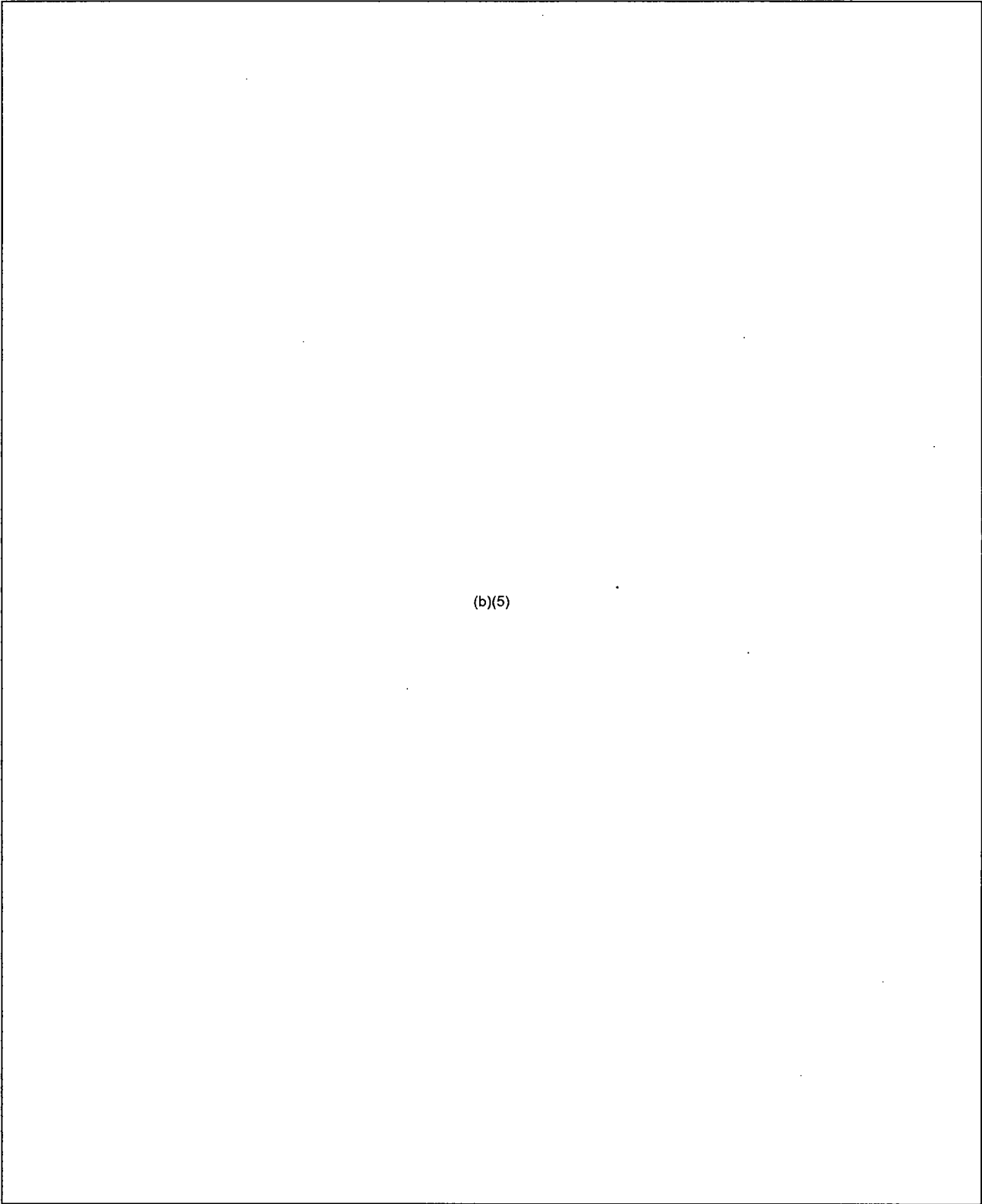
Chuck Norton,

NRC RST BWR Analyst

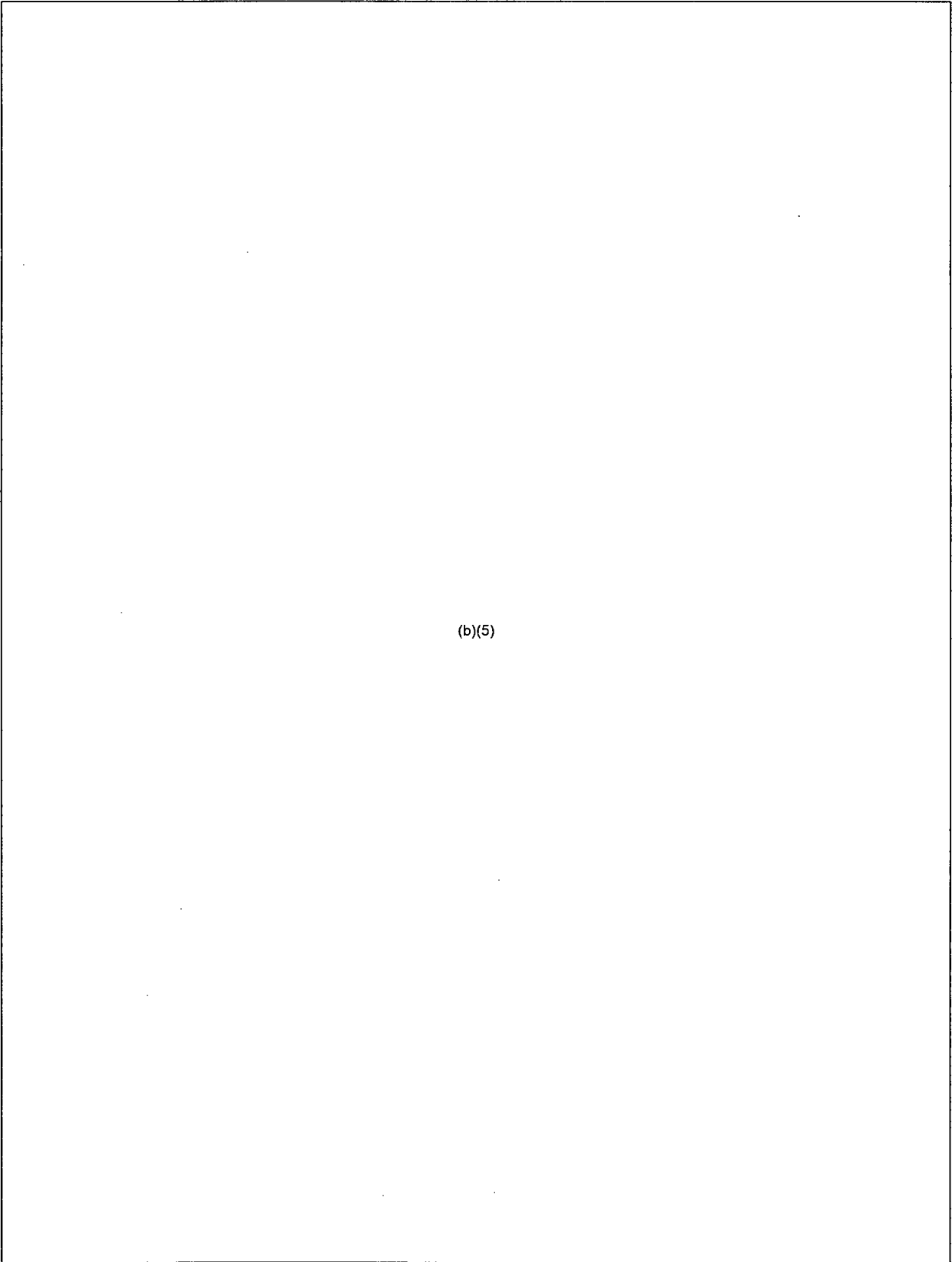
April 25, 2011



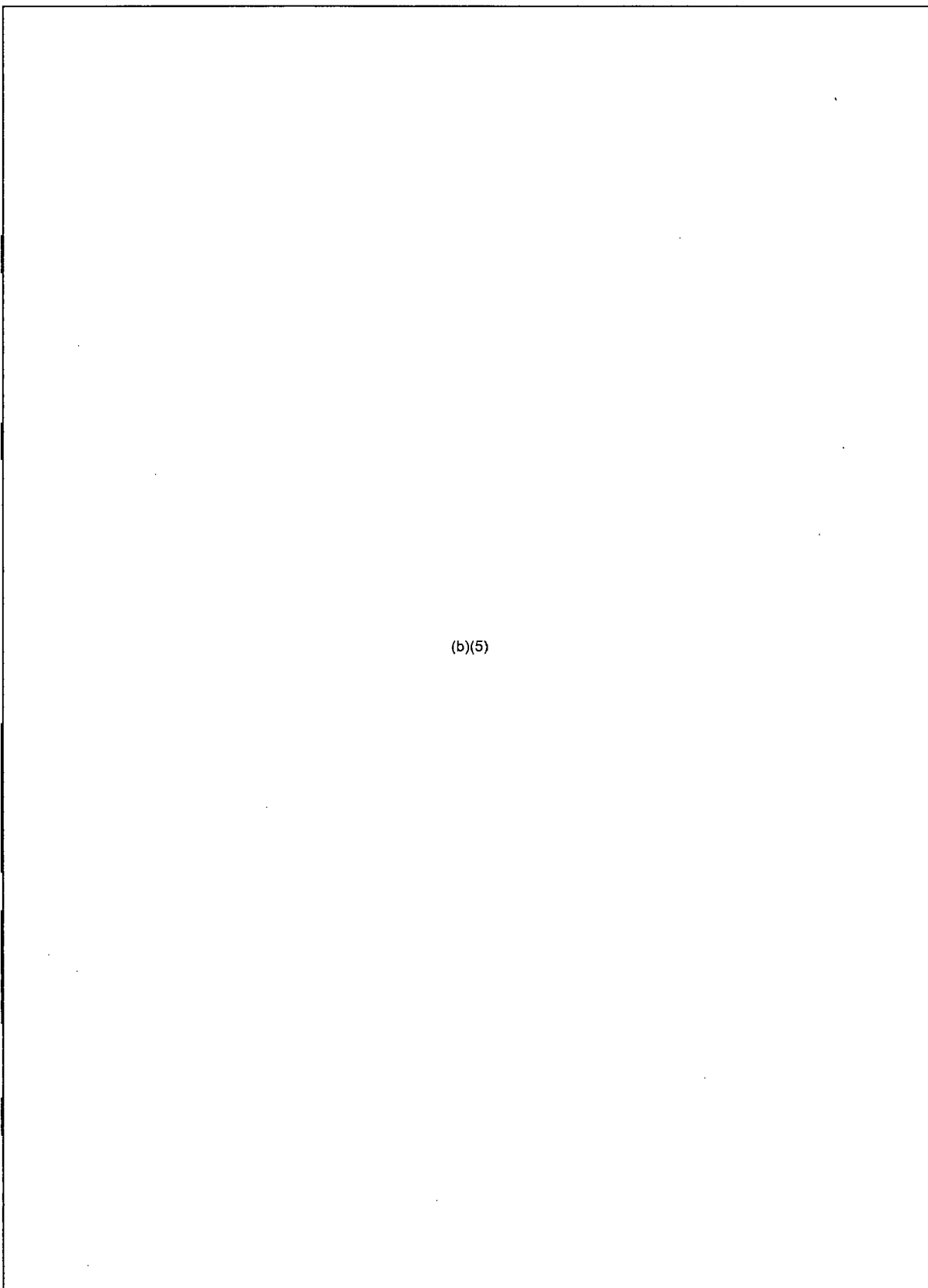
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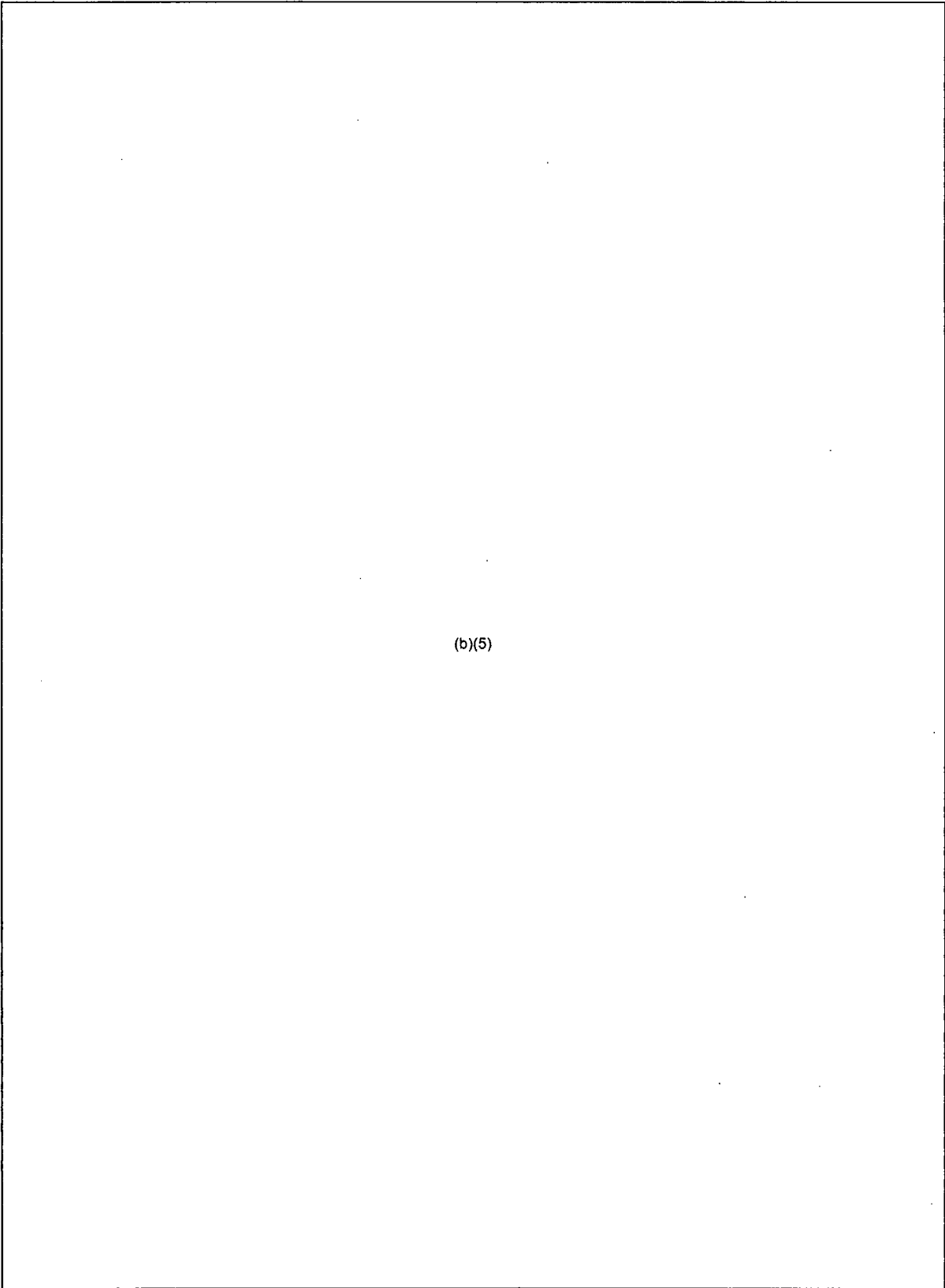
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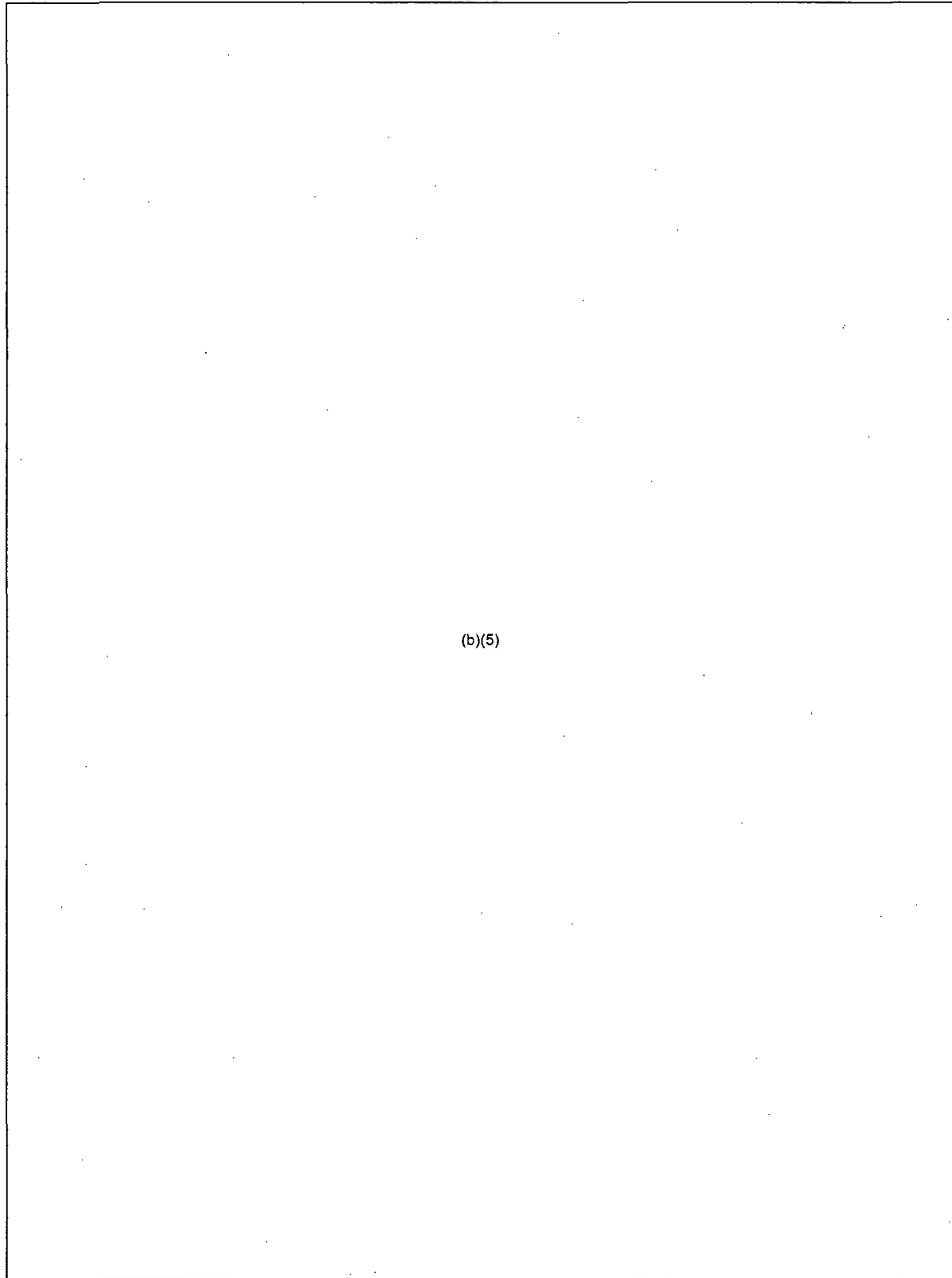
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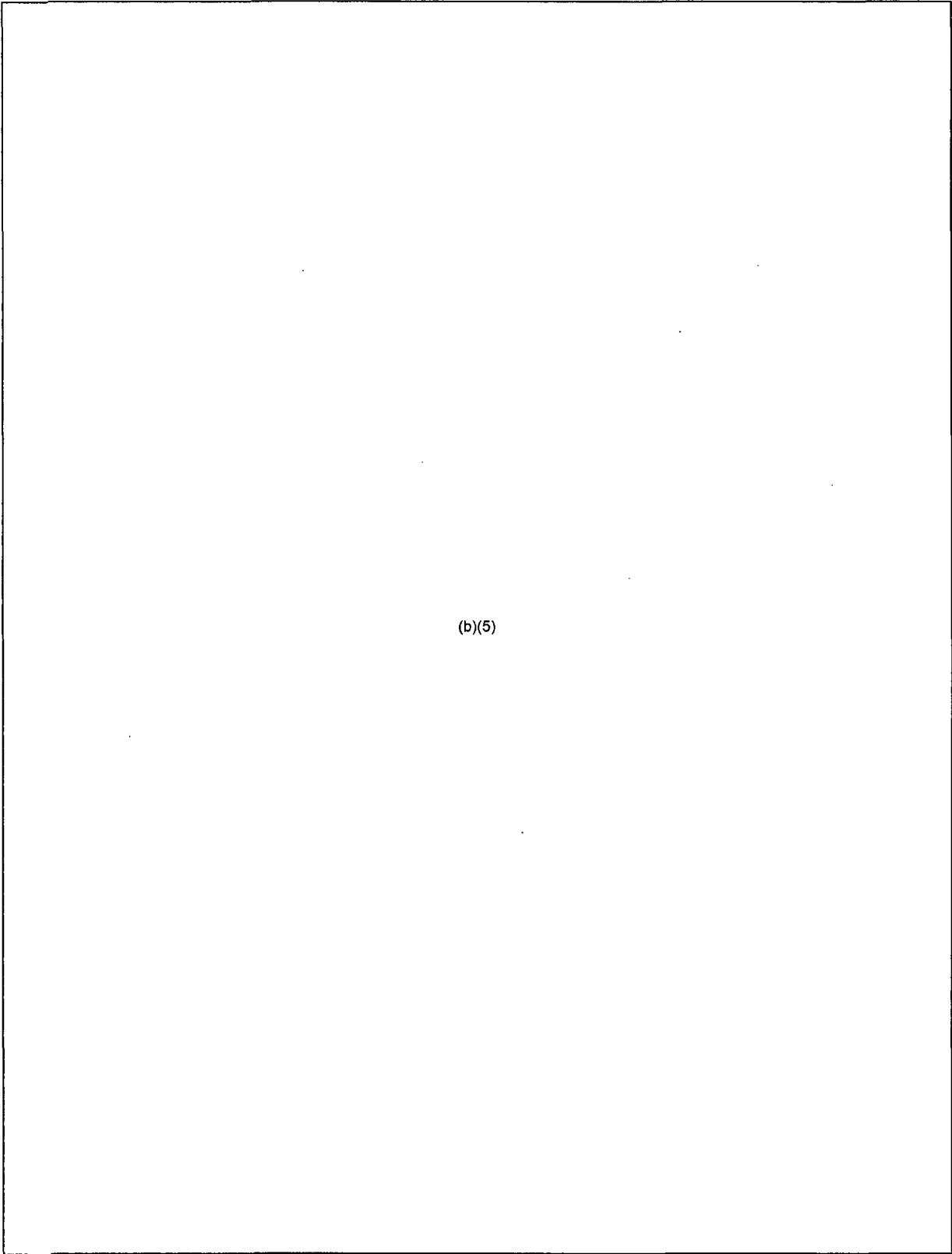
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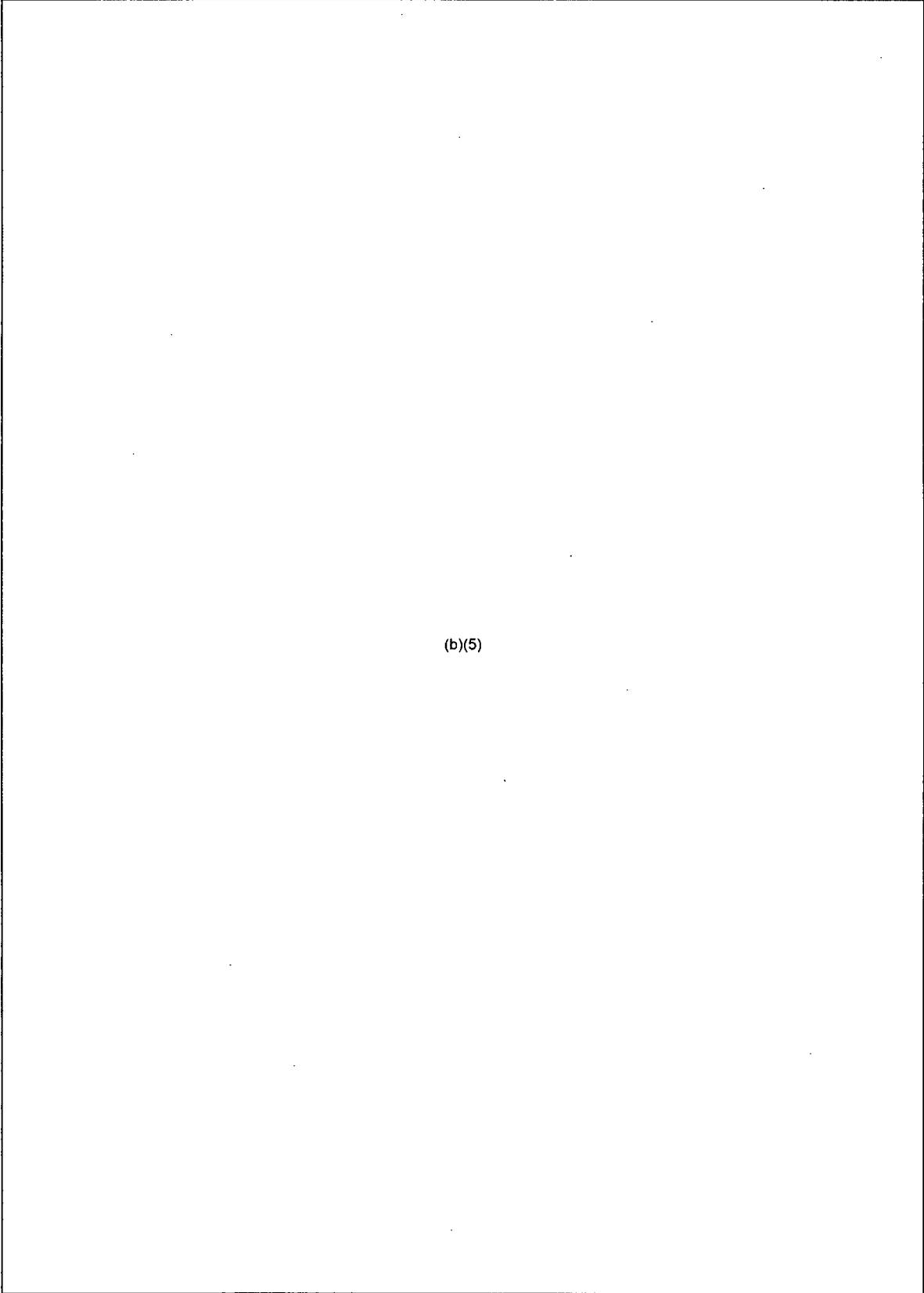
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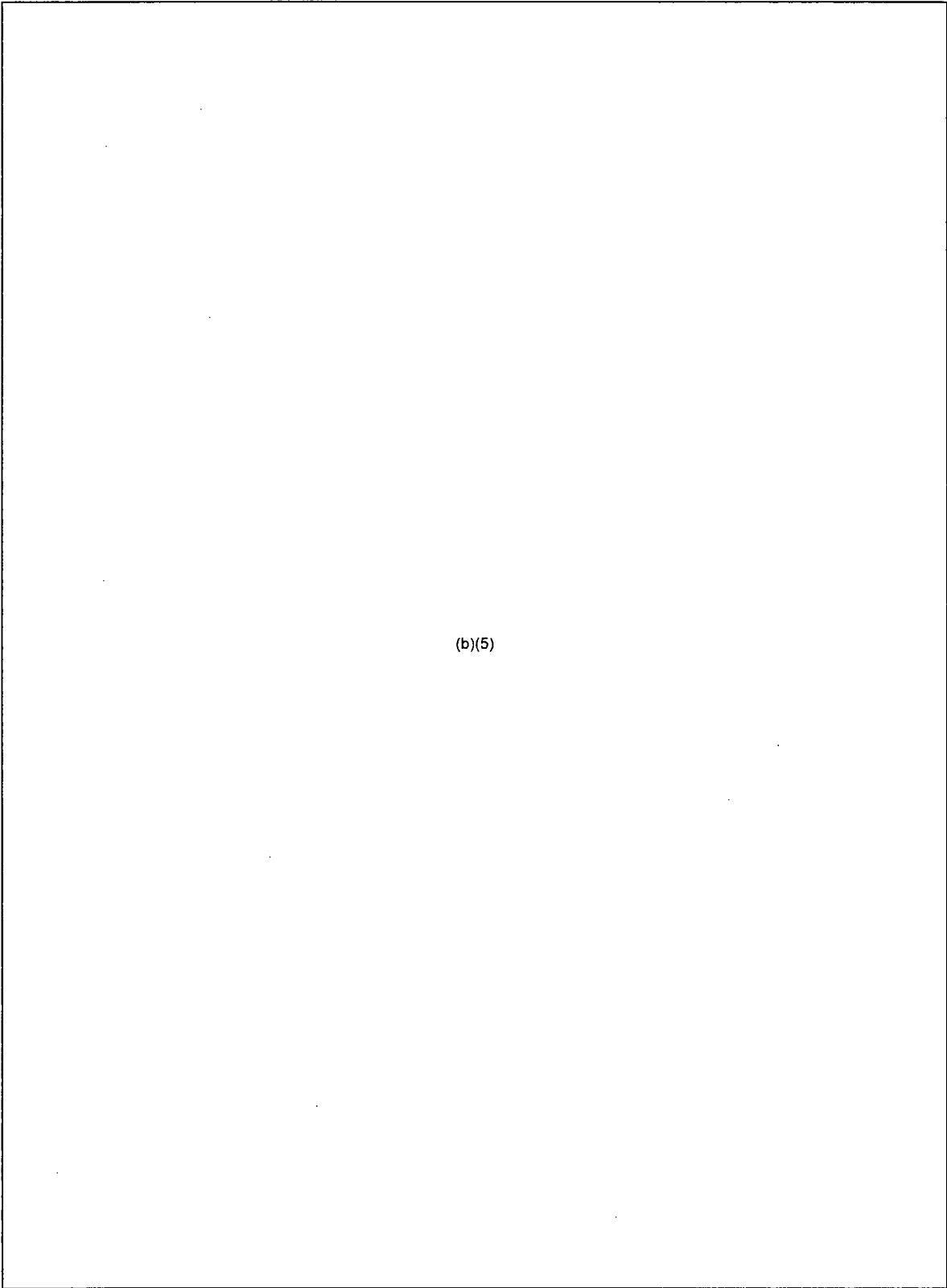
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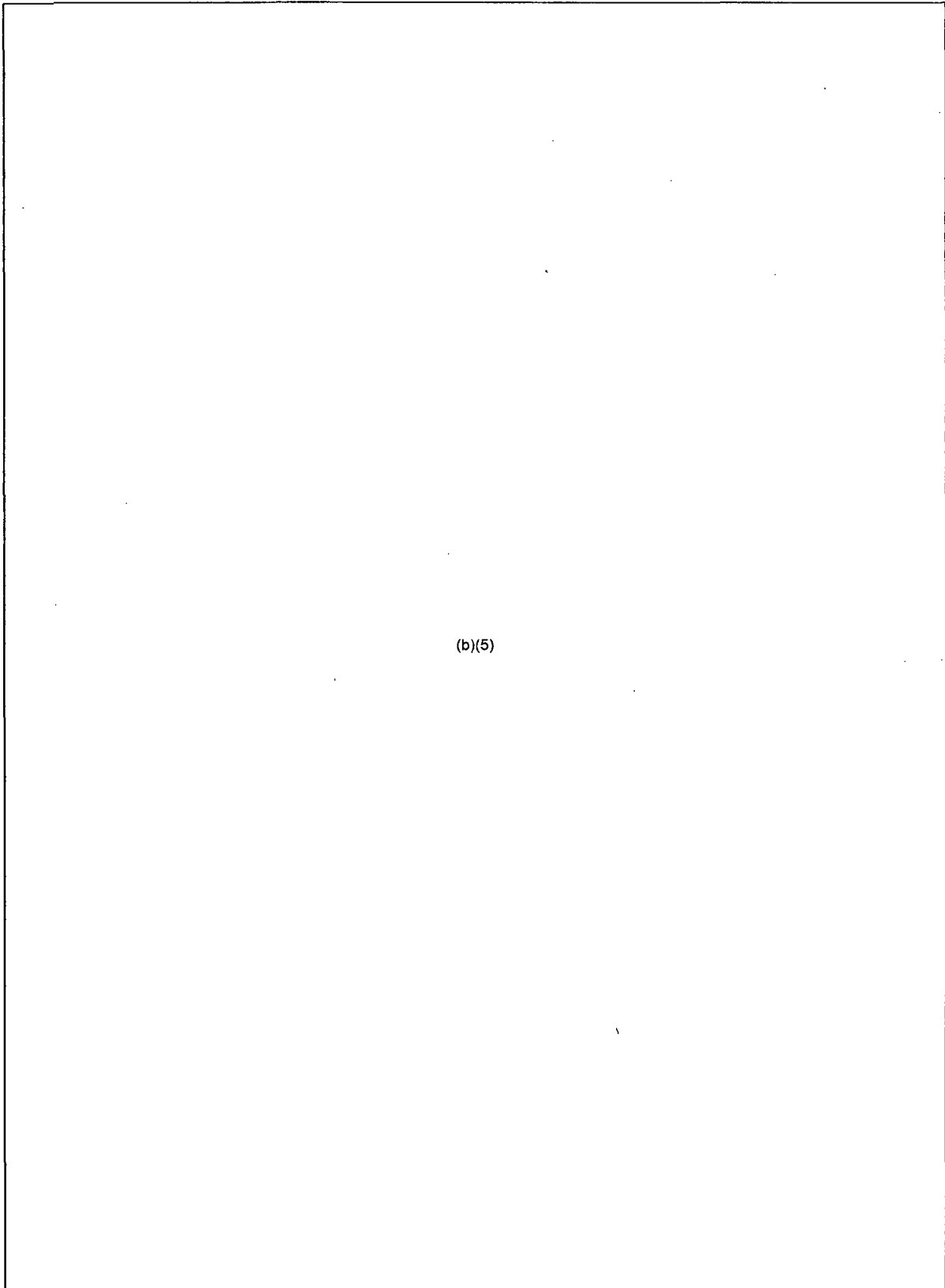
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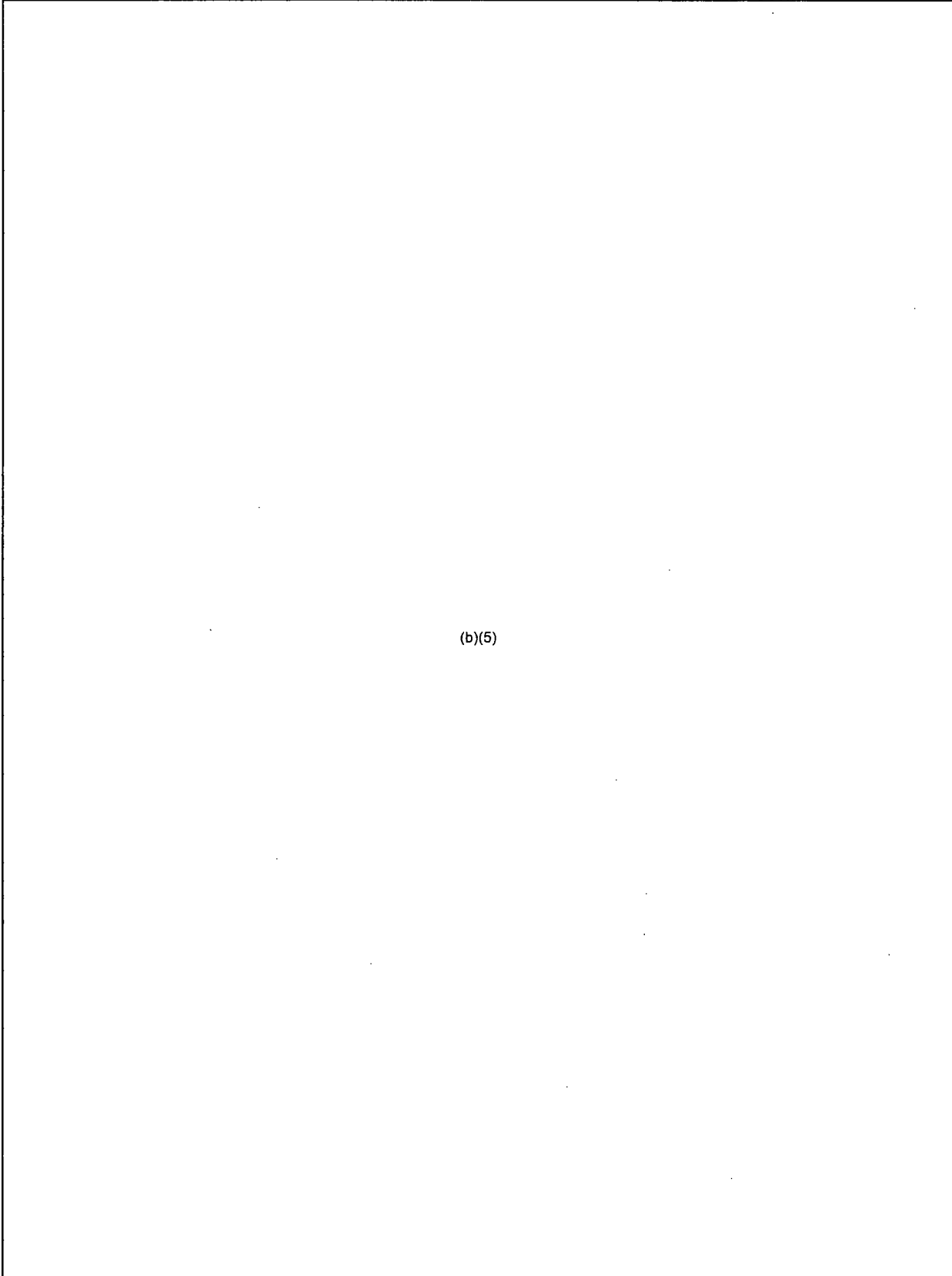
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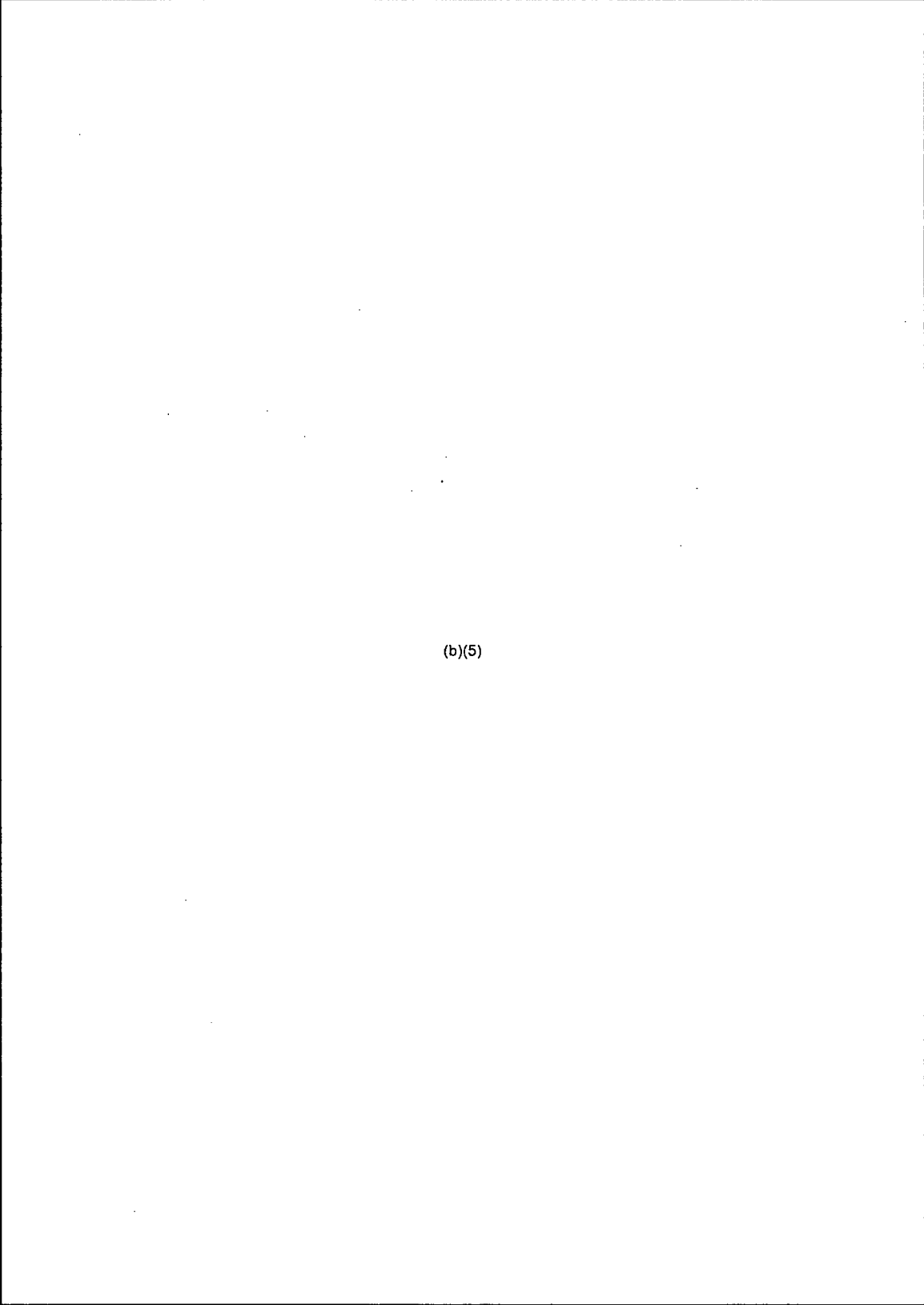
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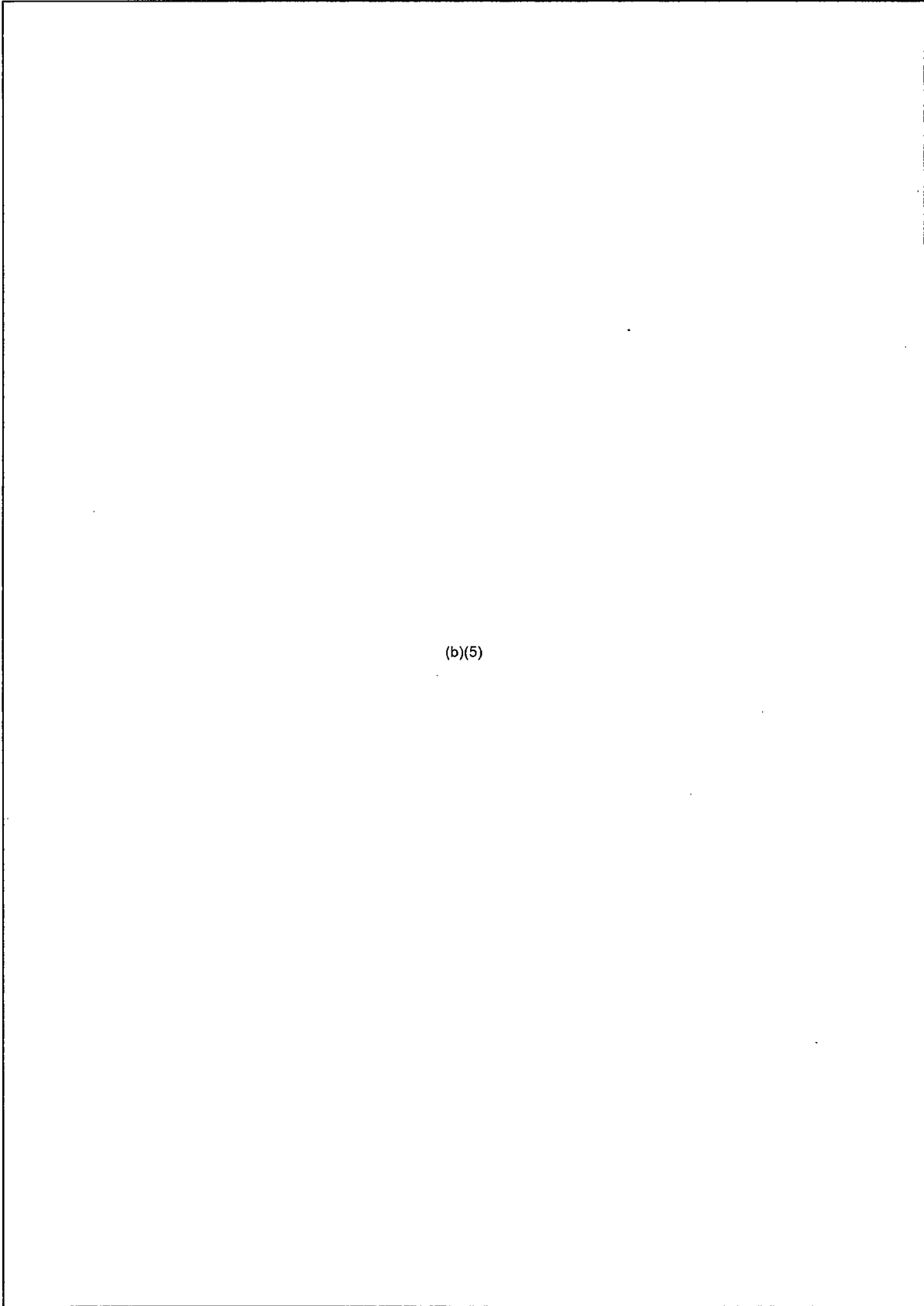
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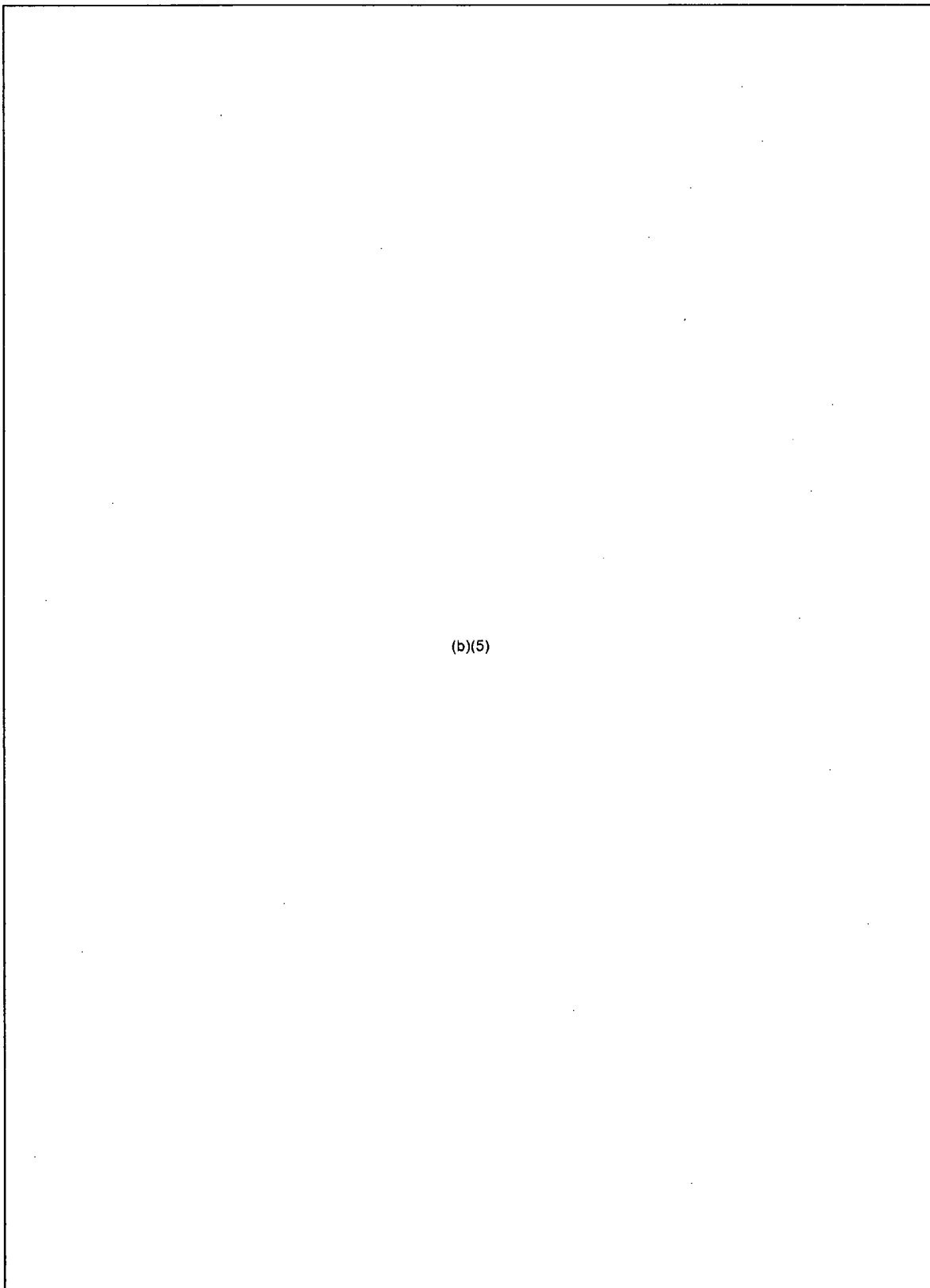
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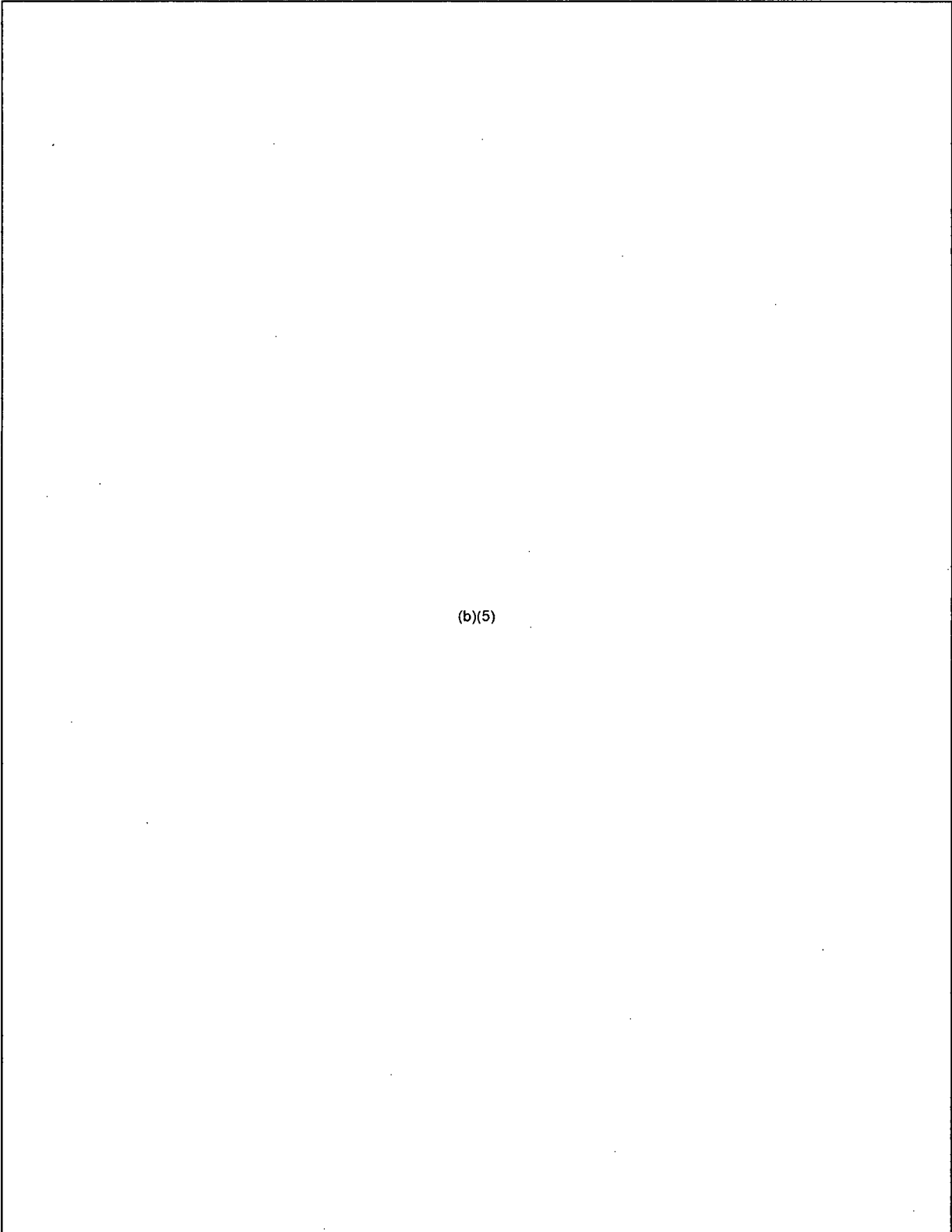
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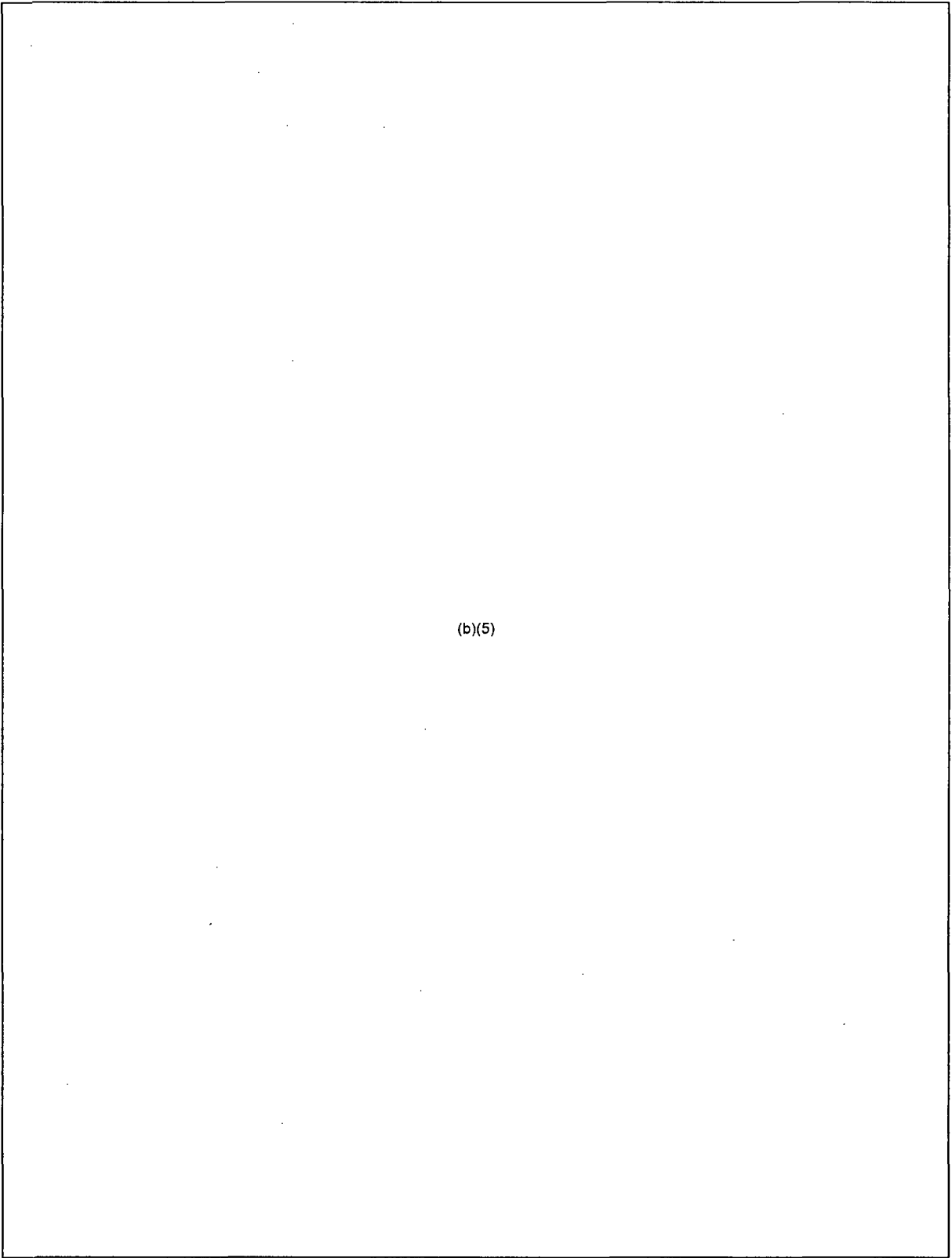
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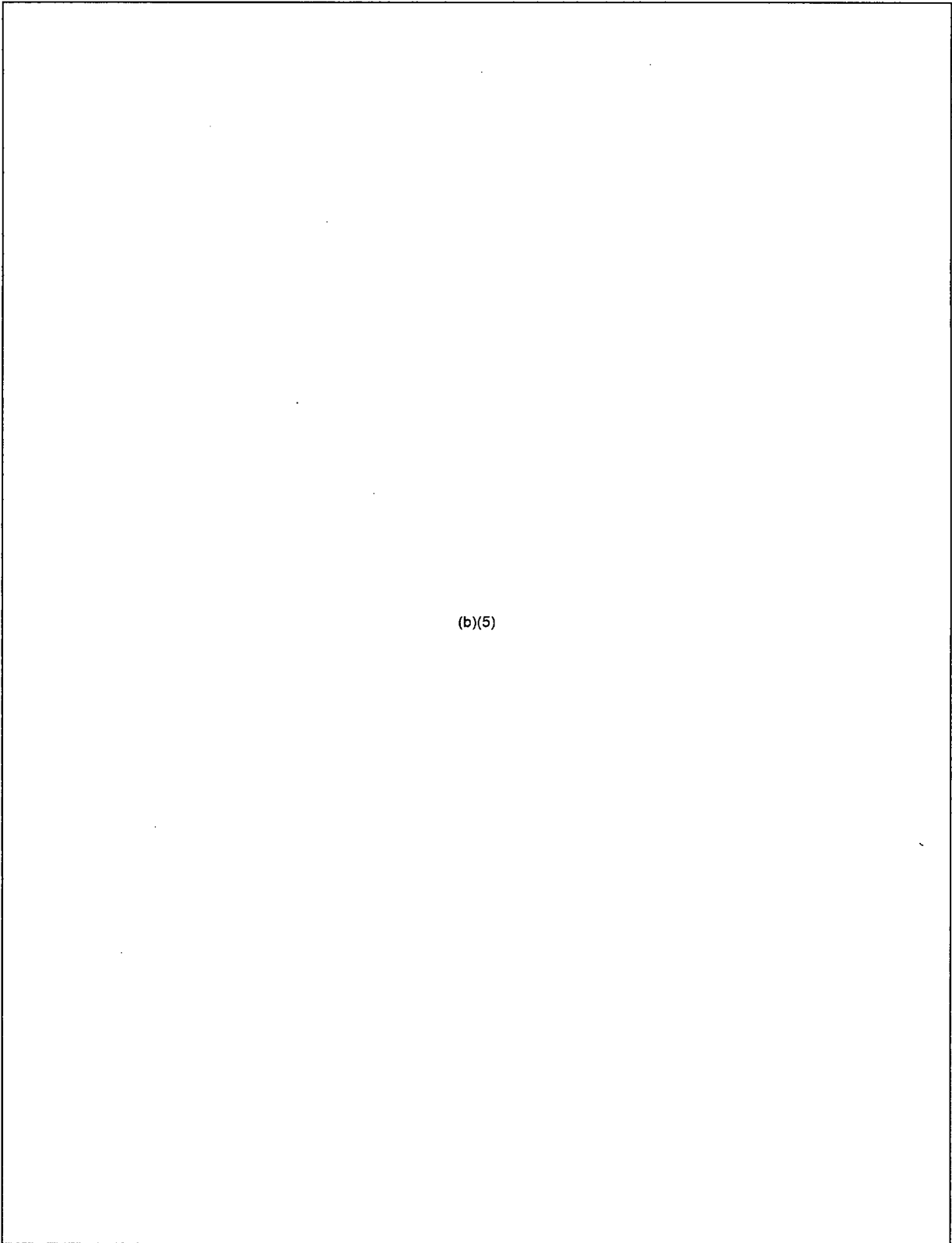
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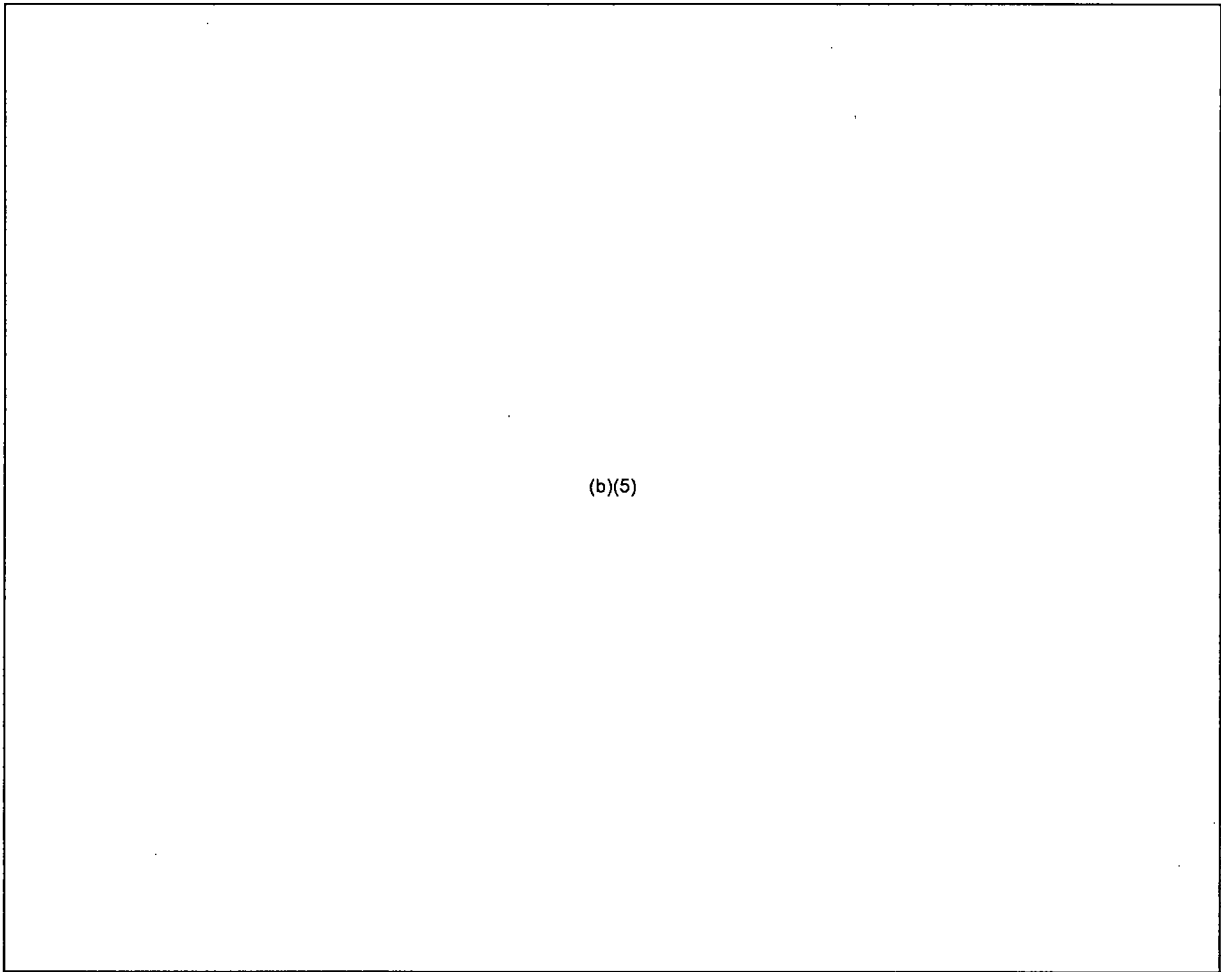
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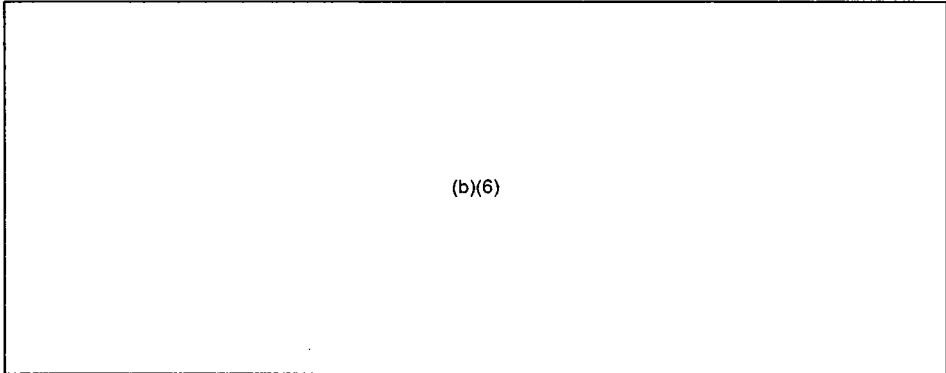


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From: RST01 Hoc
Sent: Monday, April 25, 2011 11:14 AM
To:



Cc:

Subject: Kokajko, Lawrence
Attachments: 1100hrs Consortium ConfCall: Meeting Summary And 04.25.11 Meeting Agenda April 22 rev 1 1100 Agenda.docx; April 22 rev 1 1100 Agenda Minutes.docx; April 25 1100 Agenda.docx

All:

Please find attached the meeting minutes that covers the 04.22.11 1100hrs Consortium Conference call. If there any comments, etc please forward to RST01.

Also find attached the April 25th meeting Agenda.

Thanks,
Don
Reactor Safety Team

Consortium Call
Summary
04.22.11 1100hrs

Document Instructions:

This meeting summary follows the Agenda that has been provided for the 04.22.11 consortium meeting where appropriate.

Definitions Used:

- Consortium: refers to all members of the conference call
- Site Team: refers to NRC members located in Japan

Attendees:

NRC Ops Center; Naval Reactors, INPO ERC, DOE and Mike Brown

Meeting Summary:

1. Follow-up items from 1100hrs
 - a. Site Team is working on the questions. Upon completion will be provided by the NRC Ops Center to the Consortium
2. Source of Leakage to the Turbine Building
 - a. NRC Ops Center requests that those in the Consortium able to work on this request, to do so. Please provide any data to the NRC Ops Center RST01.
3. RPV/PCV Level Above TAF, Strategies on Possible Recirculation Path and Heat Exchange System.
 - a. No updates were provided by the Consortium

FOLLOWING ITEMS WERE ADDITIONAL TO THE PROVIDED AGENDA

4. Roadmap

(b)(5)

5. Consortium Assessment of JNES SFP Actions

(b)(5)

6. GE RPV Breack Document to RST01

(b)(5)

7. NRC Ops Center Status

- a. The NRC Ops Center will be standing down for the Easter weekend starting on 04.21.11 at 1700hrs, and will be stood up on 04.25.11 at 0700hrs. However, NRC staff will remain on-call during this weekend.

Next Consortium Call on 04.25.11 1100hrs

Agenda
11:00am Consortium Call
4/22/2011

1. Followup items from 11am:

a.

(b)(5)

b. Japan Site team to ask TEPCO about

(b)(5)

2.

(b)(5)

(b)(5)

(b)(5)

3.

(b)(5)

**Agenda
11:00am Consortium Call
4/25/2011**

1.

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2.

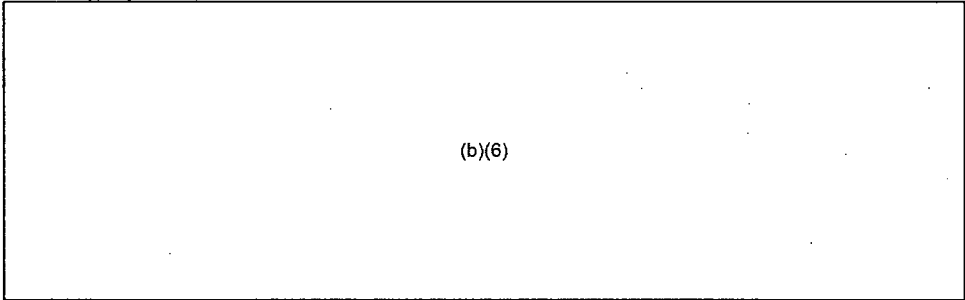
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3.

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4. Is there any additional input from Consortium members related to source of leakage into the turbine building?

From: RST01 Hoc
Sent: Monday, April 25, 2011 8:40 AM
To:



Subject: FW: Roadmap Document
Attachments: April 23 roadmap assessmentRev.1Casto.docx

Please review and provide comments by COB toady. Thanks!

From: Casto, Chuck
Sent: Monday, April 25, 2011 3:25 AM
To: RST01 Hoc; Skeen, David; Hiland, Patrick
Cc: Reynolds, Steven; Virgilio, Martin
Subject: Roadmap Document

Folks,

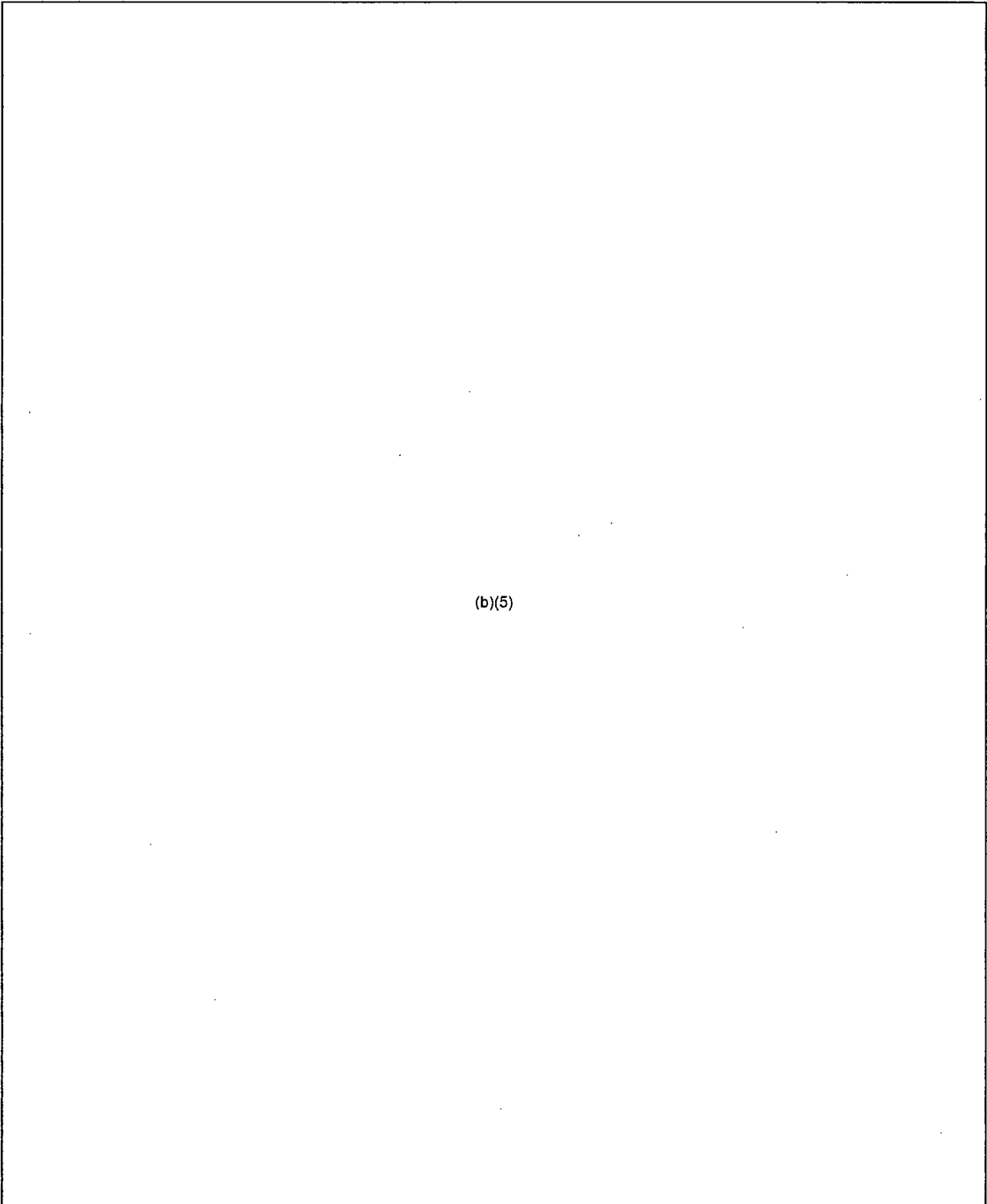
Attached is the Roadmap document as modified by the site Team.....

Thanks for the work on this.....we need to share it tomorrow night at the cabinet meeting...

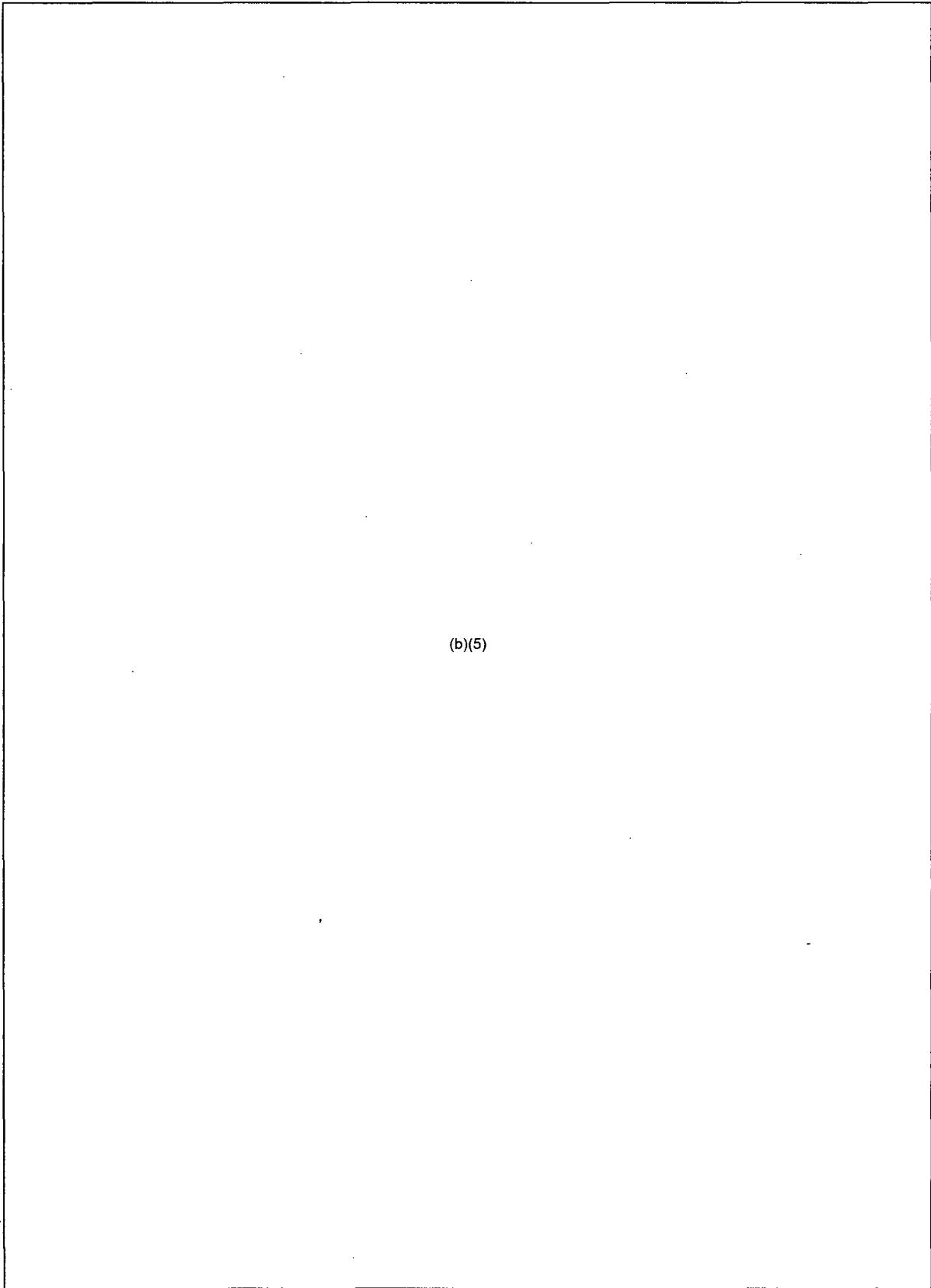
Thanks

casto

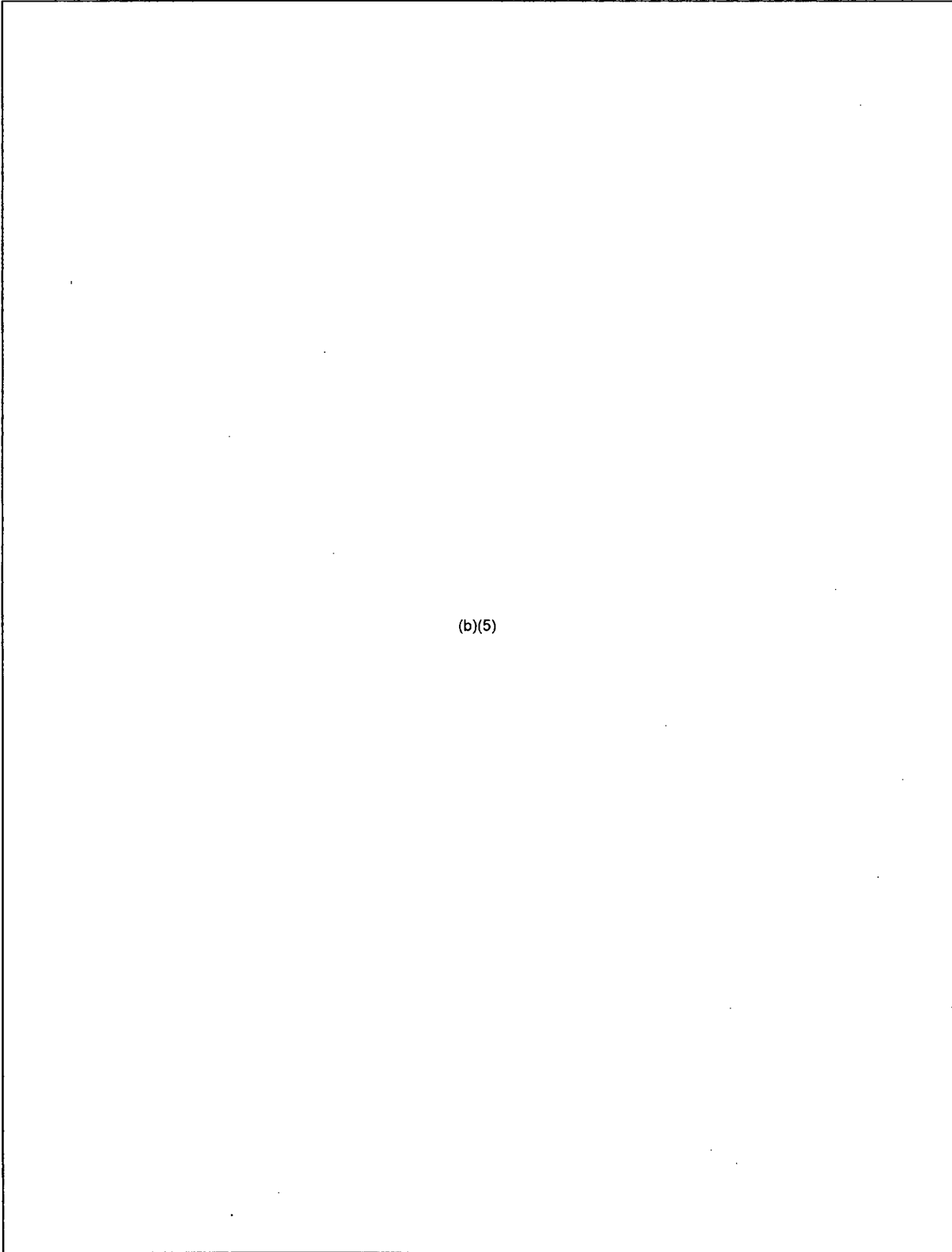
April 25, 2011



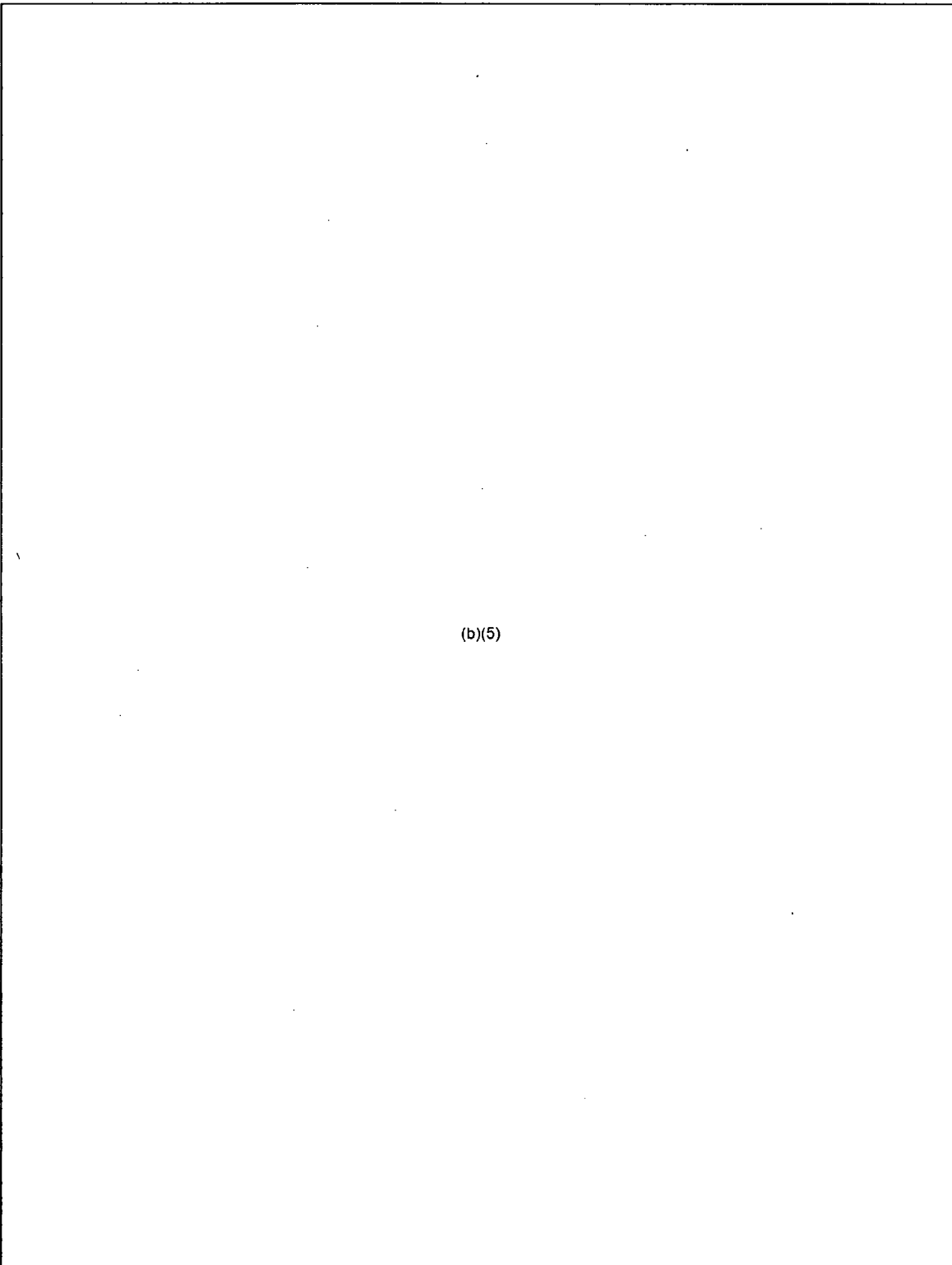
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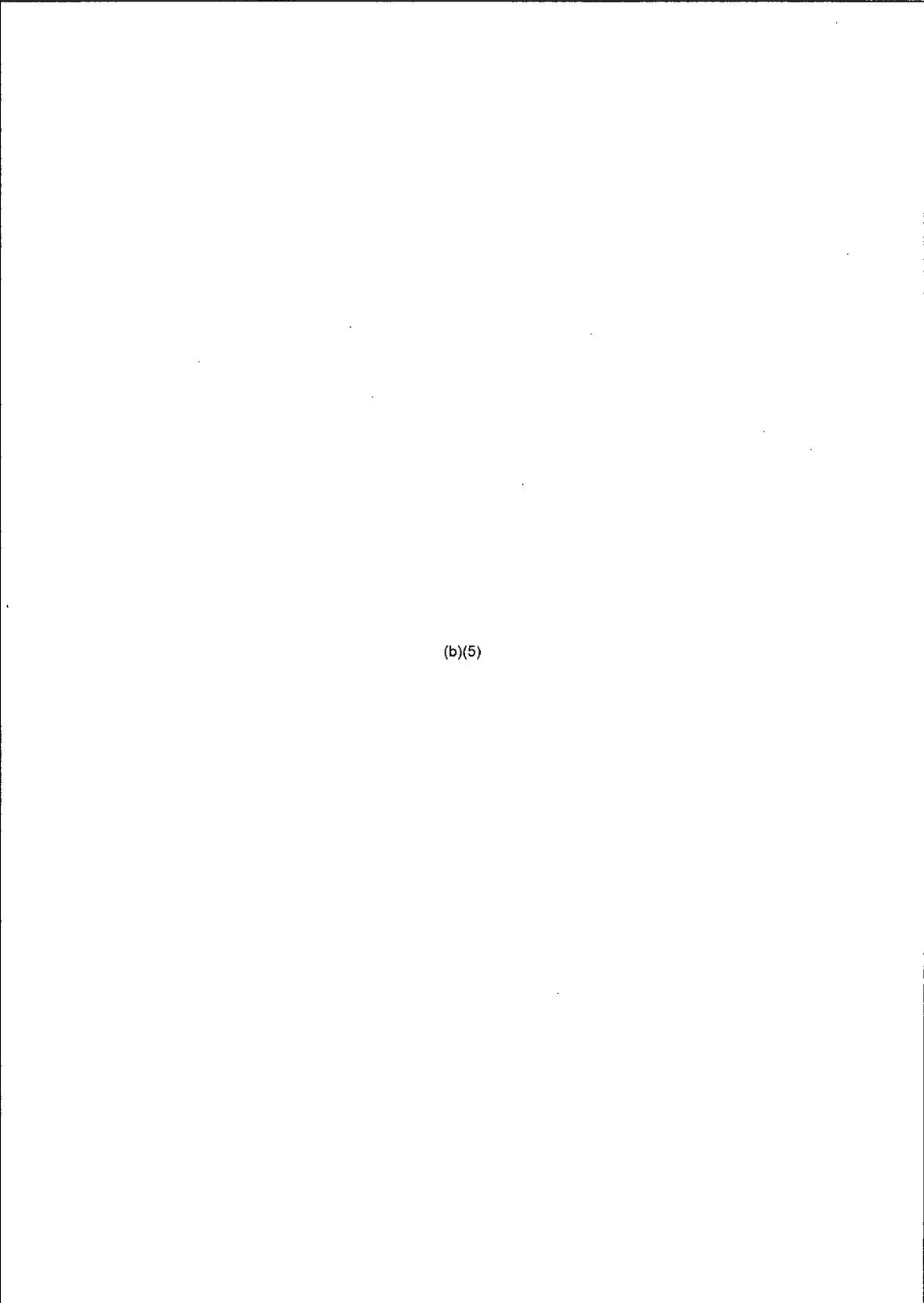
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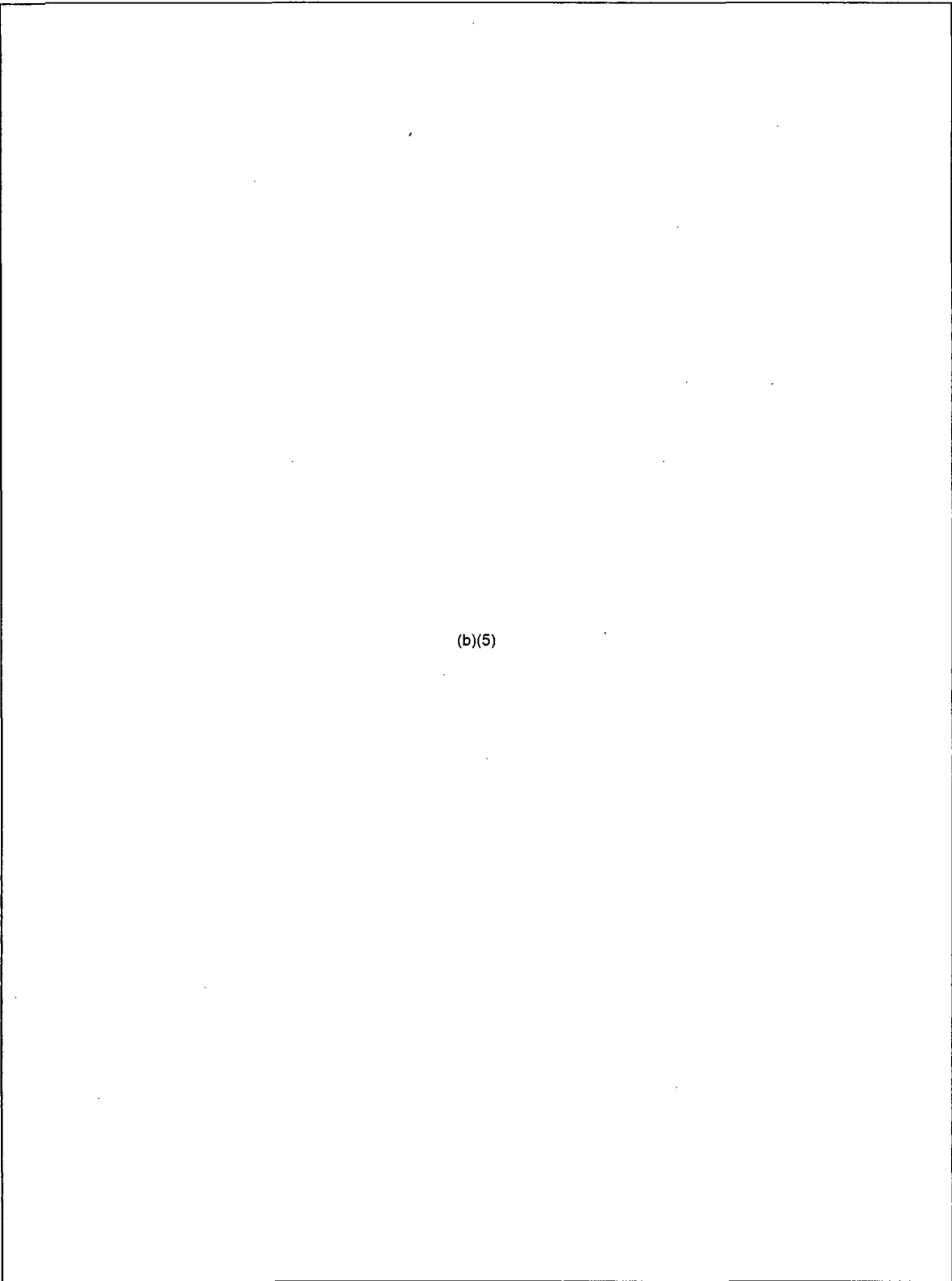
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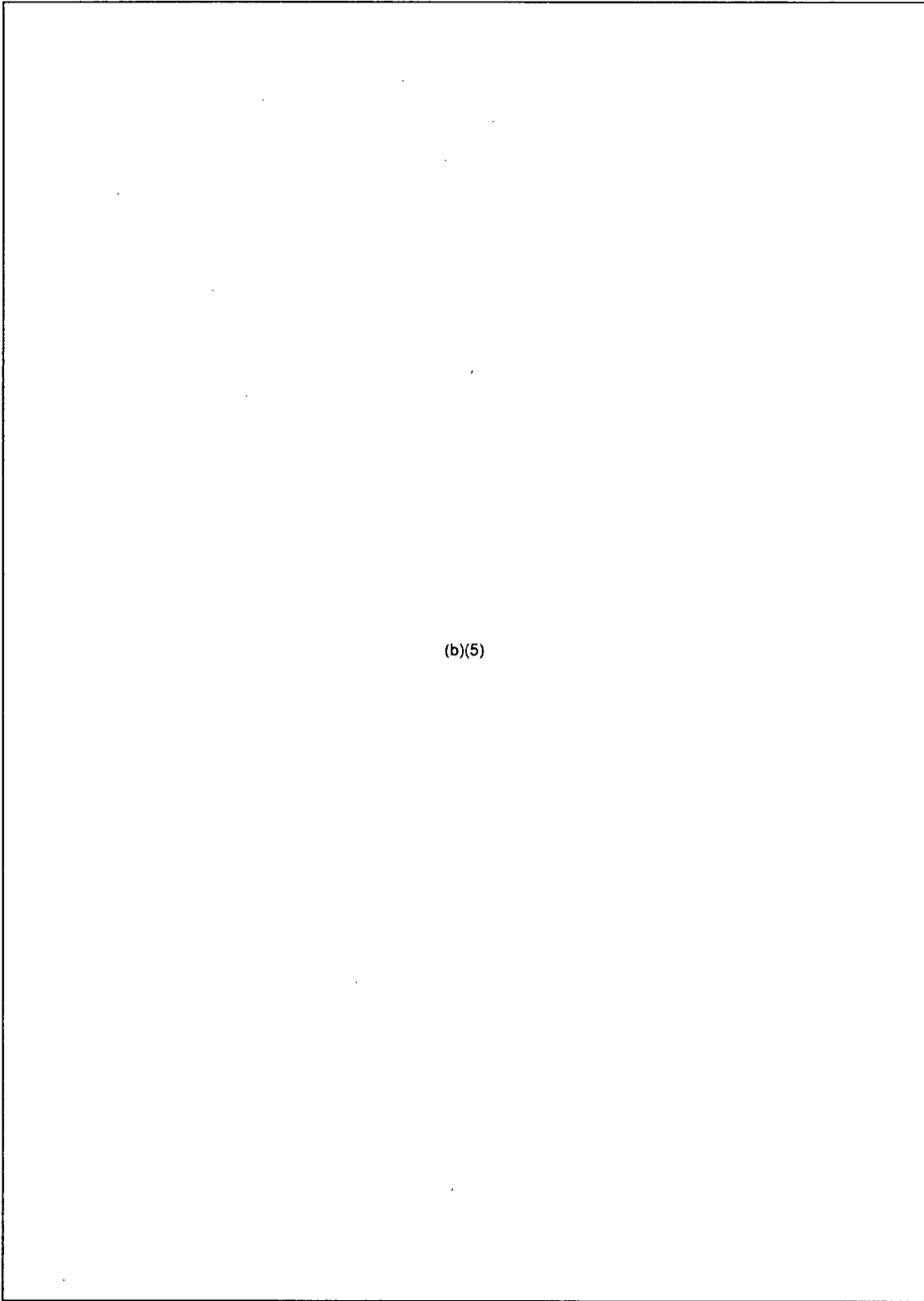
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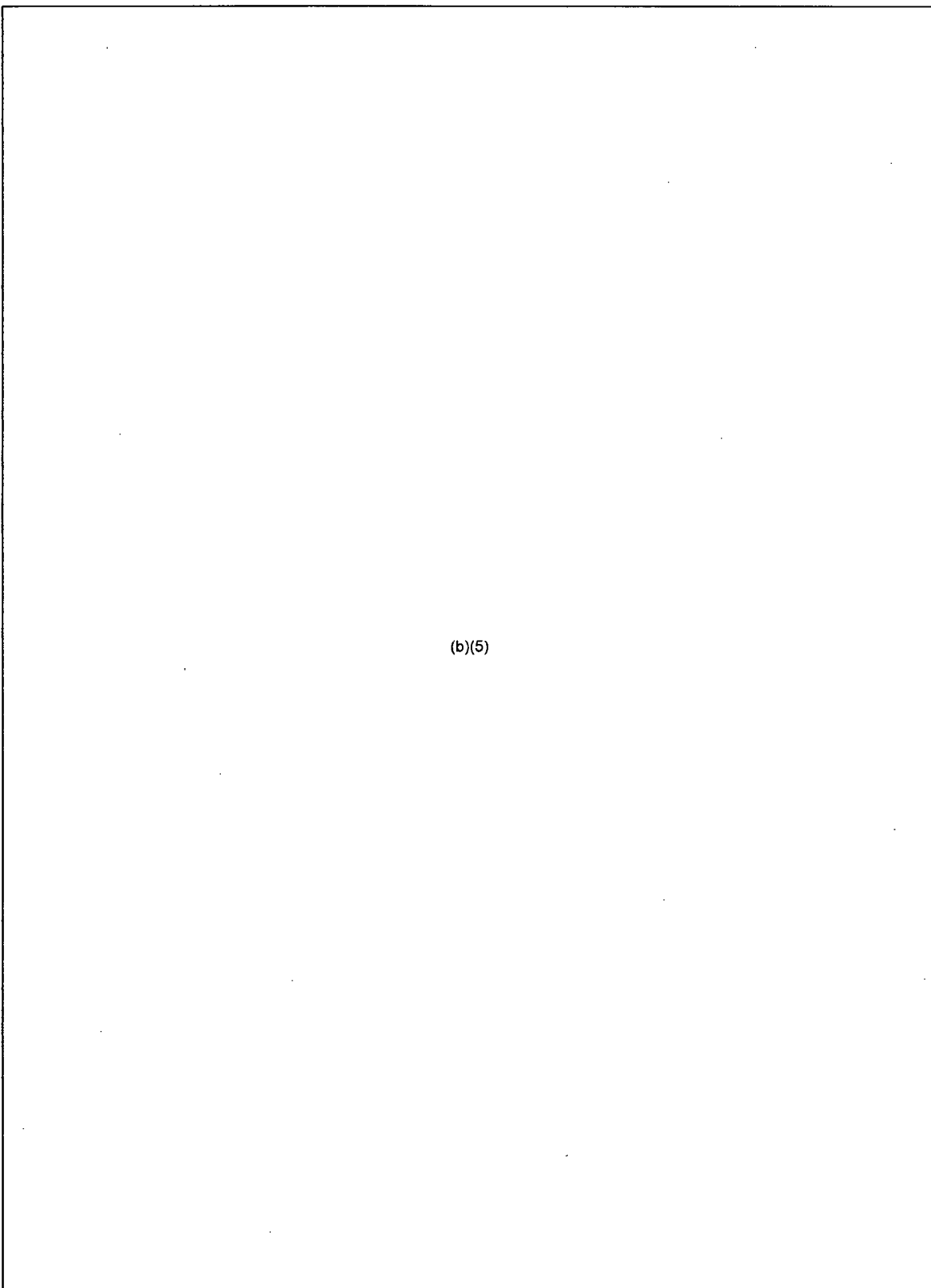
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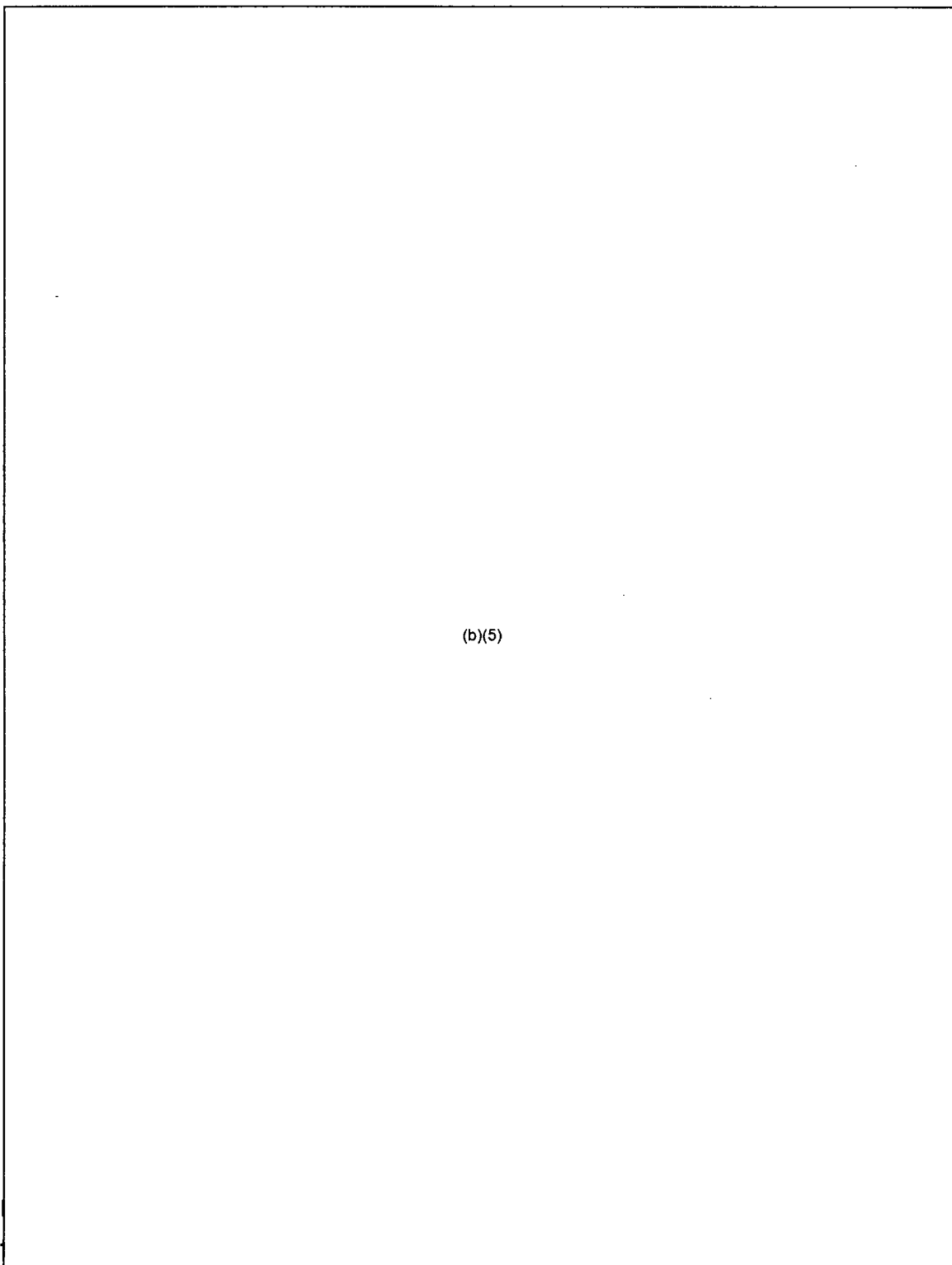
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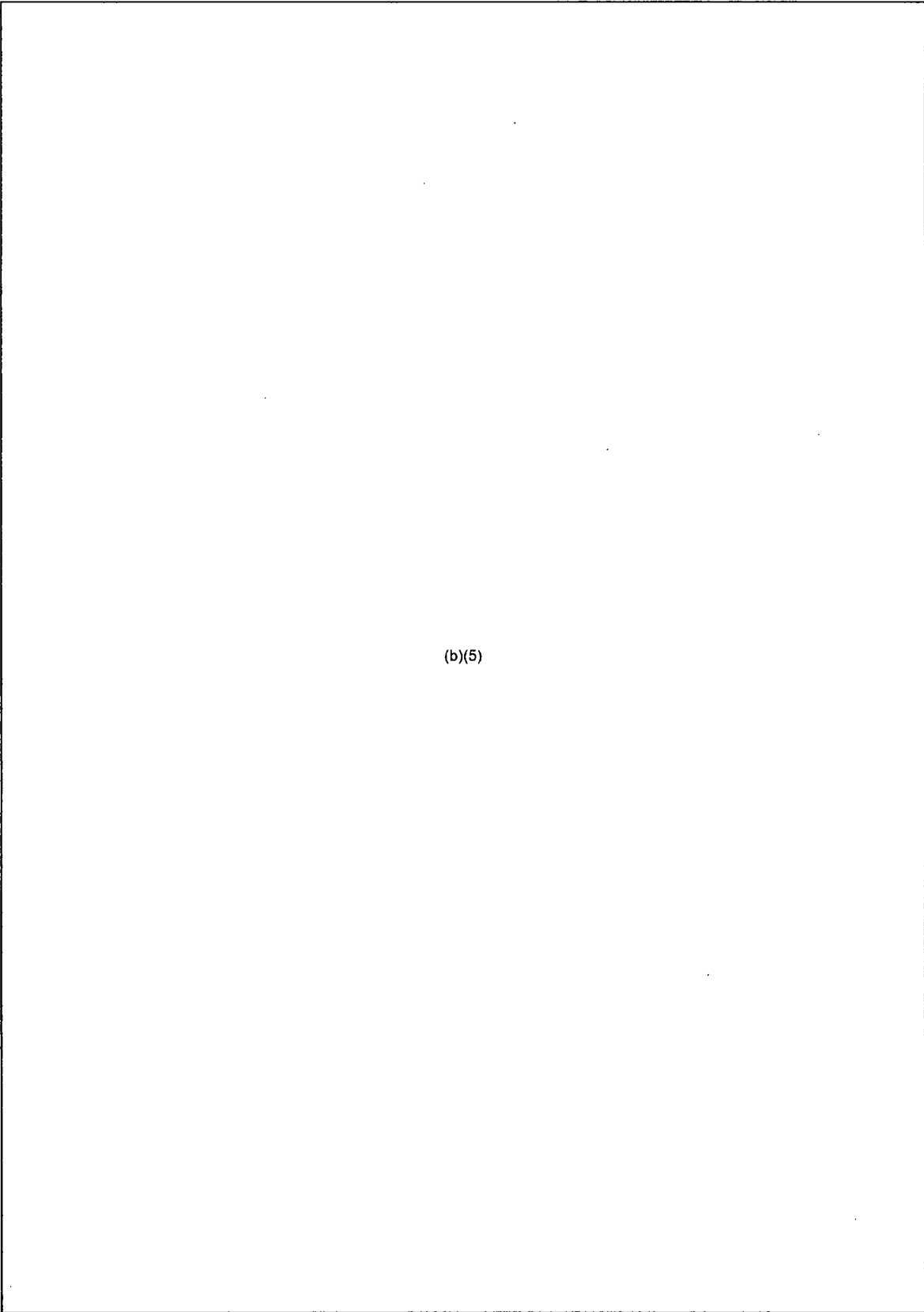
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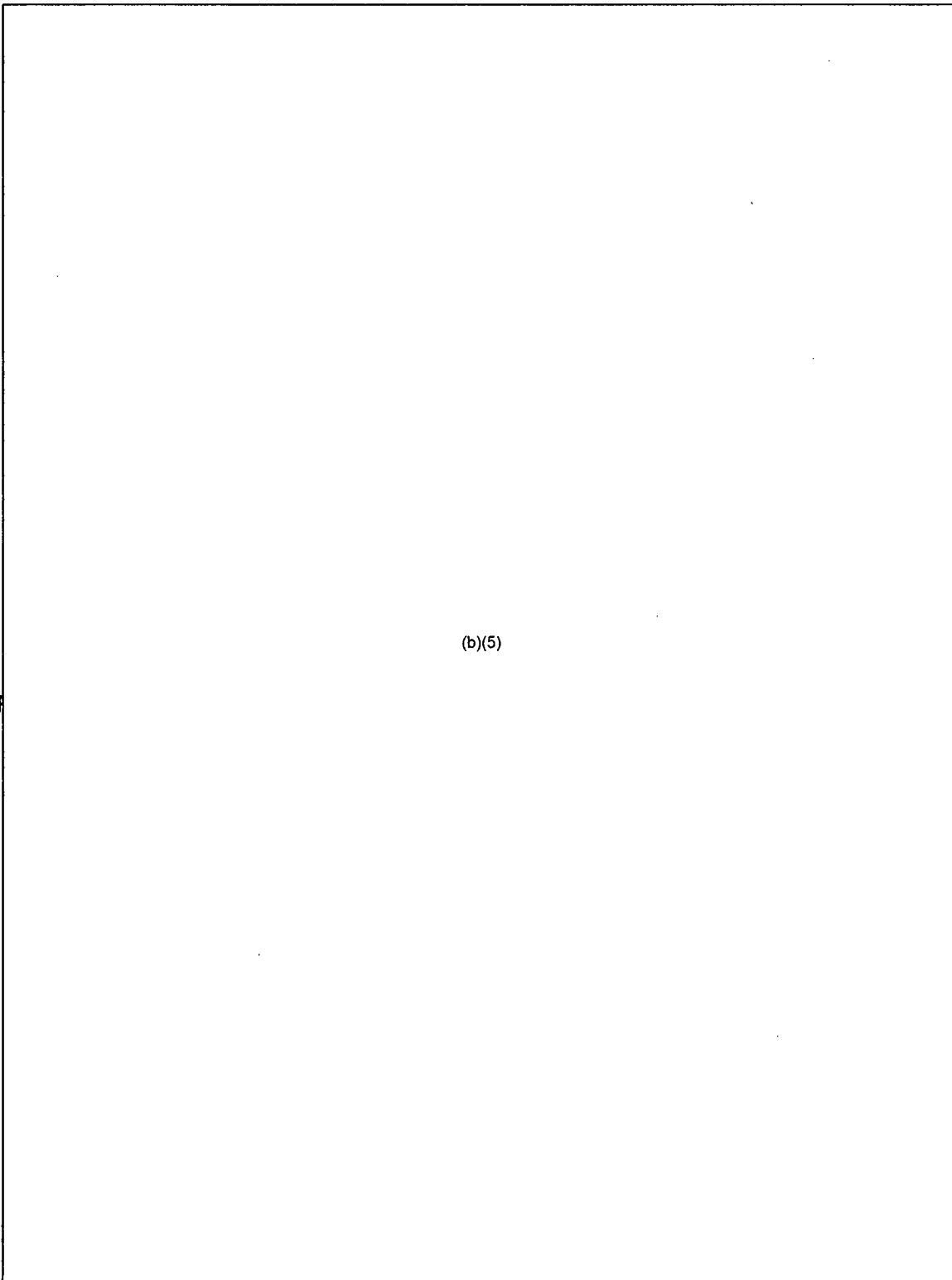
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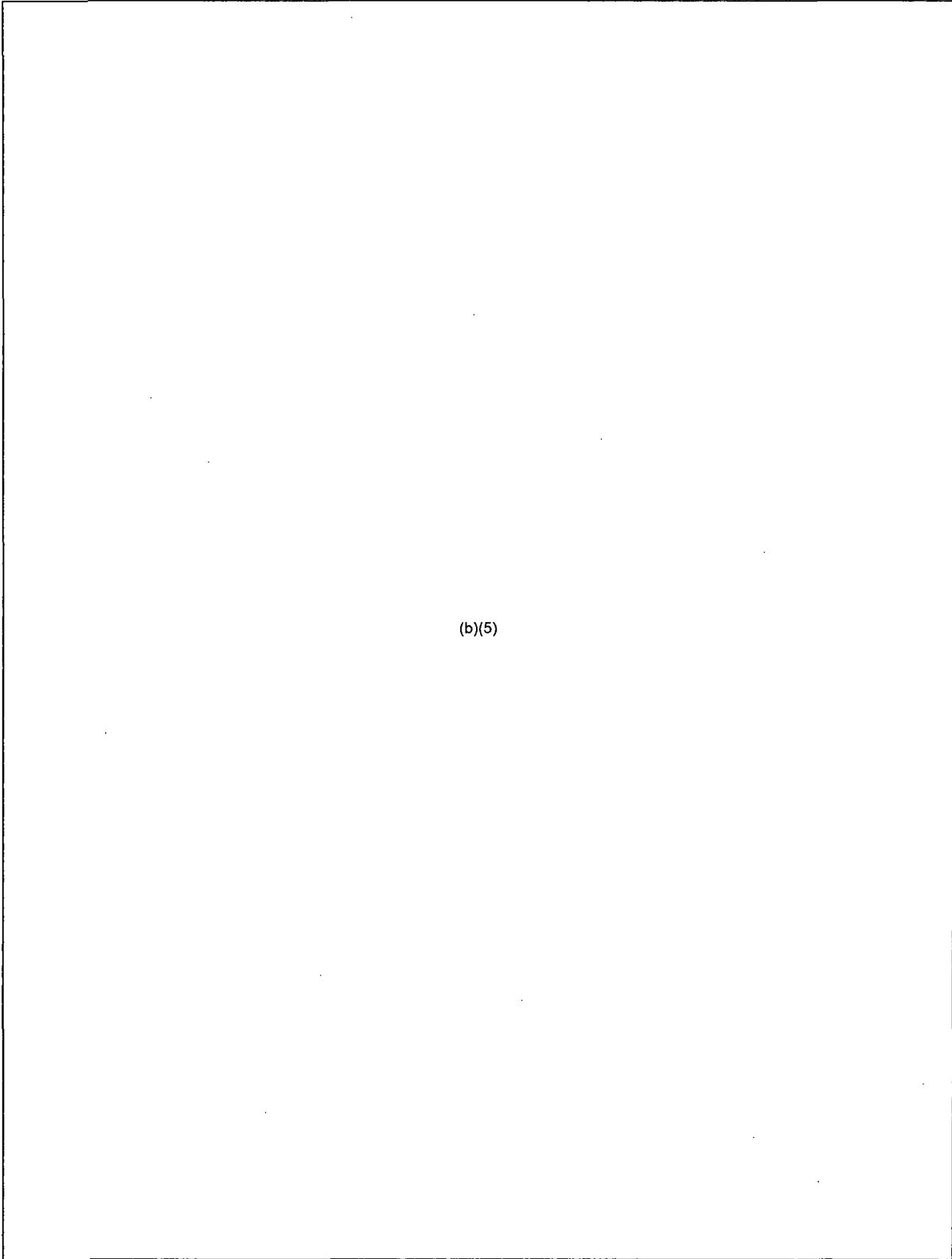
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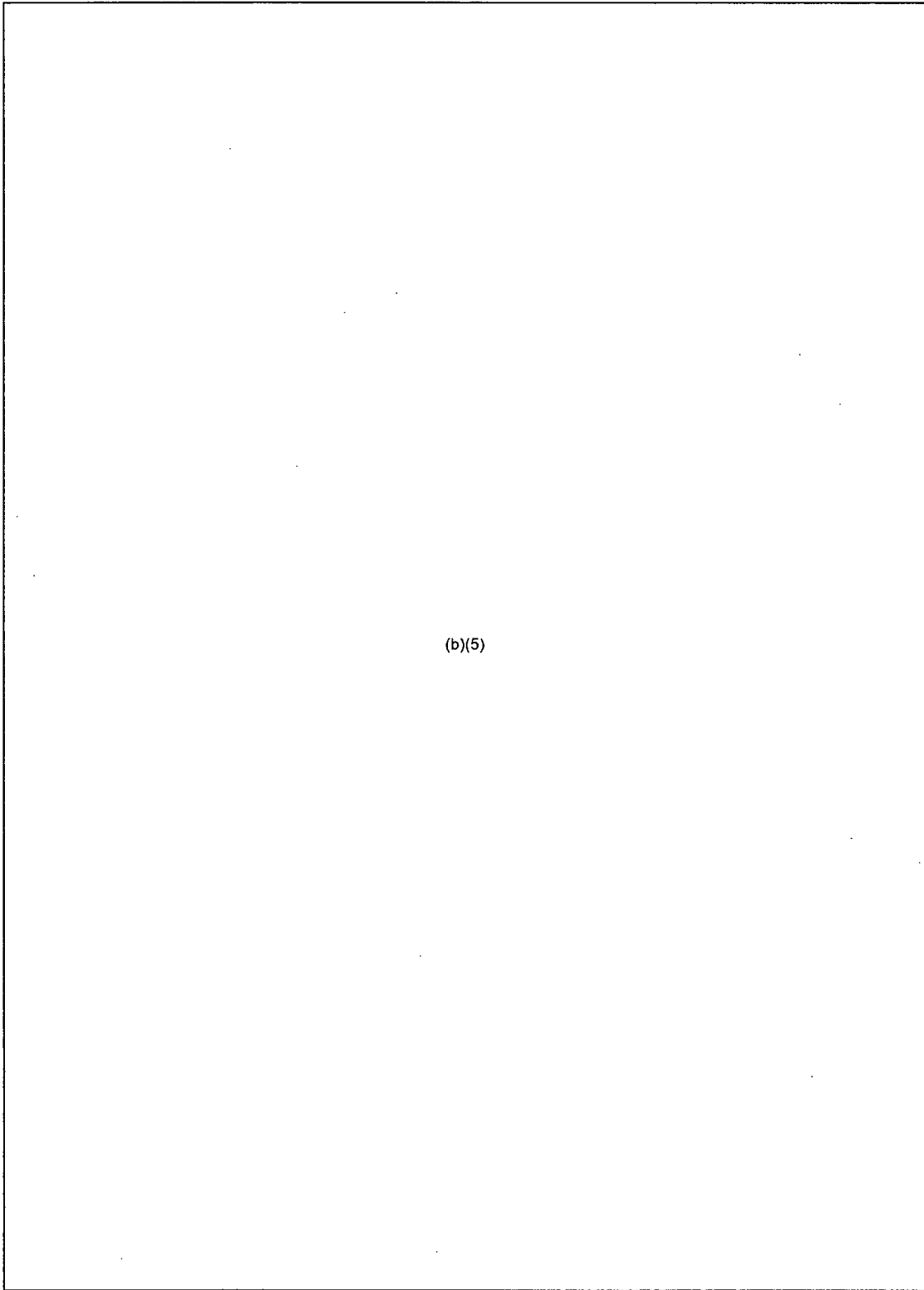
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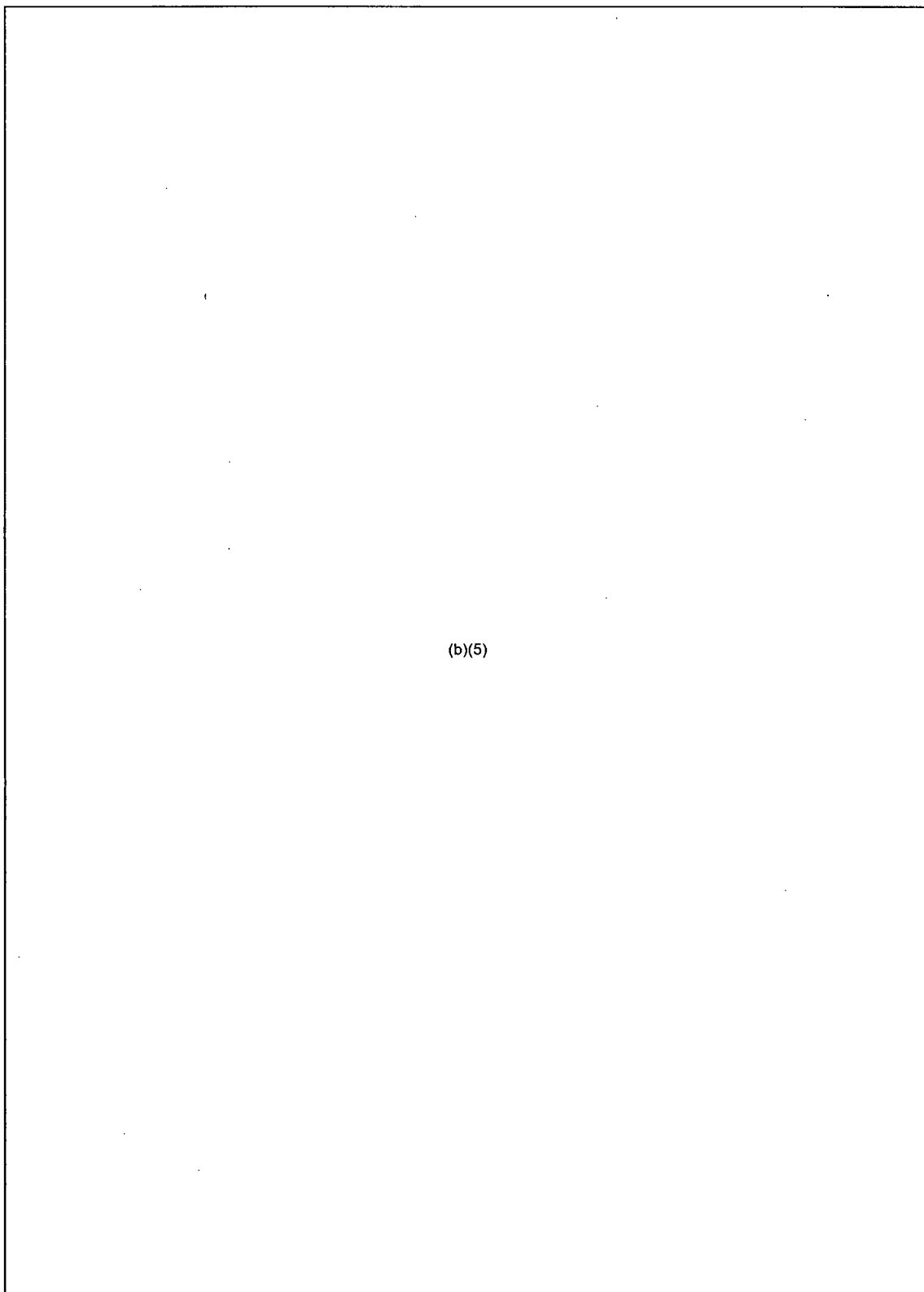
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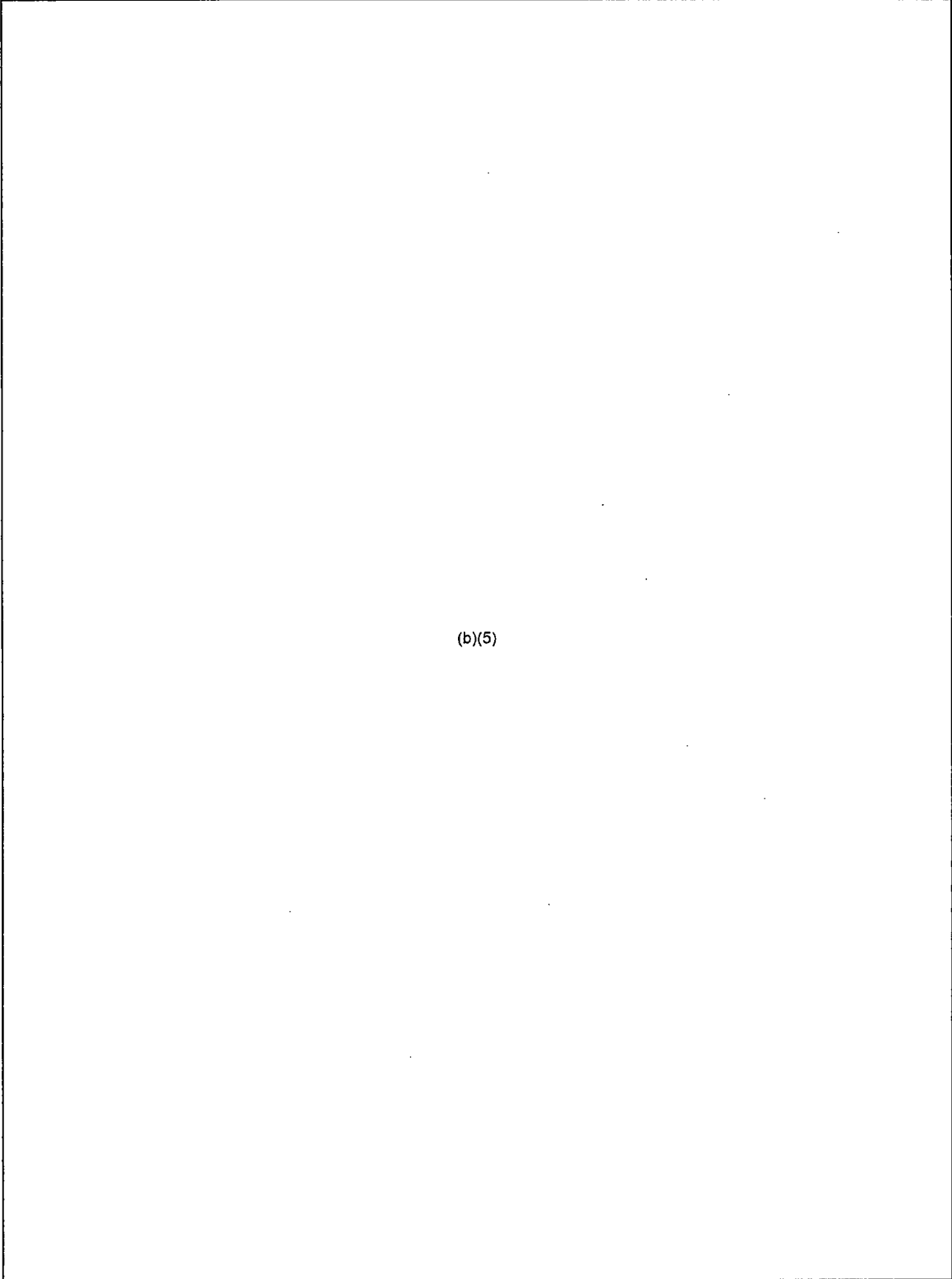
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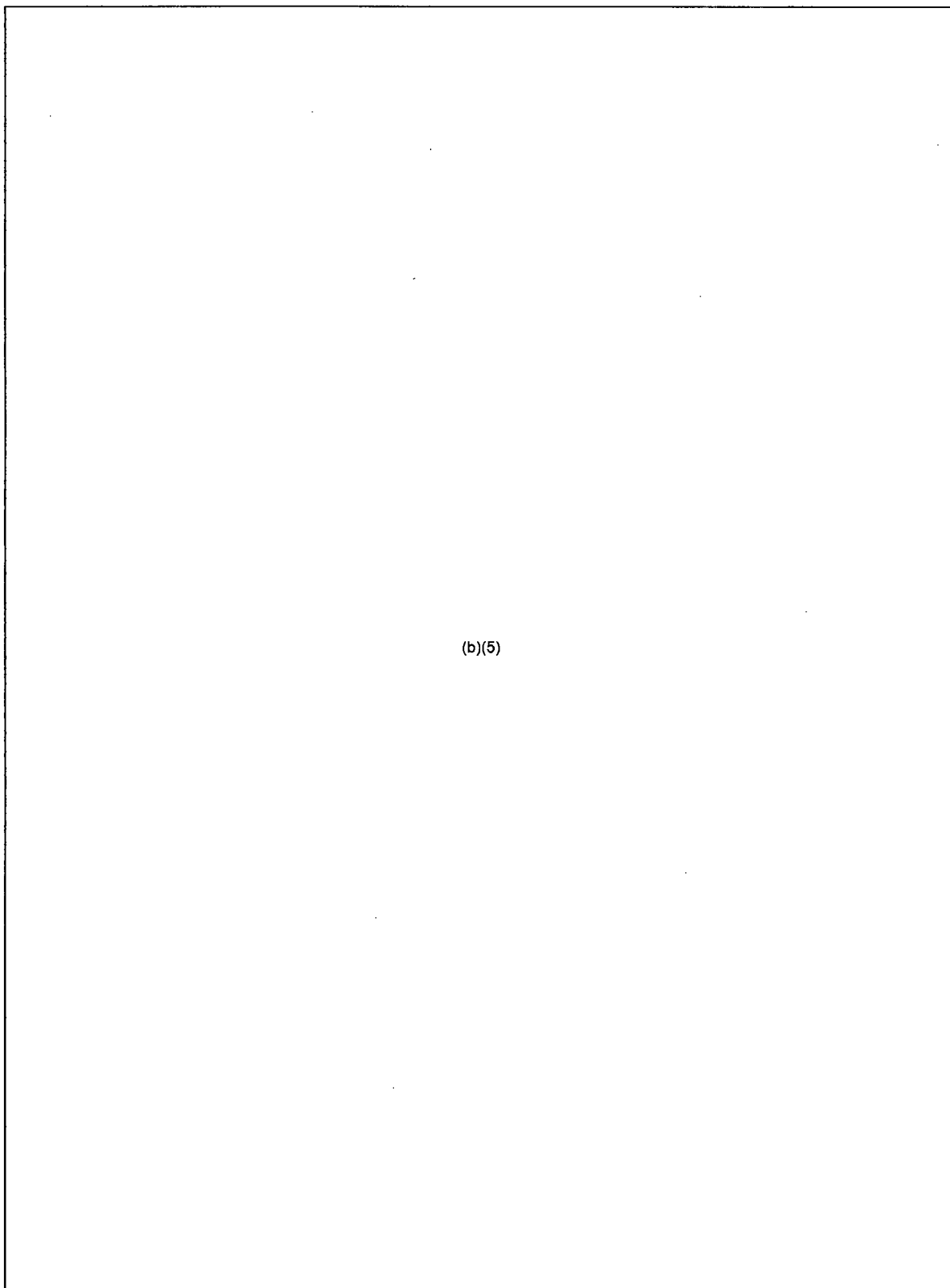
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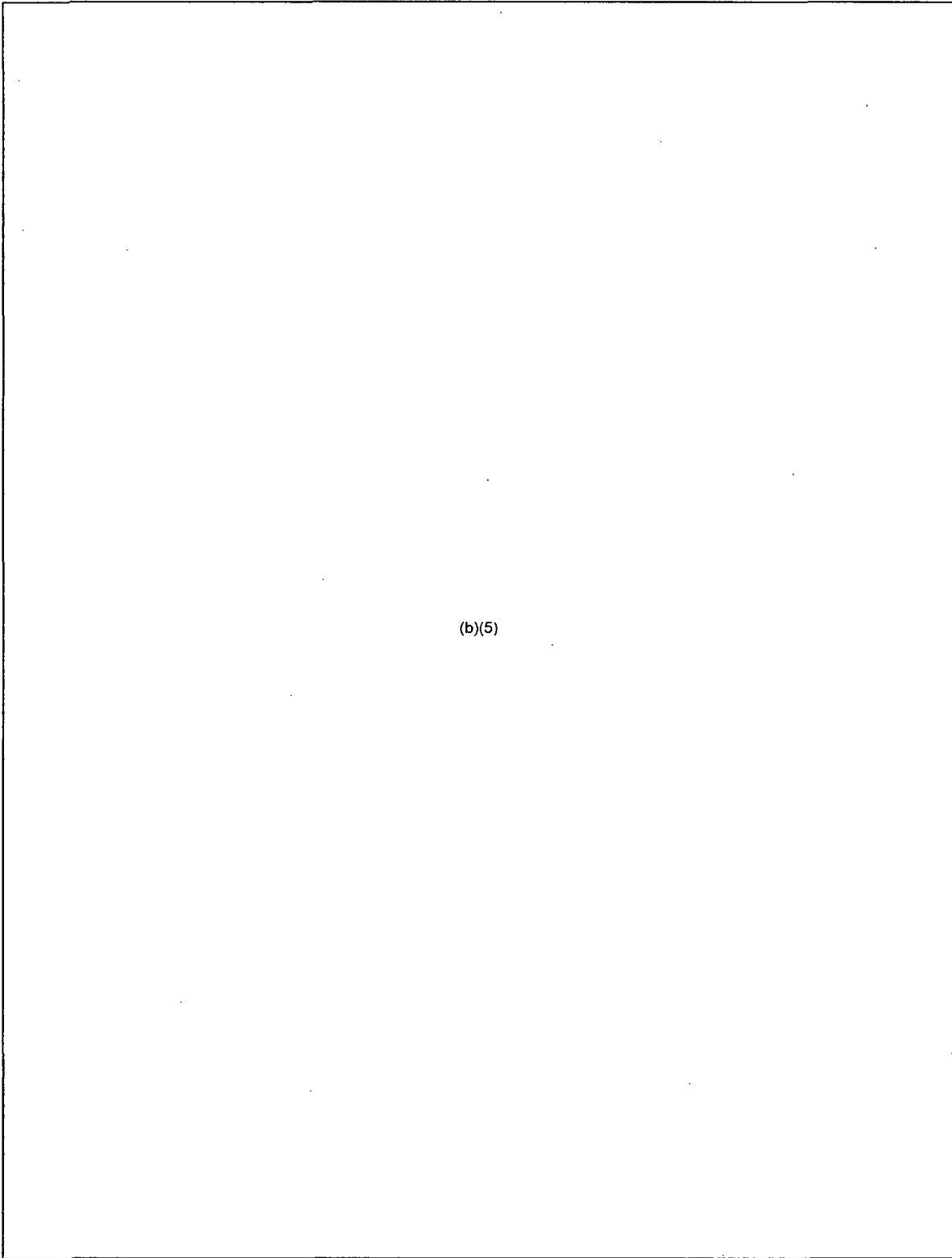
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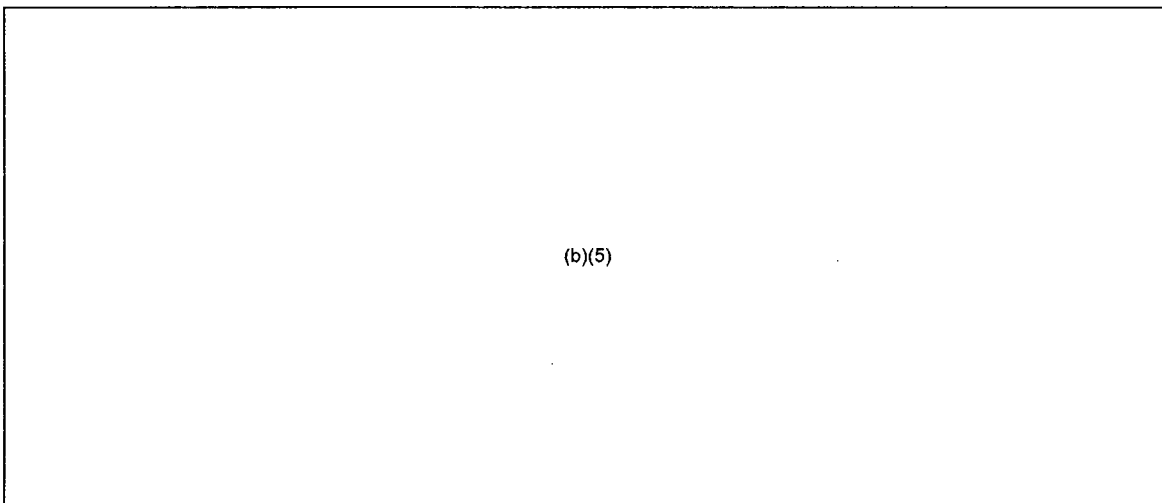
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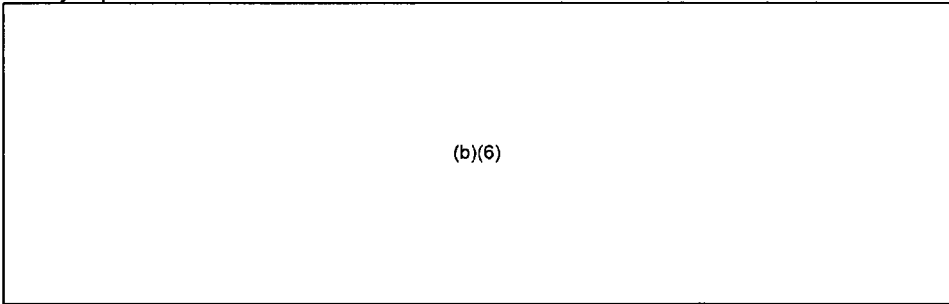


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From: RST01 Hoc
Sent: Friday, April 22, 2011 3:46 PM
To:



Subject: RST Assessment, Rev.2
Attachments: RST Assessment Document Sigmon Redraft 4-22-2011_clean.docx

Everyone,
Attached is the latest RST Assessment, Rev.2 that needs to be concurred on by the consortium. Don't be alarmed if the numbers relating to the status of the units are not updated yet. We have yet to determine how to handle it, since the data changes often. If that is the only comment then that would be fantastic. Please, if you find a big sticking point then bring it to our attention ASAP, even if it is over the weekend. We can figure out if we want to bring people in. Thanks for all your effort!!
Tim Kolb
RST

From: RST01 Hoc
Sent: Friday, April 22, 2011 10:36 AM
To: RST01B Hoc
Subject: FW: Some layout drawings and P&IDs for 1F1
Attachments: 1F1, RWCU (729E466).pdf; 1F1, Shutdown reactor Cooling System (729E484).pdf; 1F1, SLC (161F259).pdf; 1F4 RFF Laydown.pdf; 1F4_FPC_PID.pdf; 1FX, CRD Hydraulic (104R944).pdf; 1FX, Reactor Internal Data (729E257_0).pdf; 1FX, Reactor Vessel and Reculation Loop Data (729E523).pdf; 730E427C STD Plant Containment Drawing 1F1 Type[1].pdf; 1F1, 1F2, 1F3, Assorted Reactor Building Elevations.pdf; 1F1, Atmospheric Control System (161F278).pdf; 1F1, Containment Spray Cooling System (148F709).pdf; 1F1, Core Spray System (919D677).pdf; 1F1, Fuel Pool Cooling (729E483r5).pdf; 1F1, HPCI (729E465 sh1).pdf; 1F1, HPCI (729E465 sh2).pdf; 1F1, Isolation Condenser System (729E503).pdf

From: Marksberry, Don
Sent: Thursday, April 21, 2011 1:42 PM
To: RST01 Hoc
Subject: Some layout drawings and P&IDs for 1F1

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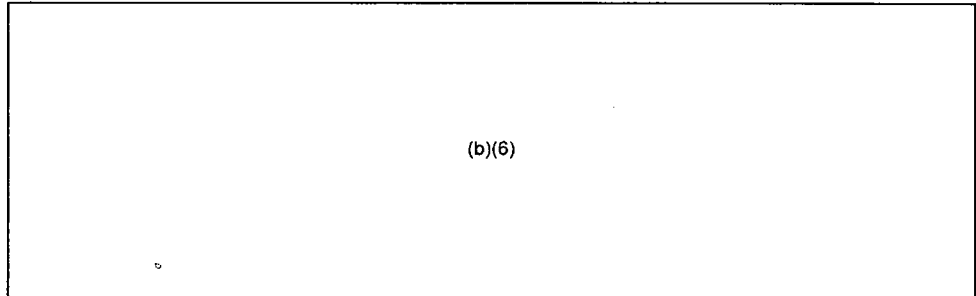
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From: RST01 Hoc
Sent: Friday, April 22, 2011 7:06 AM
To:



Subject: FW: TEPCO Earthquake Information Update on April 18
Attachments: image001.jpg; image002.emz; image004.png; ATT00001.txt; image007.jpg; image008.jpg; image009.jpg; image005.emz; image002.emz; image005.emz; image002.emz; image003.png

From: Mitman, Jeffrey
Sent: Friday, April 22, 2011 6:34 AM
To: RST01 Hoc
Subject: FW: TEPCO Earthquake Information Update on April 18

I believe someone was asking question at the 4 pm (Japan time) status call regarding isotopic concentrations in spent fuel pools other than Unit 4. The below gives information on Unit 2's SFP. Please forward on to any interested parties not here in Japan.

Thanks.

Jeff Mitman

From: Wittick, Brian
Sent: Tuesday, April 19, 2011 12:41 PM
To: Liaison Japan
Subject: FW: TEPCO Earthquake Information Update on April 18

From: 松尾 建次 [mailto:matsuo.kenji@wash.tepco.com] **On Behalf Of** matsuo.kenji@tepco.co.jp
Sent: Monday, April 18, 2011 2:17 PM
To: matsuo.kenji@tepco.co.jp
Subject: TEPCO Earthquake Information Update on April 18

Dear Friends,

Here are updates at Fukushima Daiichi NPS:

- (1) Result of radioactive material analysis of unit 2 spent fuel pool.
- (2) Results of dose, temperature, humidity and oxygen density measurement by robots in the reactor buildings of unit 1 and 3.

Contacts:
 TEPCO Washington Office 202-457-0790
 Kenji Matsuo, Director and General Manager
 Yuichi Nagano, Deputy General Manager,
 Masayuki Yamamoto, Manager, Nuclear Power Programs

(1) Result of Nuclide Analysis in the Skimmer Surge Tank Water of Unit 2

On April 16th 2011, TEPCO sampled approx. 400ml of water from the water flowed from the spent fuel pool to the skimmer surge tank. The purpose of the sampling is to check the condition of the water in the pool, in order to design temporary cooling equipment for the spent fuel pool of unit 2.

From the result of nuclide analysis of the water in the skimmer surge tank, radioactive materials have been detected as shown below.

- Date of sample collection: April 16, 2011
- Date of analysis: April 17, 2011
- Analysis result

Nuclide	[Half life]	Density (Bq/cm ³)
Cesium 134	Approx. 2 years	160,000
Cesium 137	Approx. 30 years	150,000
Iodine 131	Approx. 8 days	4,100

- Radiation dose of the sampled water: Approx. 3.5 mSv/h (radiation dose on the surface of container)

* In addition to the above nuclide, approx. 4,000 Bq/cm³ of cesium 136 (half life is approx. 13 days) was detected. Detailed valuation will be conducted hereafter.

[Comments]

It is not easy to evaluate this result, but we assume most of radioactive nuclide from PCV of unit 2 have dissolved in the form of condensate and/or dust. Because there are short half-life nuclides such as I-131 and Cs-136 usually not exist in the spent fuel after at least 200 days of storage.

We do not think fuels in the pool are seriously damaged based on the fact that the water level in the spent fuel pool is maintained periodical water injection through SPC, no damage in the reactor building and the decay heat from the unit 2 spent fuel is much lower than unit 4.

[Reference 1] Result of nuclide analysis of the water in the spent fuel pool of Unit 2, measured on February 10, 2011, before the accident

Nuclide	[Half life]	Density (Bq/cm ³)
Cesium 134	Approx. 2 years	N.D.
Cesium 137	Approx. 30 years	0.28
Iodine 131	Approx. 8 days	N.D.

[Reference 2] Comparison between unit 2 and unit 4 Spent Fuel Pool

Nuclide	[Half Life]	Density (Bq/cm ³)		Factor (a/b)
		Unit 2 Result (4/17) a	Unit 4 Result (4/13) b	
Cesium 134	Approx.2Years	160,000	88	x1,800
Cesium 137	Apporx.30Years	150,000	93	x1,700 倍
Iodine 131	Apportx,8days	4,100	220	X19

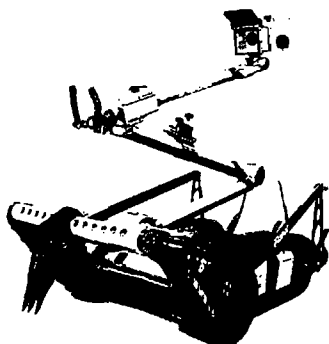
[Reference 3] Decay heat in the spent fuel pool in units 1 – 4 as of April 15

Unit	Decay Heat (kcal/h)	Evaporation (ton/day)
1	1.5×10 ⁵	5
2	5.0×10 ⁵	21

(b)(5)

(2) Results of dose, temperature, humidity and oxygen density measurement by robots in the reactor buildings of unit 1 and 3

On April 17, TEPCO conducted field survey in the reactor building of units 1 and 3. We deployed two Packbot (iRobot) for measuring dose, temperature, humidity and oxygen density. We will continue field survey at unit 2.



Packbot (Manufacture: iRobot)
【Spec】
Dimension [cm]: L 70× W 53× H18 (with arm folded)
Weight [kg]: 35
Function: Monitoring (Dose, Temperature, Humidity, Oxygen), Camera, Manipulator

4:40 – 5:30 pm, April 17
1 side double entry door to elevator
0 mSv/hr

Temperature: about 28-29 °C
Humidity: about 49-56 %
Oxygen: about 21%

(b)(5)

< Unit 3 Reactor Building > 11:30 am – 1:30 pm

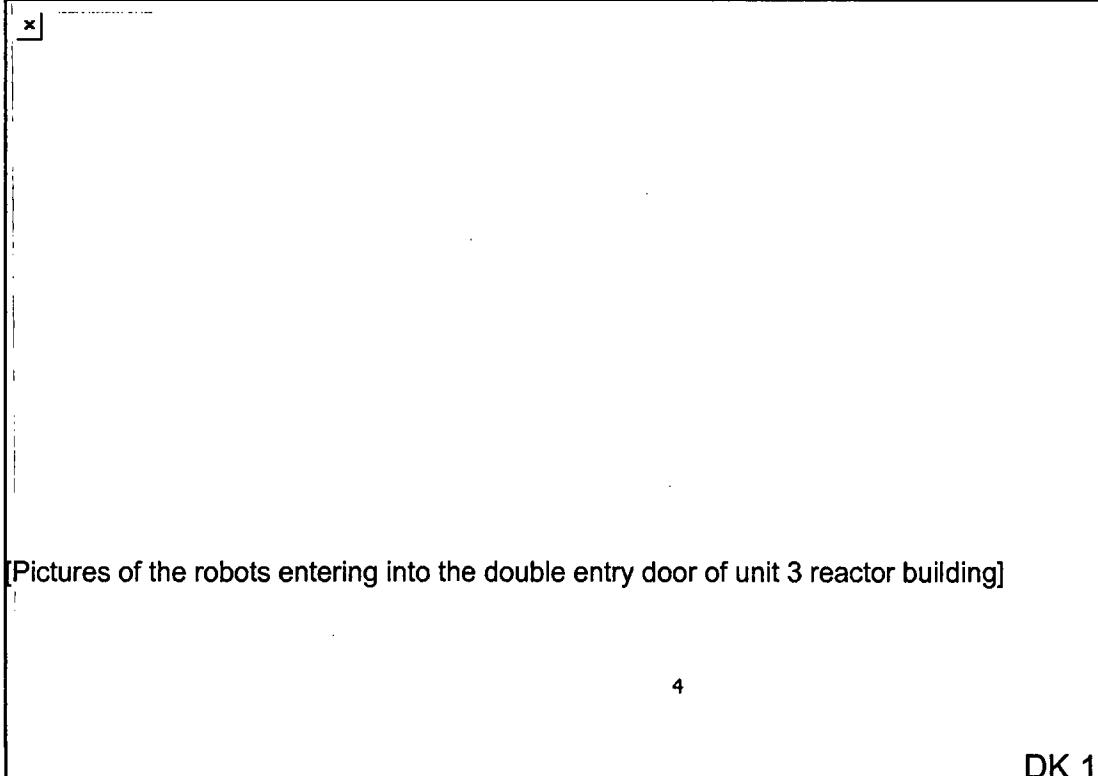
Area: Reactor building south side double entry door (the robots were not able to proceed further away from the door due to many obstacles in the area)

Dose: Max 57 mSv/hr, min 28 mSv/hr

Temperature: about 19-22 C

Humidity: about 32-35 %

Oxygen: about 21%



[Pictures of the robots entering into the double entry door of unit 3 reactor building]



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by a drop-attachments-by-name filter rule on the host
<mail2.nrc.gov>.

From: Garchow, Steve
Sent: Thursday, April 21, 2011 6:38 PM
To: Mitman, Jeffrey; Moore, Carl; Lupold, Timothy; Norwood, Donald
Subject: FW: RST 11am call Minutes
Attachments: Minutes from the April 21 1100 call.docx

From: RST01 Hoc
Sent: Thursday, April 21, 2011 3:52 PM

To: (b)(6)

(b)(6)

Subject: RST 11am call Minutes

Here are the minutes from the 11am call today.

Thanks to all for participating, I thought today's call was very informative.

Let me know if I missed anything.

Thanks,

Mike

Mike Brown
Reactor Safety Team

1. How to process large volumes of highly contaminated dirty (oil, sludge, debris, etc) water? Methods to process highly contaminated waste water in large volumes is of the highest priority.

- a.

(b)(5)
- b.

2. What are possible alternative methods of adding N2 purge to Unit 3 RPV and Containment, given that the N2 equipment in the reactor building is inaccessible due to debris and equipment damage plus very high radiation?

- a.

(b)(5)
- b.

3. What instrumentation should TEPCO use to determine containment level when flooding up?

- a. A number of ideas were presented.

(b)(5)

- 1.
2.

(b)(5)
- 3.

4. What are possible flowpaths from the Unit 2 reactor building to the turbine building

a.

b.

(b)(5)

(b)(5)

5. What are possible methods of stopping the flow of water out of Unit 2? Also, need to provide suggestions of determining where the water is coming from?

a. See suggestion above

6. Regarding the TEPCO road map, what are the end states and how would they know they have completed step 1 and step 2?

a.

b.

(b)(5)

7. Attached is the Spreadsheet that gives various trends of Unit 1 data, along with 2 pdf files also containing plant data. INPO is going to check with TEPCO to see if it is acceptable to continue to provide this data to the technical consortium.

(b)(5)

8. Here is a list of systems that the RST would like to obtain P&IDs for. GEH is to check to see if they have copies of P&IDs for these systems for Units 1 and 2 and provide them to the consortium if possible.

Systems – Note Names of Systems were taken from U.S. Plant P&ID's from a BWR 4

- 1.
- 2.
- 3.
- 4.
5. (b)(5)
- 6.
- 7.
- 8.
- 9.

GEH indicated that they would provide the drawing by close of business today. Received Unit 1 drawings and forwarded them to the consortium.

9. Feedback is desired on Assessment of the Spent Fuel Pool of Fukushima Daiichi Unit 4. Specifically, what do we think caused the explosion on Unit 4? Do we think any of their 4 scenarios are plausible or do we have any different theories that should be investigated?

- a. (b)(5)

- 1.
2. (b)(5)
- 3.

- (b)(5)

RST Mid night shift analysis - was U4 building and SFP damaged from U3 explosion and or missile that caused leakage or increased an existing leak path from the pool? Pool boiled off, H2 generation that caused explosion that failed the gate in the fuel canal refilling the SFP. H2 from U3 is unlikely due to safety features that isolate normal bld ventilation dampers on loss of power. Water sample may be suspect due to water stagnation

10. Just wanted to provide you with an update on dealing with contaminated water. Apparently, the contract signed was not a project contract but more of an agreement of understanding between AREVA and TEPCO to pursue the concept of high volume water processing.

- a.
- b. (b)(5)

(b)(5)

RST Mid night shift analysis- Water processing should emphasis getting to a stable Rx condition with plants in cold shutdown using a method that recircs rather than injects water into the plant. Using plant piping that could be rigged from outside sources of pumps and heat exchangers.

Short Term strategies to process water on-site –

- 1)
 - 2)
 - 3)
- (b)(5)

11. Any update on GEH accident progression analysis of vessel breach (GEH Analysis and NRC analysis). NRC is waiting to received detailed data from TEPCO via GEH to further refine their analysis.

- a. Analysis done, waiting on ok from TEPCO to release.

12. Update on the RST Assessment document

- a. NRC is revising the assessment, nothing to be done by the consortium until next week.

13. Any other items we need to discuss?

- a. New item from Japan team –

- How do they get water out of the DW or RPV after they have flooded up to TAF?

- 1. This item was discussed and a number of suggestions were made, GEH indicated that they would write down a list of suggestions and provide it to us.

- 2. Suggestions included:

- a.
 - b.
 - c.
 - d.
 - e.
 - f.
- (b)(5)

- i. [Redacted]
- ii. [Redacted]

14. Followup items from 11am:

- a. [Redacted]
- b. [Redacted]

From: RST01B Hoc
Sent: Thursday, April 21, 2011 1:03 PM
To: Hasselberg, Rick
Subject: FW: Response Technical Tools - Quick Check of Sandia Submittal 01-12-11.pptx
Attachments: RT Tools CD.jpg; Quick Check of Response Tools 01-12-11.pptx

From: RST01B Hoc
Sent: Wednesday, January 12, 2011 9:44 AM
To: Munday, Joel
Cc: Grant, Jeffery
Subject: Response Technical Tools - Quick Check of Sandia Submittal 01-12-11.pptx

Joel,

FYI. I'm sending you a copy of some PowerPoint slides that I've prepared to brief the group on our efforts to update the Response Technical Manual (RTM).

We received a submittal (CD) from Sandia NL yesterday, and the PP slides display some of the results from my initial review. Thanks.

Rick Hasselberg



Selected Plant

Select Plant Filter Options

Limerick 2

Response Technical Tools

Reactor Core Damage Assessment

Select a reactor from the tree at the left to begin, or click Next to work with the currently-selected reactor.

Choose an Evaluation Method.

Control Panel

Core Damage Assessment

Critical Safety Functions Assessment

Evaluation of Water Injection

Evaluation of Sub-Cooling Margin

Evaluation of PWR SG Dry Out and Boil D

Evaluation of Core Once Uncovered

Evaluation of Containment Radiation

Evaluation of Containment Hydrogen

Evaluation of Source Range Counts

Spent Fuel Pool Damage and Consequence

Evaluation of Spent Fuel Pool Damage

- Consequence Assessment Using Event T

Record Dose

Write Assessment

Resources

Flammability and Detonation Ranges

- Figures

Water Injection (0-24 hours)

Water Injection (1-30 days)

Direct Radiation Dose Estimate

Saturation Table

Summary of Core Damage Indicators

Summary Screen

Core Damage Assessment

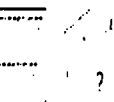
- Assessment of Critical Safety Functions
- Evaluation of Water Injection
- Evaluation of Sub-Cooling Margin
- Evaluation of PWR Steam Generator Dry Out and Boil Down Times to Core Uncc
- Evaluation of Core Once Uncovered
- Evaluation of Containment Radiation
- Evaluation of Containment Hydrogen
- Evaluation of Source Range Counts

Spent Fuel Pool Damage and Consequence Assessment

- Evaluation of Spent Fuel Pool Damage
- Consequence Assessment Using Event Trees

Resources

- Flammability and Detonation Ranges for Hydrogen-Air-Steam Mixture
- Summary of Core Damage Indicators
- Saturation Table





Selected Plant

Select Plant Filter Options

Wolf Creek

Control Panel

- Core Damage Assessment

Critical Safety Functions Asses

Evaluation of Water Injection

Evaluation of Sub-Cooling Mar

Evaluation of PWR SG Dry Out

Evaluation of Core Once Unco

Evaluation of Containment Rad

Evaluation of Containment Hyd

Evaluation of Source Range C

+ Spent Fuel Pool Damage and Cor

- Resources

Flammability and Detonation P

- Figures

Water Injection (0-24 hours)

Water Injection (1-30 days)

Direct Radiation Dose Estim

Saturation Table

Summary of Core Damage Indi

Summary Screen

Evaluation of Sub-Cooling Margin

Determine if water at a given pressure and temperature is boiling, and calculate the sub-cooling margin. This screen uses the methodology shown in figures A-1 and A-2 to determine the minimum amount of water that must be injected to replace water lost by boiling (resulting from decay heat) for a 3000-MW(t) plant based on the time since shutdown. Note that actual data was not used; figures were digitized. You should treat this as approximate data and verify using actual data wherever possible.

Record primary system pressure.

2250 psia

Saturation Temperature: 654.76 F

Record primary coolant temperature.

555 F

Sub Cooling Margin: -356.32 (Degrees)

Incorrect Calculation

A negative sub-cooling margin in a PWR indicates that water is boiling in the reactor vessel and that the core may be uncovered.



Any time
> 1 day
results in
"0" gpm.

Evaluation of Water Injection

Determine the amount of water that must be injected into a LWR core to replace the water lost by boiling resulting from decay heat.

This method provides curves of the water injection rates required to remove decay heat by boiling. These curves are based on a 3000-MW(t) plant operated at a constant power for an infinite period and then shut down instantaneously. The decay heat power is based on ANSI/ASME-5.1. If the injected water is about 80 degrees Fahrenheit (27 degrees Celcius),

- Core Damage Assessment
 - Critical Safety Functions Asses
 - Evaluation of Water Injection
 - Evaluation of Sub-Cooling Man
 - Evaluation of PWR SG Dry Out
 - Evaluation of Core Once Unco
 - Evaluation of Containment Rad
 - Evaluation of Containment Hyd
 - Evaluation of Source Range C
- + Spent Fuel Pool Damage and Cor
- Resources
 - Flammability and Detonation R
 - Figures
 - Water Injection (0-24 hours)
 - Water Injection (1-30 days)
 - Direct Radiation Dose Estim
 - Saturation Table
 - Summary of Core Damage Indi
 - Summary Screen

Time since reactor shutdown: 24 hours ?

Minimum required water injection (gal:min): 0

Adjust injection rate for the size of this plant by entering MW(t) below:

MW(t) for this plant: 3563

Minimum water injection for this plant (gal:min): 0

Amount of water actually being injected (gal:min): 150

Incorrect
Calculation



Selected Plant

Select Plant Filter Options

Wolf Creek

Evaluation of Water Injection

Determine the amount of water that must be injected into a LWR core to replace the water lost by boiling resulting from decay heat.

This method provides curves of the water injection rates required to remove decay heat by boiling. These curves are based on a 3000-MW(t) plant operated at a constant power for an infinite period and then shut down instantaneously. The decay heat power is based on ANSI/ANS-5.1. If the injected water is about 80 degrees Fahrenheit (27 degrees Celcius),

Control Panel

Core Damage Assessment

Critical Safety Functions Asses

Evaluation of Water Injection

Evaluation of Sub-Cooling Man

Evaluation of PWR SG Dry Out

Evaluation of Core Once Unco

Evaluation of Containment Rad

Evaluation of Containment Hyd

Evaluation of Source Range C

Spent Fuel Pool Damage and Cor

Resources

Flammability and Detonation P

- Figures

Water Injection (0-24 hours)

Water Injection (1-30 days)

Direct Radiation Dose Estim

Saturation Table

Summary of Core Damage Indi

Summary Screen

Time since reactor shutdown: 1 days ?

Minimum required water injection (gal:min): 89

Adjust injection rate for the size of this plant by entering MW(t) below:

MW(t) for this plant: 3563

Minimum water injection for this plant (gal:min): 106

Amount of water actually being injected (gal:min): 150

More reasonable calculation



Selected Plant

Select Plant Filter Options

Wolf Creek

Evaluation of PWR SG Dry Out and Boil Down Times to Core Uncovery

Note: This screen is not yet fully functional.

Estimate times to steam generator dry out, bulk boiling, and uncovery of top of active fuel for PWRs. The estimates are based on 1998 RELAP5/Mod3 models of 2300 MW(t) Westinghouse and 2500 MW(t) B&W Plants.

The analyses assume the following:

Control Panel

- Core Damage Assessment

Critical Safety Functions Asses

Evaluation of Water Injection

Evaluation of Sub-Cooling Man

Evaluation of PWR SG Dry Out

Evaluation of Core Once Unco

Evaluation of Containment Rad

Evaluation of Containment Hyd

Evaluation of Source Range Cr

+ Spent Fuel Pool Damage and Cor

- Resources

Flammability and Detonation P

- Figures

Water Injection (0-24 hours)

Water Injection (1-30 days)

Direct Radiation Dose Estin

Saturation Table

Summary of Core Damage Indi

Summary Screen

Plant

Steam generator:

Avg. Fuel Temperature (est.) F:

Steam Gen
Dryout

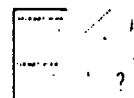
Bulk Boiling In
Core

Top of Core
Uncovery

Minutes to next event:

Accident Trends

- Loss of feedwater at full power operation ?
- Loss of feedwater 2 hours after plant shutdown ?
- Loss of coolant accident from mid-loop conditions 2 hours after shutdown ?
- Loss of core cooling (RHR) 1 week after plant shutdown ?
- Loss of core cooling (RHR) 3 months after shutdown ?





Selected Plant

Select Plant Filter Options

Wolf Creek ▼

Control Panel

Core Damage Assessment

Critical Safety Functions Asses

Evaluation of Water Injection

Evaluation of Sub-Cooling Man

Evaluation of PWR SG Dry Out

Evaluation of Core Once Unco

Evaluation of Containment Rad

Evaluation of Containment Hyd

Evaluation of Source Range C

Spent Fuel Pool Damage and Cor

Resources

Flammability and Detonation R

- Figures

Water Injection (0-24 hours)

Water Injection (1-30 days)

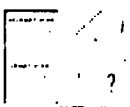
Direct Radiation Dose Estin

Saturation Table

Summary of Core Damage Indi

Summary Screen

EvaluationOfCoreOnceUncovered screen is still under development.





Selected Plant

Select Plant Filter Options

Wolf Creek

Control Panel

- Core Damage Assessment

- Critical Safety Functions Asses
- Evaluation of Water Injection
- Evaluation of Sub-Cooling Man
- Evaluation of PWR SG Dry Out
- Evaluation of Core Once Unco
- Evaluation of Containment Rad
- Evaluation of Containment Hyd
- Evaluation of Source Range C

+ Spent Fuel Pool Damage and Cor Resources

- Flammability and Detonation P
- Figures
 - Water Injection (0-24 hours)
 - Water Injection (1-30 days)
 - Direct Radiation Dose Estim
- Saturation Table
- Summary of Core Damage Indi

Summary Screen

Evaluation of Containment Radiation

Note: This screen is not yet fully functional.

Assess the core damage based on the containment radiation monitor readings.

This method uses containment radiation monitor readings to assess core damage; however, containment radiation monitor readings cannot confirm core damage in all cases. The release may bypass the containment, be retained in the primary system, be released over a long period of time, or not be uniformly mixed. Therefore, a low containment radiation reading does not guarantee a lack of core damage.

Confirm that the containment radiation monitor "sees" more than 50% of the shaded area shown in either Fig. A-3 (PWR) or Fig. A-4 (BWR). If not, this method should not be used to assess core damage.

Record the following readings:

Normal radiation monitor reading: 5 R/h

Unshielded monitor reading: 500 R/h

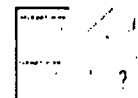
Time of reading after release into containment: 21 h

Sprays On Sprays Off

Absolute radiation rate: 495 R/h

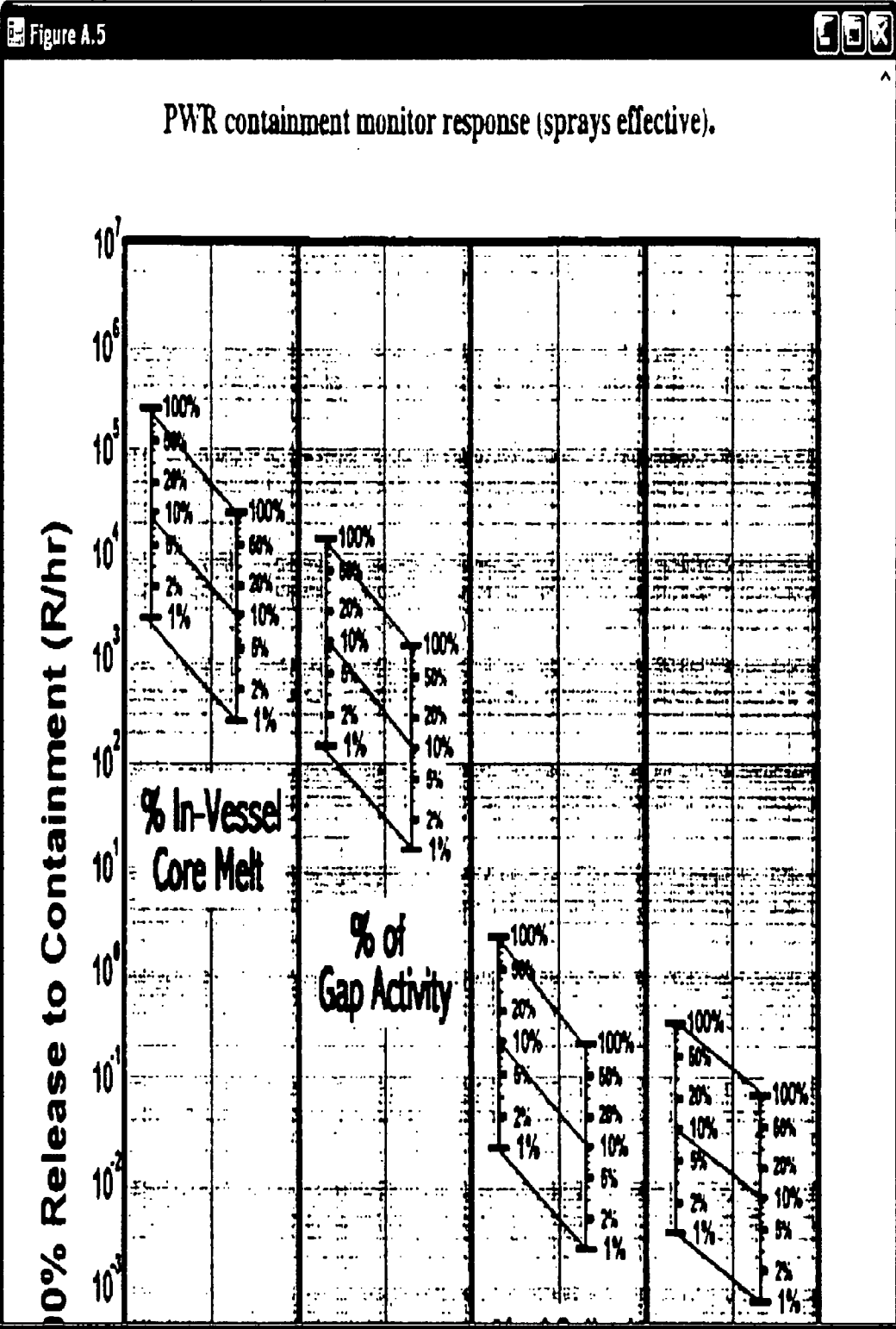
Using the absolute radiation rate calculated above and the figures below estimate the core damage.

PWR (Sprays On)



Selected Plant
 Select Plant Filter Options
 Wolf Creek

Evaluation of Containment Radiation
 Note: This screen is not yet fully functional.



Control Panel
 - Core Damage Asses
 Critical Safety Fu
 Evaluation of We
 Evaluation of Sub
 Evaluation of PW
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 Evaluation of Co
 Evaluation of Co
 Evaluation of So
 Spent Fuel Pool Da
 Resources
 Flammability and
 - Figures
 Water Injection
 Water Injection
 Direct Radiati
 Saturation Table
 Summary of Core
 Summary Screen

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 all
 m, be
 ed area
 be used



Selected Plant

Select Plant Filter Options

Wolf Creek

Evaluation of Containment Hydrogen

Assess the core damage based on hydrogen concentrations in containment samples.

This method may be used to assess the core damage based on hydrogen concentrations in samples of the containment atmosphere. Hydrogen concentrations should not be relied upon to confirm core damage in all cases.

Containment samples may require hours to collect and analyze and may not be representative of the total hydrogen generated in the core because of incomplete mixing in the containment or containment bypass.

The hydrogen concentrations used in this method are for wet samples; however, most hydrogen samples are dry (steam removed). If a dry sample concentration is used, one may overestimate considerably the level of core damage. This method assumes that all hydrogen is released to the containment and is completely mixed in the containment atmosphere.

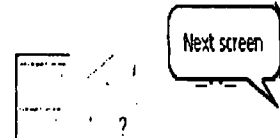
Enter a percentage of the average hydrogen wet sample concentration in the containment to estimate the percentage of metal-water reaction and determine the possible level of core damage.

1 percent

The potential core damage status is :

The results of severe accident research (research supporting NUREG-1150) were examined to identify the least percentage of metal-water reaction associated with each core damage state. Higher percentages of metal-water are possible for some accident sequences (e.g., Three Mile Island).

- Control Panel
- Core Damage Assessment
 - Critical Safety Functions Asses
 - Evaluation of Water Injection
 - Evaluation of Sub-Cooling Man
 - Evaluation of PWR SG Dry Out
 - Evaluation of Core Once Unco
 - Evaluation of Containment Rad
 - Evaluation of Containment Hyd
 - Evaluation of Source Range C
- Spent Fuel Pool Damage and Cor
- Resources
 - Flammability and Detonation P
 - Figures
 - Water Injection (0-24 hours)
 - Water Injection (1-30 days)
 - Direct Radiation Dose Estin
 - Saturation Table
 - Summary of Core Damage Indi
- Summary Screen





Selected Plant

Select Plant Filter Options

Vermont Yankee



Response Technical Tools

Reactor Core Damage Assessment

Select a reactor from the tree at the left to begin, or click Next to work with the currently-selected reactor.

Control Panel

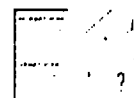
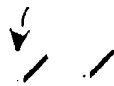
+ Core Damage Assessment

+ Spent Fuel Pool Damage and Cor

+ Resources

Summary Screen

SourceRangeCounts screen is still under development.





Selected Plant

Select Plant Filter Options

Wolf Creek

Evaluation of Source Range Counts

Note: This screen is not yet functional.

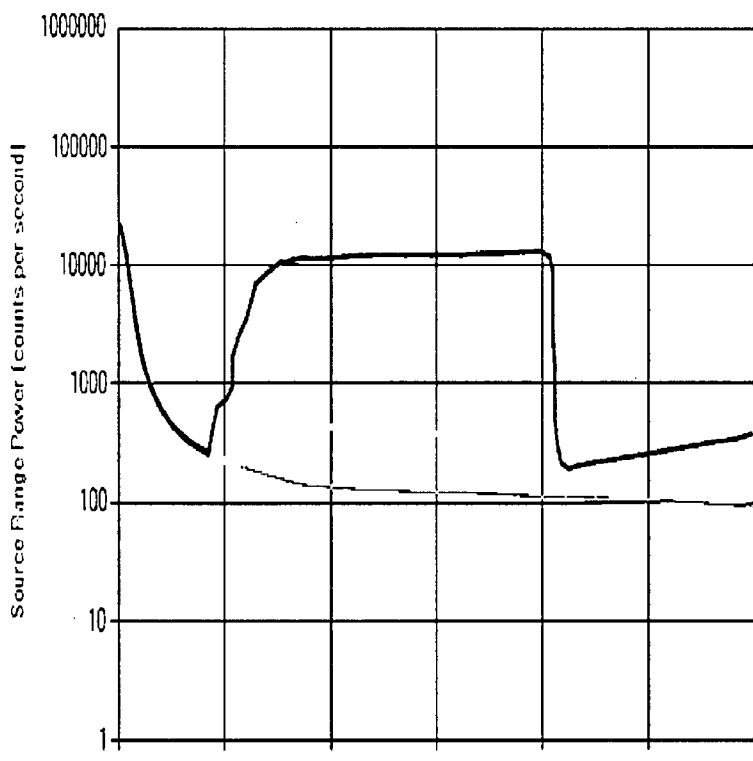
Determine if and when a BWR or PWR core has been uncovered (voided).

Source range instruments provide a measurement of the neutron flux in and around the reactor core when the reactor is shutdown. The output of the source range instruments is significantly affected by the moderator density. Boiling (voiding) in the reactor core reduces moderator density. This results in an increased amount of neutron leakage away from the core area.

Control Panel

- Core Damage Assessment
 - Critical Safety Functions Asses
 - Evaluation of Water Injection
 - Evaluation of Sub-Cooling Man
 - Evaluation of PWR SG Dry Out
 - Evaluation of Core Once Unco
 - Evaluation of Containment Rad
 - Evaluation of Containment Hyd
 - Evaluation of Source Range Ci
- + Spent Fuel Pool Damage and Cor
- Resources
 - Flammability and Detonation P
 - Figures
 - Water Injection (0-24 hours)
 - Water Injection (1-30 days)
 - Direct Radiation Dose Estin
 - Saturation Table
 - Summary of Core Damage Indi
- Summary Screen

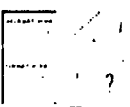
Evaluation of Source Range Counts



Site counts

Hour
*

Plot





Selected Plant

Select Plant Filter Options

Vermont Yankee

Control Panel

Core Damage Assessment

Critical Safety Functions Asses

Evaluation of Water Injection

Evaluation of Sub-Cooling Man

Evaluation of PWR SG Dry Out

Evaluation of Core Once Unco

Evaluation of Containment Rad

Evaluation of Containment Hyd

Evaluation of Source Range C

Spent Fuel Pool Damage and Cor

Resources

Summary Screen

Evaluation of Containment Hydrogen

Assess the core damage based on hydrogen concentrations in containment samples.

This method may be used to assess the core damage based on hydrogen concentrations in samples of the containment atmosphere. Hydrogen concentrations should not be relied upon to confirm core damage in all cases.

Containment samples may require hours to collect and analyze and may not be representative of the total hydrogen generated in the core because of incomplete mixing in the containment or containment bypass.

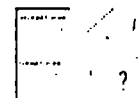
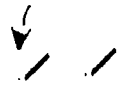
The hydrogen concentrations used in this method are for wet samples; however, most hydrogen samples are dry (steam removed). If a dry sample concentration is used, one may overestimate considerably the level of core damage. This method assumes that all hydrogen is released to the containment and is completely mixed in the containment atmosphere.

Enter a percentage of the average hydrogen wet sample concentration in the containment to estimate the percentage of metal-water reaction and determine the possible level of core damage.

1| percent

The potential core damage status is :

The results of severe accident research (research supporting NUREG-1150) were examined to identify the least percentage of metal-water reaction associated with each core damage state. Higher percentages of metal-water are possible for some accident sequences (e.g., Three Mile Island).





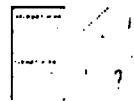
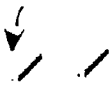
Selected Plant

Select Plant Filter Options

Control Panel

- + Core Damage Assessment
- Spent Fuel Pool Damage and Consequence Assessment
 - Evaluation of Spent Fuel Pool Damage
 - Consequence Assessment Using Record Dose
 - Write Assessment
- Resources
 - Flammability and Detonation Ranges
 - Figures
 - Water Injection (0-24 hours)
 - Water Injection (1-30 days)
 - Direct Radiation Dose Estimation
 - Saturation Table
 - Summary of Core Damage Indicators
- Summary Screen

Flammability/Detonation Ranges screen is still under development.





Selected Plant

Select Plant Filter Options

Limerick 2

Spent Fuel Pool Damage and Consequence Assessment

Assess accidents involving loss of coolant to a spent fuel pool.

Accidents involving the loss of coolant in the spent fuel pool may have offsite consequences because of damage to the fuel from overheating.

Two types of damage may occur:

- (1) a Zircaloy cladding fire resulting in substantial release of fission products from recently discharged fuel
- (2) cladding failure with release of the fission products in the fuel pin gap

Fuel damage may be prevented if 100-250 gal/min of water can be sprayed on the pool, beginning within 1 hour of draining the pool. This flow rate can be achieved with fire hoses.

Control Panel

+ Core Damage Assessment

+ Spent Fuel Pool Damage and Conse

Evaluation of Spent Fuel Pool Dar

- Consequence Assessment Using

Record Dose

Write Assessment

+ Resources

Summary Screen

Select Options (Leakage Option Not Fully Functional Yet)

Spent Fuel Inventory

No Leakage

1/3 core discharged

Q-decay: 4.21E+00 MW

Days after shutdown: 8

Time to Heat from 120 F to 212 F (100 C):

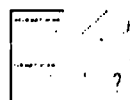
Spent Fuel Total Decay Heat Data

Time to boil off water: 129.7 (hours)

Reference BWR Spent Fuel Pt

Make-up rate for boil off: 30.8 gpm

Pool Volume (cft.): 32000





Selected Plant

Select Plant Filter Options

Limerick 2

Spent Fuel Pool Damage and Consequence Assessment

Assess accidents involving loss of coolant to a spent fuel pool.

Accidents involving the loss of coolant in the spent fuel pool may have offsite consequences because of damage to the fuel from overheating.

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Control Panel

Core Damage Assessment

Spent Fuel Pool Damage and Conse

Evaluation of Spent Fuel Pool Dar

- Consequence Assessment Using

Record Dose

Write Assessment

Resources

Summary Screen

Select Options (Leakage Option Not Fully Functional Yet)

Spent Fuel Inventory

No Leakage

1/3 core discharged

Q-decay: 3.37E+00 MW

Days after shutdown: 16

Time to Heat from 120 F to 212 F (100 C)

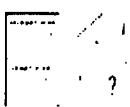
Spent Fuel Total Decay Heat Data

Time to boil off water: 162 (hours)

Reference BWR Spent Fuel P

Make-up rate for boil off: 24.6 gpm

Pool Volume (cft.): 32000





From: RST01 Hoc
Sent: Thursday, April 21, 2011 11:15 AM
To:

(b)(6)

Subject: FW: Scan of Drywell Level in Unit 1 April 15
Attachments: Scan0043.pdf

From: Garchow, Steve
Sent: Thursday, April 21, 2011 1:21 AM
To: RST01 Hoc
Subject: FW: Scan of Drywell Level in Unit 1 April 15

Trying to cleanup my email, found this, and thought it may be of interest. I thought I remembered a question on this. It is saved to the N drive. I also created an RST analysis folder that we are saving all the documents that are of an analysis flavor.

Steve

From: Gard, Lee A (INPO) [mailto:GardLA@INPO.org]
Sent: Friday, April 15, 2011 4:58 AM
To: Blamey, Alan; Wittick, Brian; Moore, Carl; Casto, Chuck; Collins, Elmo; Gauntt, Randall O; Mitman, Jeffrey; michael.call@nrc.gov; Hay, Michael; Miller, Marie; richard.kondo@crbard.com; Bernhard, Rudolph; Salay, Michael; Garchow, Steve; Steve Reynolds
Subject: Scan of Drywell Level in Unit 1 April 15

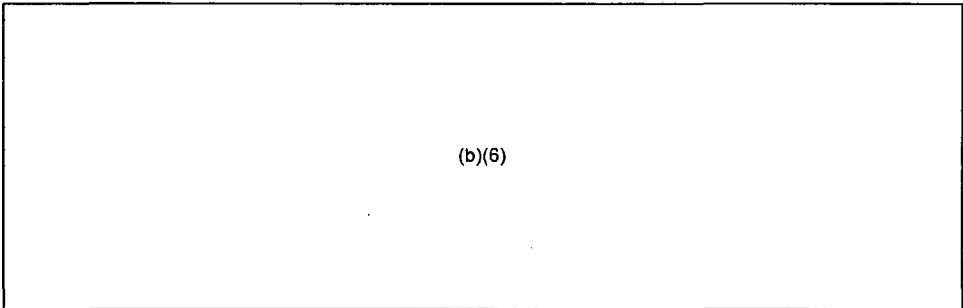
This is the document that TEPCO reported on today, with some translations added. Indications picked up that give them some confidence of estimated drywell level in Unit 1. Graph shows projected DW levels if current injection rate of 6 m3/hr is maintained and leakage rate is constant. Projects reaching TAF on April 28 for U1.

Lee Gard
INPO
cell (b)(6)
gardla@inpo.org

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(b)(5)

From: RST01 Hoc
Sent: Thursday, April 21, 2011 11:06 AM
To:



Subject: DRAFT RST Assessment Rev 2
Attachments: RST Assessment Document Collins Redraft 4-20-2011.docx

Here it is, it is only a DRAFT

From: RST01 Hoc
Sent: Thursday, April 21, 2011 10:47 AM
To:

(b)(6)

Subject: FW: Comments on TEPCO Roadmap.

-----Original Message-----

From: Peko, Damian [mailto:Damian.Peko@Nuclear.Energy.gov]
Sent: Thursday, April 21, 2011 8:32 AM
To: RST01 Hoc
Cc: Skeen, David; Shields, Martha; Larzelere, Alex; Kelly, John E (NE)
Subject: Commwents on TEPCO Roadmap.

David, et al

The Secretary's Science panel did a cursory review of the TEPCI roadmap and had the following comments/concerns:

(b)(5)

Thanks

Damian Peko

From: RST01 Hoc
Sent: Thursday, April 21, 2011 10:46 AM
To:

(b)(6)

Subject: FW: Comments on the SFP4 accident analysis.
Attachments: TEPCO Earthquake Information Update on April 14 _ Result of Spent fuel pool water sampling at unit 4.pdf; Japan Picture Translation 4-18-11.pptx

FYI

-----Original Message-----

From: Peko, Damian [mailto:Damian.Peko@Nuclear.Energy.gov]
Sent: Thursday, April 21, 2011 10:16 AM
To: RST01 Hoc
Cc: Skeen, David; Shields, Martha; Larzelere, Alex; Kelly, John E (NE); Caponiti, Alice
Subject: Comments on the SFP4 accident analysis.

David, Et al

Our topic lead for the SFP has reviewed the SFP4 accident analysis and provides the following comments/suggestions for consideration.

Thanks

Damian Peko

(b)(5)

(b)(5)

Fukushima 1 (Daiichi)

Defense Ministry
Technical Research and Development Institute
4-18-11

Measurement Conditions

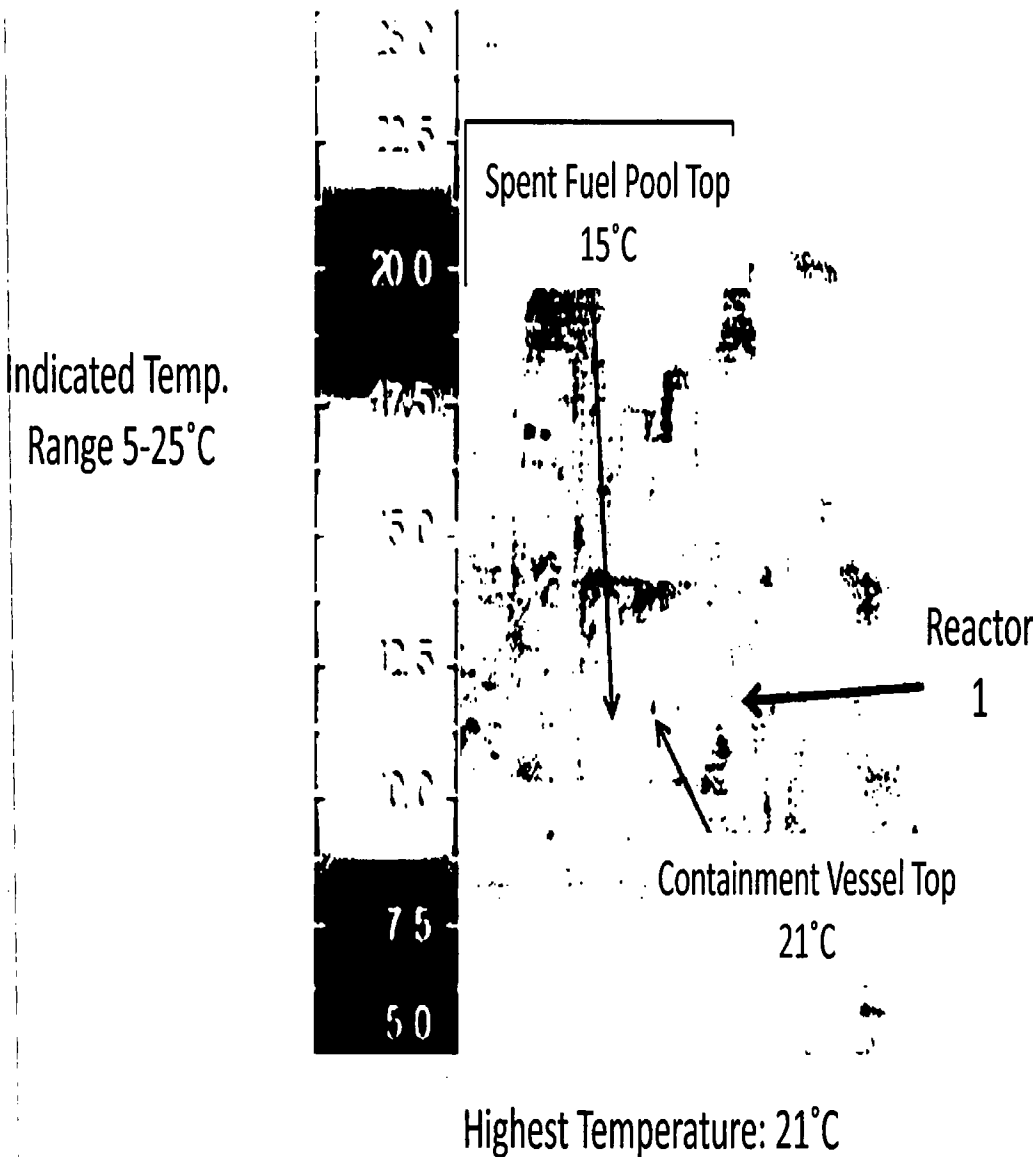
- Measurement Time: April 18 07:11-07:49
- Weather: Cloudy
- Temperature: 5°C (Fukushima Prefecture, Soma City 07:00)
- Altitude: ~3,000 ft.
- Helicopter: CH-47
- Equipment: NEC/Avio Infrared Thermography
- Photograph area: 170 m X 130 m @ 3,000 ft. altitude.
- Temperature range: 0 – 500°C

- Lens: Standard lens
- Power Source: CH-47 On Board Power

No. 1 Reactor (Highest of 5 Measurements)

Elevation: 3,000 ft

Radiative Temperature Photograph



Date	Reactor 1	
	Contain	Pool
3/20	58°C	-
3/23	38°C	17°C
3/24	17°C	13°C
3/25	41°C	21°C
3/26	23°C	23°C
3/27	22°C	21°C
3/28	32°C	19°C
3/29	34°C	17°C
3/30	30°C	16°C
3/31	16°C	10°C
4/1	23°C	18°C
4/2	16°C	23°C
4/3	18°C	25°C
4/4	19°C	18°C
4/5	26°C	18°C
4/6	29°C	24°C
4/8	33°C	23°C
4/10	19°C	16°C
4/12	17°C	26°C
4/14	33°C	36°C
4/16	33°C	34°C
4/18	21°C	15°C

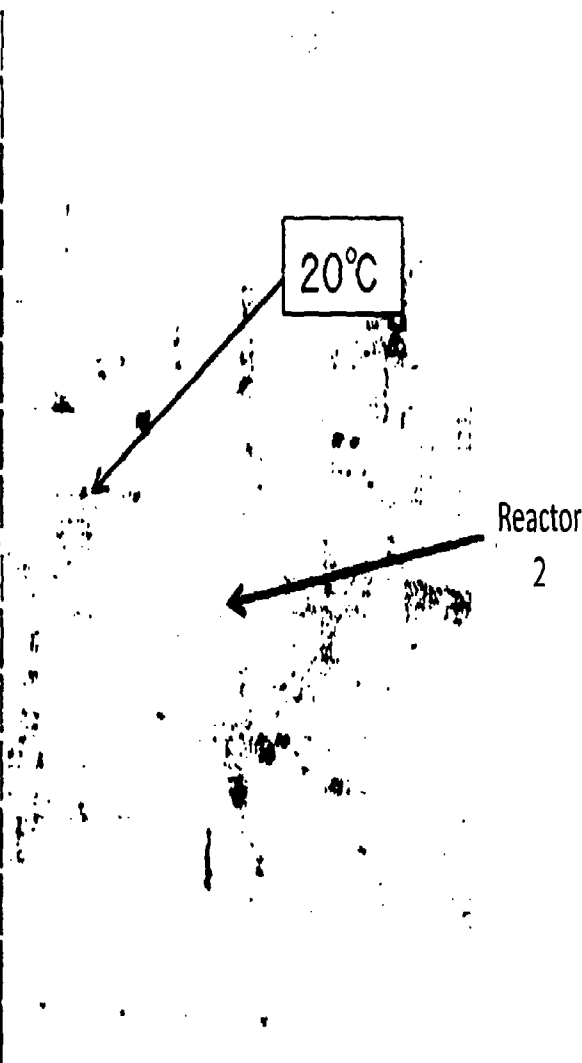
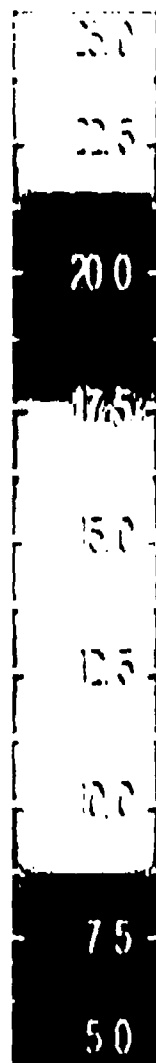
No. 2 Reactor (Highest of 5 Measurements)

Elevation: 3,000 ft

Radiative Temperature Photograph

HAN

Indicated Temp.
Range 5-25°C



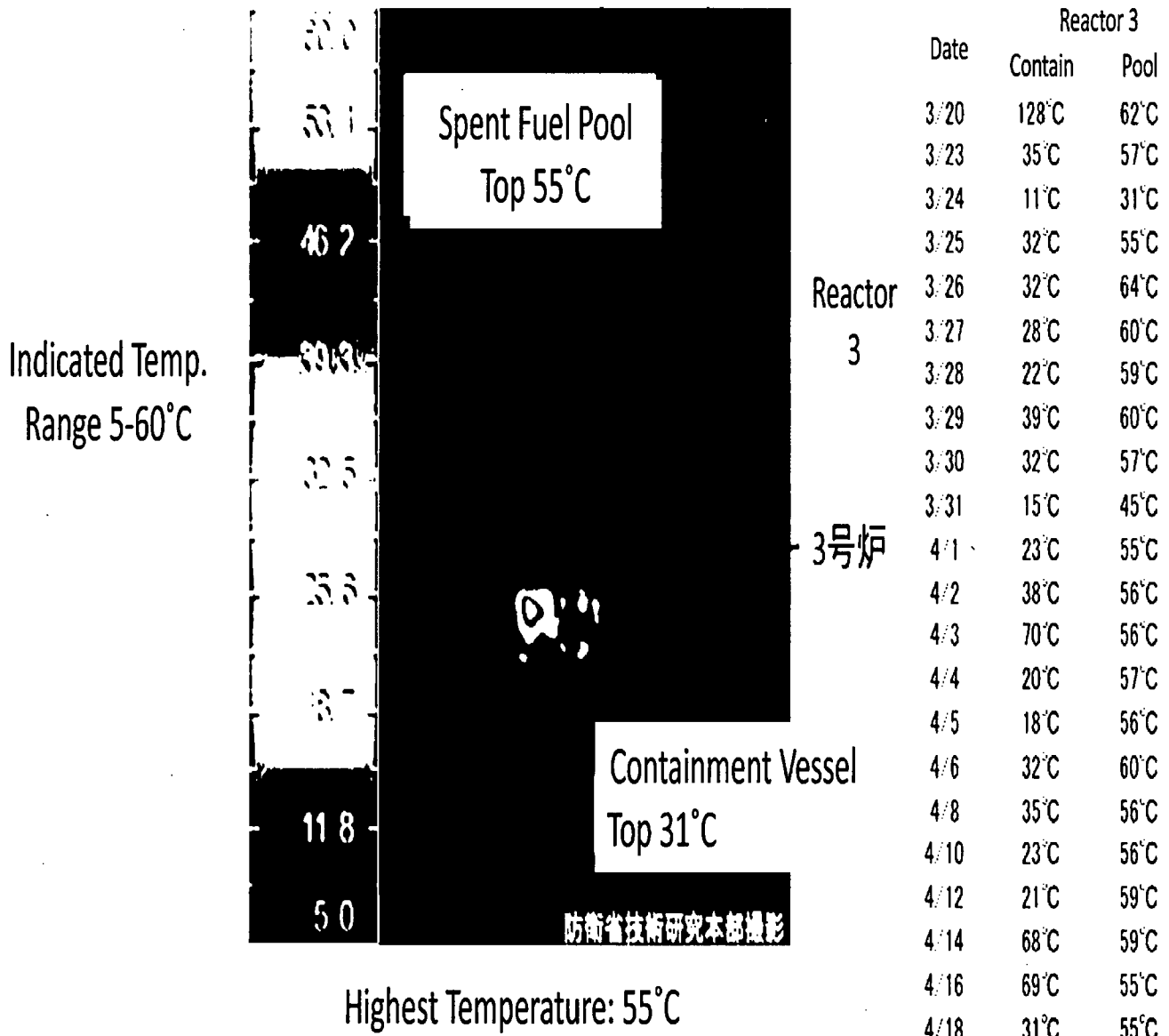
Highest Temperature: 20°C

Date	Reactor 2
3/20	35°C
3/23	23°C
3/24	13°C
3/25	27°C
3/26	28°C
3/27	22°C
3/28	24°C
3/29	20°C
3/30	29°C
3/31	13°C
4/1	26°C
4/2	31°C
4/3	30°C
4/4	28°C
4/5	28°C
4/6	32°C
4/8	30°C
4/10	25°C
4/12	28°C
4/14	31°C
4/16	36°C
4/18	20°C

No. 3 Reactor (Highest of 5 Measurements)

Elevation: 3,000 ft

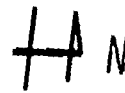
Radiative Temperature Photograph



No. 4 Reactor (Highest of 5 Measurements)

Elevation: 3,000 ft

Radiative Temperature Photograph



Indicated Temp.
Range 5-30°C

Highest Temperature: 25°C

Date	Reactor 4
3/20	42°C
3/23	28°C
3/24	17°C
3/25	24°C
3/26	42°C
3/27	35°C
3/28	32°C
3/29	34°C
3/30	47°C
3/31	30°C
4/1	31°C
4/2	44°C
4/3	42°C
4/4	30°C
4/5	50°C
4/6	57°C
4/8	46°C
4/10	32°C
4/12	37°C
4/14	63°C
4/16	49°C
4/18	25°C

From: matsuo.kenji@tepcoco.jp
To: matsuo.kenji@tepcoco.jp;
CC:
Subject: TEPCO Earthquake Information Update on April 14 : Result of Spent fuel pool water sampling at unit 4
Date: Thursday, April 14, 2011 11:20:27 AM
Attachments:

Dear Friends,

Here are updates on Fukushima Daiichi NPS.

Highlights:

- (1) Spent fuel pool water sampling at unit 4
- (2) Plant Status as of April 14

Contacts:

TEPCO Washington Office 202-457-0790

Kenji Matsuo, Director and General Manager

Yuichi Nagano, Deputy General Manager,

Masayuki Yamamoto, Manager, Nuclear Power Programs

(1) Spent Fuel Pool Water Sampling at Unit 4

On April 12, we had sampled the spent fuel pool water at unit 4, using the boom of concrete pump vehicle. The sampling container was hung from the tip of the boom and sank 1 meter below the surface.

Thermocouple was put on the sampling container and we observed the temperature for 1 minute. It was 90 C. Radiation dose above the refueling floor was several dozen mSv/hr (previously, we have reported this as 84 mSv/hr, but it turned out that the dosimeter was in integration mode.)

We sampled 200 CC of water from the pool then sent it to Fukushima Daini NPS for analysis on April 13.

The table below shows the result of sampled water.

Nuclide

Half-life

Density (Bq/cm³)

Cs-134

About 2 Years

88

Cs-137

About 30 Years

93

I- 131

About 8 Days

220

(Reference: Nuclide analysis on March 4, 2011)

Nuclide

Half-life

Density (Bq/cm³)

Cs-134

About 2 Years

N.D.

Cs-137

About 30 Years

0.13

I-131

About 8 Days

N.D.

From this result, we assume the pool water was contaminated with radioactive materials released from units 1,2 and 3. Since short half-life I-131 is higher density than Cs-134/137, it is unlikely that majority of fuels stored in the pool was destroyed.

(Spent Fuel Pool Data)

Pool Water Inventory

1,400 Ton

Water spray history

(March 20- April 13)

Sea water

About 721 ton

Fresh water

About 1,095 ton

Evaporation per one day

Water volume

70 Ton

Water level

Minus 30cm

Decay heat (kcal/hr)

1.62×10^6

- We estimate 195 ton injected on April 13 contributed 1m increase of pool level.

(2)Plant Status of Fukushima Daiichi Nuclear Power Station as of April 14

<Draining Water from Underground Floor in Turbine Building (T/B)>

- For Units 1 to 3, we are planning to discharge water to the Condensers, etc. The application of the similar procedure to the Unit 4 is under consideration .

T/B Underground

Condenser (Hot Well (H/W))

Unit 1

Planning to transfer to Condenser

4/10••Completed transfer to CST

Unit 2

Completed transfer to Condenser(from the trench)

4/9 Completed transfer to CST

Unit 3

Waiting for draining water of the condenser

Planning to transfer to CST

- From April 7th, we have been preparing to drain water to the Central Radioactive Water Treatment Facility.
 - From 19:35 on April 12th to 17:04 on April 13th, we transferred accumulated water in Turbine Building from the trench of Unit 2 to the condenser.
- Water level at the trench: dropped by 60mm. (As of 19:00) (Total transferred volume: Approx. 660t)
- 14th April: Confirmed that water level at Unit 2 trench has increased by 45mm since completion of water transfer (14th April 11:00).

<Contaminated Water Leakage from Unit 2>

- At approximately 5:38 am, April 6th, the stoppage of water leakage from beneath the supply cable pit was confirmed. The leak has been prevented using rubber plate and fixer.

- On April 8, we improved water leakage prevention in and around the pit by liquid glass and cement.

[Other measures]

- From April 11th, the silt fence is being installed (Installation of silt fence at a breakwater on the south of the station on 11th April, and in front of the screen of Unit 3 and 4 on 13th April, has been respectively completed.)

(7:45-12:20, 14th April silt fence at Unit 1/2 screen and intake has been implemented)

- On April 12th, we installed an iron plate in front of the screen of Unit 2.

(As of April 13th, 3 out of 7 fences have been installed.)

Next installation planned on 15th April.

< Injection of Nitrogen Gas to the Primary Containment Vessel of Unit 1 (PCV)>

•Injection of nitrogen gas using temporarily nitrogen generator

- From 1:31 am, April 7th, we started to inject nitrogen gas to PCV.

- At 1:20, April 7th, before we injected nitrogen gas, the D/W pressure was 156.3kPaabs, then the pressure increased to 192.2kPaabs at 15:00, April 14th. The pressure is stable at about 195 kPaabs.

< Discharge of Low level Radioactive Accumulated Water in Central Waste Treatment Facility and Units 5 & 6 to the sea>

•Central Waste Disposal Facility •

- We had discharged approximately 9,070 tons of water from the discharge canal of Units 1 to 4 from April 4th to April 10th.

We are investigating and confirming the situation.

•

•Sub drain of Unit 5 and 6•

- From April 4th, we started the discharge from the water discharge canal of Units 5 & 6 and at 18:52, April 9, we completed it (About 1,323 tons)

<Radioactive Materials Monitoring: Density of Iodine 131 in the sea >

From April 12 to 13, we were not able to conduct monitoring at 15km offshore of Fukushima Daiichi and Daini due to bad weather except for two locations.

Sampling Location (seacoast)

Date/Time

Density

Ratio to Criteria

Approx. 30m north to Discharge Canal of Units 5 & 6 of Fukushima Daiichi

4/13• 8:45

4/13•14:15

1.7 Bq/cm³

1.6 Bq/cm³

Approx. •43 times

Approx. •40 times

Approx. 330m south to Discharge Canal of Units 1 to 4 of Fukushima Daiichi.

4/13• 8:30

4/13•14:00

0.98 Bq/cm³

0.97 Bq/cm³

Approx. •25 times Approx. •24 times

Sampling Location (offshore)

Date/Time

Density

Ratio to Criteria

Around the north discharge canal of Fukushima Daini (10km from Fukushima Daiichi)

4/13• 8:35

1.0 Bq/cm³

Approx. 25 times

Around Iwasawa Seashore (approx. 16km from Fukushima Daiichi)

4/13 7:50

1.1 Bq/cm³

Approx. 28 times

Approx. 15km from the offshore of Minamisoma City

4/11 10:24 am

0.92 Bq/cm³

Approx. 23 times

Approx. 15km from the offshore of Ukedo River

4/11 10:00 am

4/11 11:18 am

0.27 Bq/cm³

0.24 Bq/cm³

Approx. 6.8 times

Approx. 6.0 times

Approx. 15km from the offshore of Fukushima Daiichi

4/11 9:31 am

4/11 10:53 am

0.22 Bq/cm³

0.19 Bq/cm³

Approx. 5.5 times

Approx. 4.8 times

Approx. 15km from the offshore of Fukushima Daini

4/11 9:01 am

4/11 10:27am

0.2 Bq/cm³

0.21 Bq/cm³

Approx. 5.0 times

Approx. 5.3 times

Approx. 15km from the offshore of Iwasawa Seashore•

4/13• 9:25

0.12 Bq/cm³

Approx. 3.0 times

Approx. 15km from the offshore of Hirono Town

4/13• 8:42

0.021 Bq/cm³

Approx. 0.53 times

<Water Injection and Spraying to Spent Fuel Pool>

-- Results on April 13th

•Unit 4• 0:37-6:57 Sprayed fresh water by a concrete pump vehicle (Approx. 195t).

•Unit 2• 13:15-14:55 Injection of fresh water from Fuel Pool Cooling line. (Pool temperature 72••at April 14 0:00)

-- Results on April 14th

•Unit 3• 15:56-16:32• Sprayed fresh water by a concrete pump vehicle (Approx. 25t)

<Water Injection to the Reactors>

•Unit 1• Injecting fresh water

Reactor pressure vessel temperature:

4/14 12:00 pm <Water feed nozzle> 200.3••

<Bottom of reactor pressure vessel> 119.5•

•Unit 2•Injecting fresh water

Reactor pressure vessel temperature•

4/14 12:00 pm <Water feed nozzle> 154.1•

•Unit 3•Injecting fresh water

Reactor pressure vessel temperature•

4/14 12:00 pm <Bottom of reactor pressure vessel> 121.7•

•Unit 4••No particular changes on parameters.

•Units 5/6••Reactor cold shutdown. No particular changes on parameters.

•Common spent fuel pool••No particular changes on parameters.

<Other Developments>

- Since April 1st, we have sprayed dust inhibitor (anti-scattering agent) in order to prevent diffusion of radioactive materials on a trial basis. (4/14 12:00-13:30, dust inhibitor was sprayed to mountain side of Common Pool area (approx. 1,600m2).)

- Since April 10th we have been clearing outdoor rubble by a remote control machine.

- On April 10, we monitored the plant status by the unmanned chopper, T-Hawk.

à 4/14 10:17-12:25 site condition was checked around Unit 1-4 Reactor Building)

- 4/13, Received an instruction to report on the regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors (pursuant to Section 67.1).

ü Evaluation the earthquake-proof safety of the Reactor Buildings.

ü Consideration of countermeasure such as anti-seismic reinforcement work to places where the earthquake-proof safety is not secured.

From: RST01 Hoc
Sent: Thursday, April 21, 2011 10:46 AM
To:

(b)(6)

Subject: Last minute Agenda items

Sorry for the late notice,

I just got off a conference call with Chuck Casto and he has added a couple of more items to my list:

1. Major concern for Japanese

- a.
- b.
- c.

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2. Also, Chuck would like any feedback that you have on TEPCO's roadmap by tomorrow

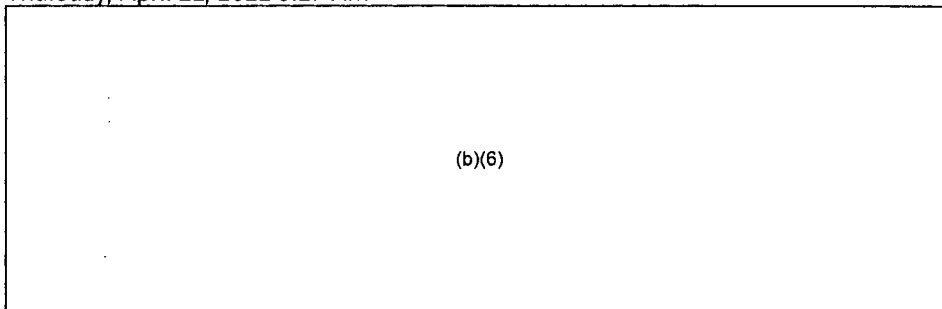
- a.

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Mike

Mike Brown
Reactor Safety Team

From: RST01 Hoc
Sent: Thursday, April 21, 2011 9:17 AM
To:



Subject: Potential Leak paths document
Attachments: 03-28-2011-2130 Potential Leakage Paths to the Turbine Buildingmod2.doc

Sorry, I forgot to attach the Potential Leak path document.

Here it is.

Mike

Mike Brown
Reactor Safety Team

Potential Leakage Paths to the Turbine Building

The following questions were asked on March 25, 2011: The Unit 3 Turbine Bldg basement has flooding – what is the likely source? How do we know?

The following response was given:

The radiation dose at the surface of the water was approximately 400 mSv/h (40 rem/hr). Nuclides in a sample of the water were reported as including a high concentration of Iodine-131 relative to isotopes of Cesium. Potential sources of contaminated water include:

- o Reactor primary coolant (most likely candidate)
- o Spent fuel pool
- o Demine or resin

Potential failure mechanisms for contaminated water to enter the Unit 3 turbine building basement include (in order of likelihood):

- o Structural damage
- o Reactor building sumps/drains
- o Main steam/Feedwater systems valve leakage
- o Electric and piping tunnels

The purpose of this document is to provide further explanation of the possible leak paths discussed above.

Structural Damage:

Structural Damage could include torus potential leak paths, penetration seal failure, and between-unit damage to a common wall. Each of these potential leak paths is discussed further below:

- Torus Breach

The torus does not communicate directly with the turbine building. However, leakage from the torus would be into the reactor building basement, which is sometimes called the torus room. There are unsealed penetrations between the torus room and the rooms that contain the residual heat removal pumps and core spray pumps (these rooms are often called corner or crescent rooms). Also, there are sumps in the torus room and the corner rooms and leakage of isolation valves or check valves in the drain lines can allow leakage between the torus room and the corner rooms. See below for a discussion of leakage paths through these sumps.

- Penetration Seal Failure

There are numerous penetrations into the reactor building and into the drywell. These include electrical, instrumentation and piping penetrations.

There are also numerous penetrations between the reactor and turbine buildings

- Between-unit damage to a common wall

Units 1 and 2 turbine building share a common wall, as do Units 3 and 4. Therefore, it is possible that a leak into Unit 1 turbine building could carry over into Unit 2 or vice versa. The same holds true for leakage between Units 3 and 4. There is a road between Units 2 and 3. Unless there are passageways below this road, it seems less likely that leakage could pass between Units 2 and 3.

Reactor Building sumps/drains

In US reactors, the reactor building has two types of sumps: 1) floor drain sumps, and 2) equipment sumps. These are relatively small tanks (~1000 gallons). When the sumps fill, they pump over to the radwaste facility. However, the piping lines to radwaste may merge with similar lines from the turbine building. If there are no check valves in the turbine lines or if the check valves leak, this can supply a leakage path from the reactor building to the turbine building. The sumps are typically in the basement of the reactor building, which may be lower than the basement of the turbine building. As such, pressurization is not expected to push water over to the turbine building.

Drywell Sumps

As with the reactor building, there are both equipment (primarily recirculation pump seals) and floor drain systems in the drywell. These sumps also connect to the radwaste facility. However, in off-normal or accident conditions, these drain lines are automatically isolated, typically with air-operated valves. The normal motive force to move water from the sumps to radwaste is electrically-powered pumps, which were likely non-functional during the station blackout. However, another means to force water through the drain lines past the closed isolation valves would be high drywell pressure. If the drywell sump drain lines share piping to radwaste with the sumps from the turbine building, then this is a potential leak path.

Main Steam Isolation Valve Leakage

The largest piping systems between the reactor and turbine buildings are the main steam and feedwater systems. In US plants, these systems traverse the building through a main steam tunnel. There are four steam lines. Leakage through the steam lines proper would have to pass through the two in-series, closed main steam isolation valves (MSIVs) (the MSIVs receive isolation signals on accident conditions), then the closed main turbine stop and control valves (the stop and control valves receive close signals on turbine trip), into the high pressure turbine. These valves are designed to be leak-tight valves. Therefore, leakage through this path is not likely.

A second path down the steam lines would bypass the main turbine stop and control valves by leaking through the main turbine bypass valves to the main condenser. Again, this leakage path seems unlikely.

A third path via the main steam system would be through the main steam drain lines. The typical BWR has main steam drain lines inboard of the inboard main steam isolation valves (MSIVs). This flow path goes to the main condenser via multiple, in-series valves. These valves are normally closed during power operation. They receive isolation signals on accident conditions. These are motor operated valves. Typically, these are three inch lines. Based on

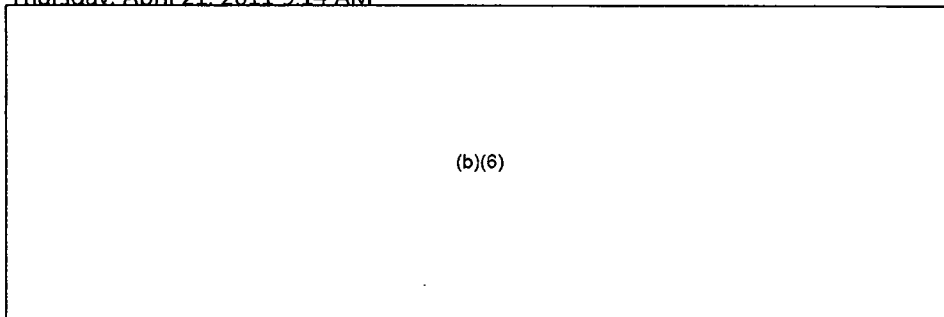
the assumption that these are motor operated valves and that they are significantly smaller than the main steam lines, this leak path has a higher probability of leakage than through the MSIVs.

After the earthquake the operators could have started a cool down of reactors 1, 2, 3. They initially would have been cooling down to the torus but during the hour before the tsunami hit the operators could have tried to establish the condenser as the heat sink for the cool down. They could have established a flow path through the MSIV drains to the condenser through the turbine bypass valves. When the tsunami hit the motor operator MSIV drain valves would have failed in the open position. This is a potential source of reactor water to the turbine building.

Feedwater Check Valve Leakage

There are two feedwater lines connecting the turbine building to the reactor. There are multiple check valves and isolation valves between the feedwater pumps and the reactor. With low reactor pressure, the check valves can be assumed to leak. The position of any control valves or gate valves is not known. Therefore, these valves could be open. Also, there are multiple drain lines on the feedwater system. These lines could also be open.

From: RST01 Hoc
Sent: Thursday, April 21, 2011 9:14 AM
To:



Cc: Zimmerman, Roy; Reynolds, Steven; Garchow, Steve; Moore, Carl; Casto, Chuck; Tracy, Glenn; RST02 Hoc; Holonich, Joseph
Subject: 11 am call Agenda - rev. 1
Attachments: April 21 1100 Agenda Rev 1.docx

Here is the revised agenda that we will discuss this morning.

Let me know if you have any questions.

Mike

Mike Brown
Reactor Safety Team

11 am call notes 4/20/11

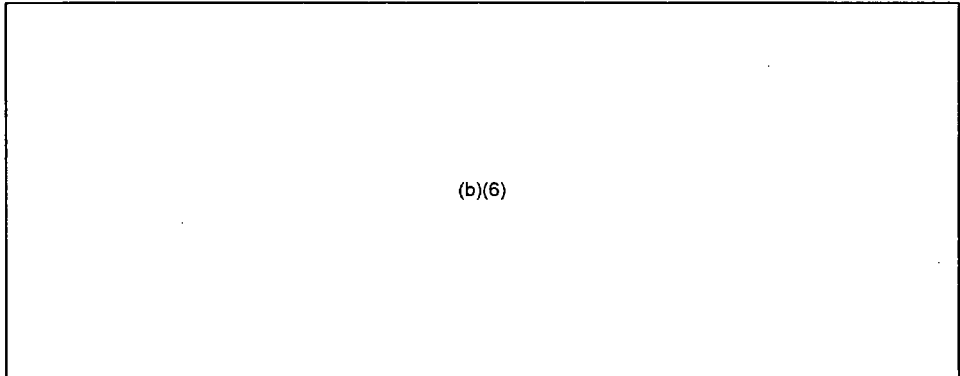
Questions/Comments from 11 am call – please be ready to provide feedback by tomorrow. If you would prefer to email me your comments please try to get them to me by 10:30am tomorrow.

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From: RST01 Hoc
Sent: Thursday, April 21, 2011 6:23 AM
To:



Cc: Skeen, David; Hiland, Patrick
Subject: Technical Consortium Call 11:00am Agenda 4/21/2011
Attachments: April 21 1100 Agenda.docx

Agenda Items with RST preliminary assessment on Possible Inerting strategies, leakage paths from Rx to TB, and Waste Management Strategies.

Agenda: Technical Consortium Call

Date/Time: April 21, 2011/11:00 AM

Old Business:

- **Further discussion on N2 injection into a containment with a high steam generation rate:**

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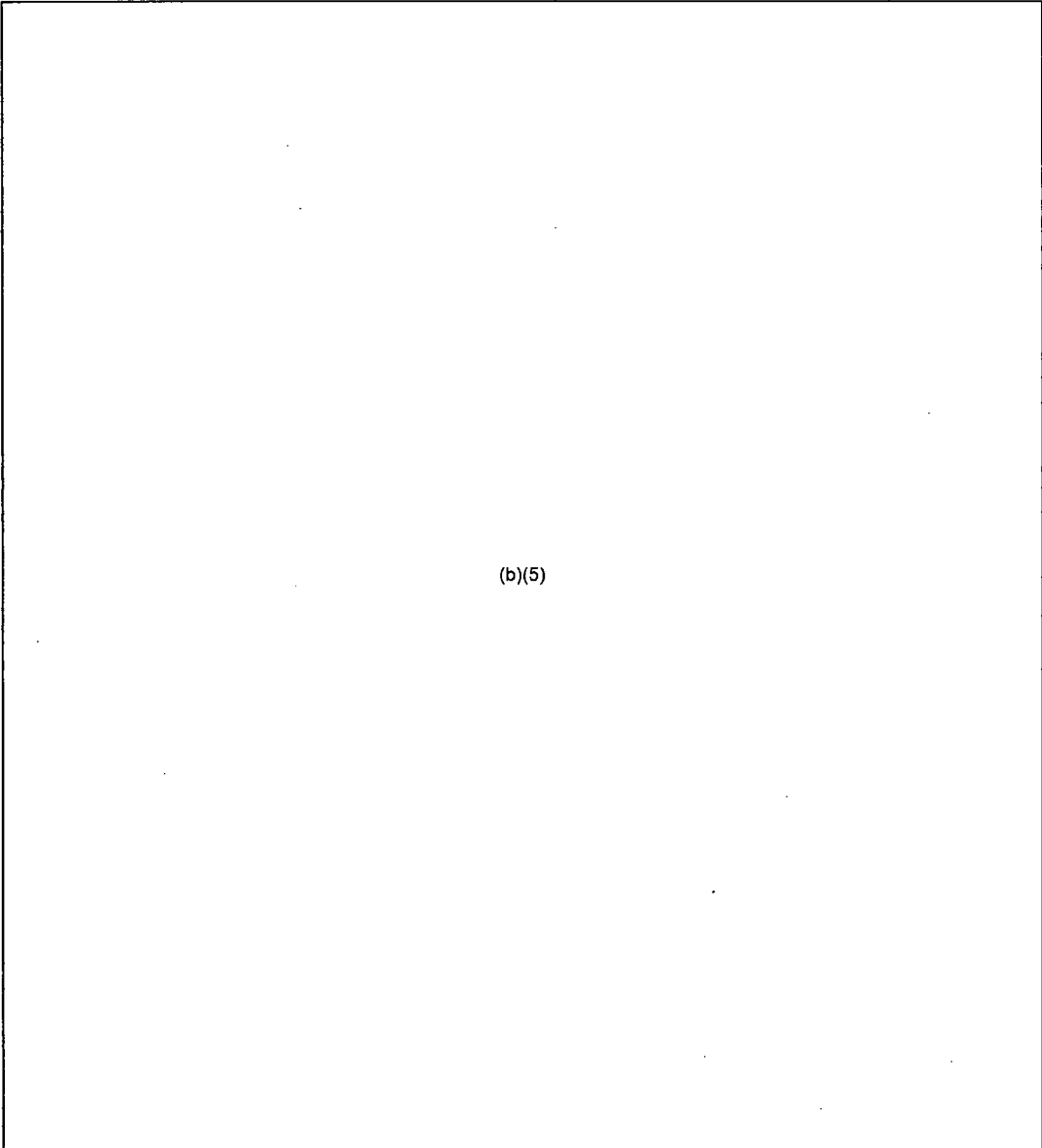
- **TEPCO Road Map Discussion.**

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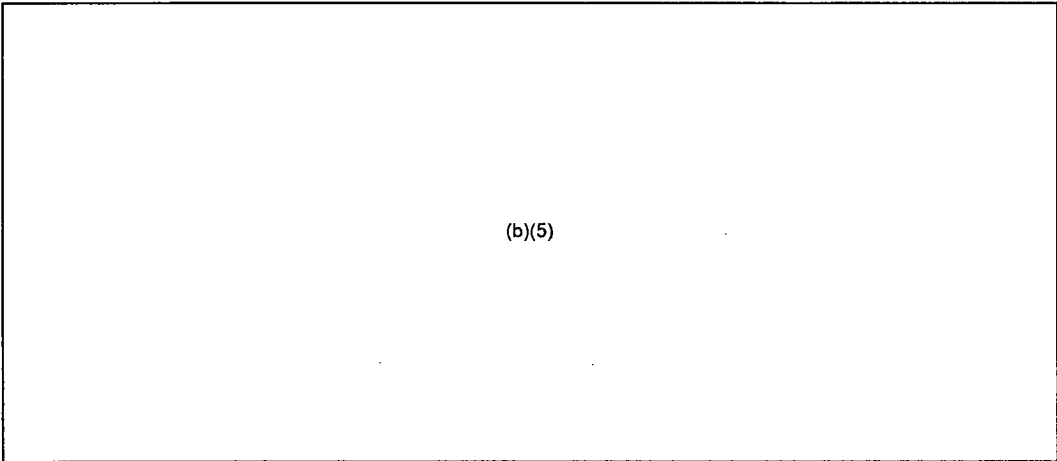


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New Business:



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From: RST01 Hoc
Sent: Thursday, April 21, 2011 6:13 AM
To:

(b)(6)

Subject: FW: SFP 2 Chem Analysis

From: Garchow, Steve
Sent: Thursday, April 21, 2011 4:45 AM
To: RST01 Hoc
Subject: RE: SFP 2 Chem Analysis

Sorry, that was on page 2 which I didn't have. I now have it and will scan and send to you.

From: RST01 Hoc
Sent: Thursday, April 21, 2011 4:36 AM
To: Garchow, Steve
Subject: RE: SFP 2 Chem Analysis

Steve, I got a call from INPO and the document did not have the Chloride analysis info. Do you have a separate document that shows that information.

INPO had thought the value was more in the 1,100 ppm range rather than 22,000 ppm.

From: RST01 Hoc
Sent: Thursday, April 21, 2011 4:06 AM
To: Garchow, Steve
Subject: SFP 2 Chem Analysis

Steve, I do not see the Tepco chemical analysis of SFP 2 in the RST01 inbox. Could you send it again.

Thanks

Jim

From: Garchow, Steve
Sent: Thursday, April 21, 2011 2:44 AM
To: RST01 Hoc
Subject: FW: Daiichi Station Electrical diagrams

May be of use – Please forward to anyone that may have an interest.

From: Gard, Lee A (INPO) [mailto:GardLA@INPO.org]

Sent: Thursday, April 21, 2011 2:09 AM

To: [redacted] (b)(6)

[redacted] (b)(6)

Subject: FW: Daiichi Station Electrical diagrams

[redacted] (b)(5)

Best regards,

Lee Gard

(b)(4)

(b)(4)

From: RST01 Hoc
Sent: Wednesday, April 20, 2011 2:34 PM
To:

(b)(6)

Cc: Nichols, Paul A (GE Power & Water)
Subject: FW: Excitement group meeting
Attachments: 110419-JNES-1F4SFP.pdf

Here is another copy of the "Assessment of the Spent Fuel Pool of Fukushima Daiichi Unit 4"

I believe this was sent out yesterday. Feel free to delete it if you already have a copy.

Mike

Mike Brown
Reactor Safety Team

-----Original Message-----

From: Garchow, Steve
Sent: Wednesday, April 20, 2011 12:45 AM
To: RST01 Hoc
Subject: FW: Excitement group meeting

Find attached an analysis performed by the Japanese government on spent fuel pool #4. They have requested some "experts" review it and provide any recommendations. It was prepared by the Japanese version of the Sandia guys. We, the NRC and Sandia, attended a meeting last night and went through the analysis with them. This document is as they told us, somewhat primitive.

Again, they would like any thoughts on the analysis or any other accident progressions that may be possible other than those analyzed.

The documents are marked confidential but they requested that it be forwarded to the consortium for review and comment.

Thanks,
Steve

-----Original Message-----

From: 大島 俊之 [mailto:oshima-toshiyuki@meti.go.jp]
Sent: Wednesday, April 20, 2011 12:26 AM
To: Reynolds, Steven; Garchow, Steve
Cc: '根井 寿規'

Subject: Excitement group meeting

Dear Garchow

Thank you for your support for our challenges of Fukushima events.
Attached please find the electric file for 1F4 SFP analysis conducted by JNES.

Best regards,

Toshi

Toshiyuki OSHIMA
NISA, Japan

Assessment of the Spent Fuel Pool of Fukushima Daiichi Unit 4

April 19, 2011

“Excite Meeting”

at Room 1042 of Annex Bldg of METI/NISA

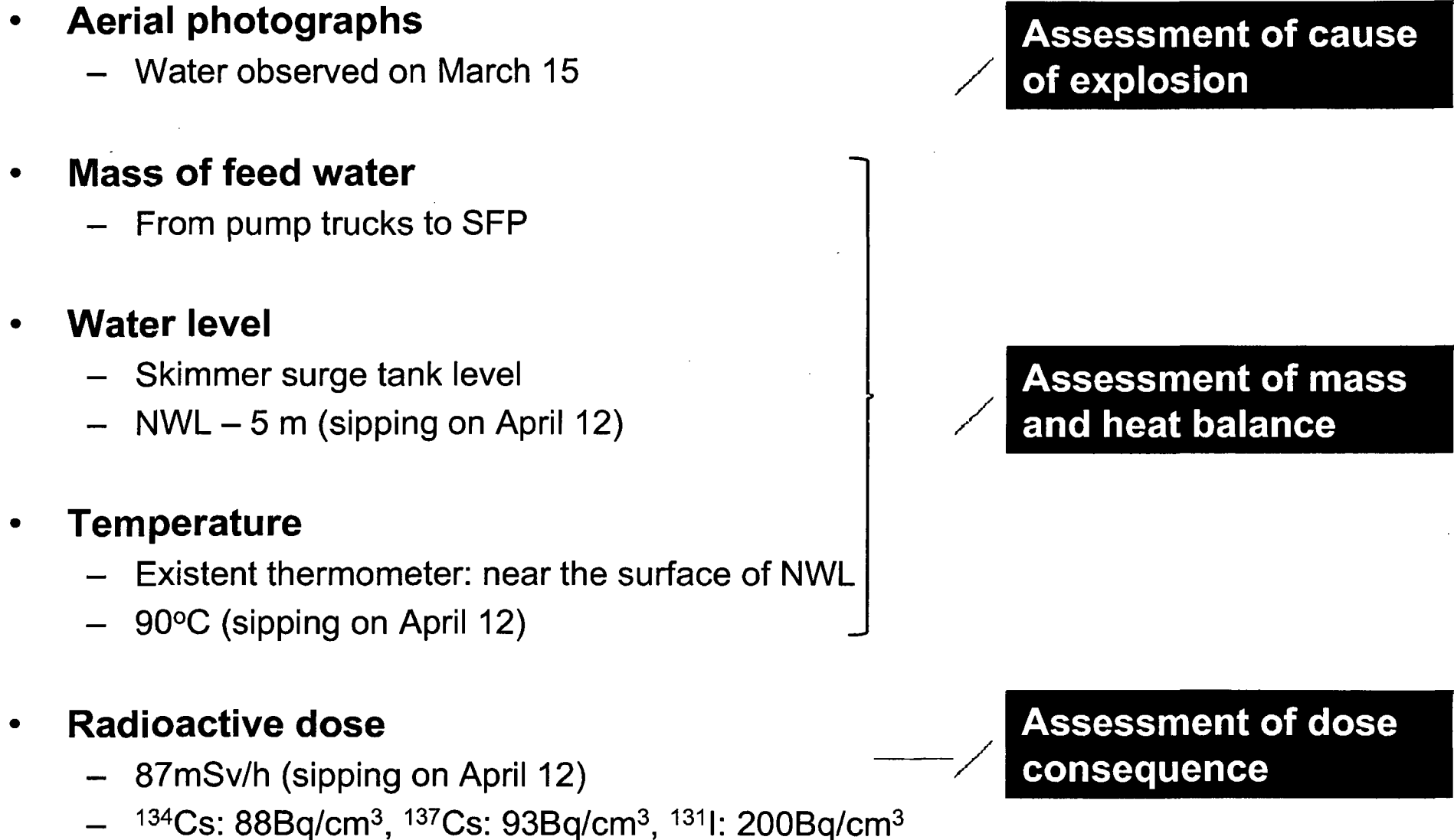
Japan Nuclear Energy Safety Organization (JNES)

Nuclear Energy System Safety Division

Contents

- 1. Possible scenarios**
- 2. Assessment of scenarios**
- 3. Conclusion**

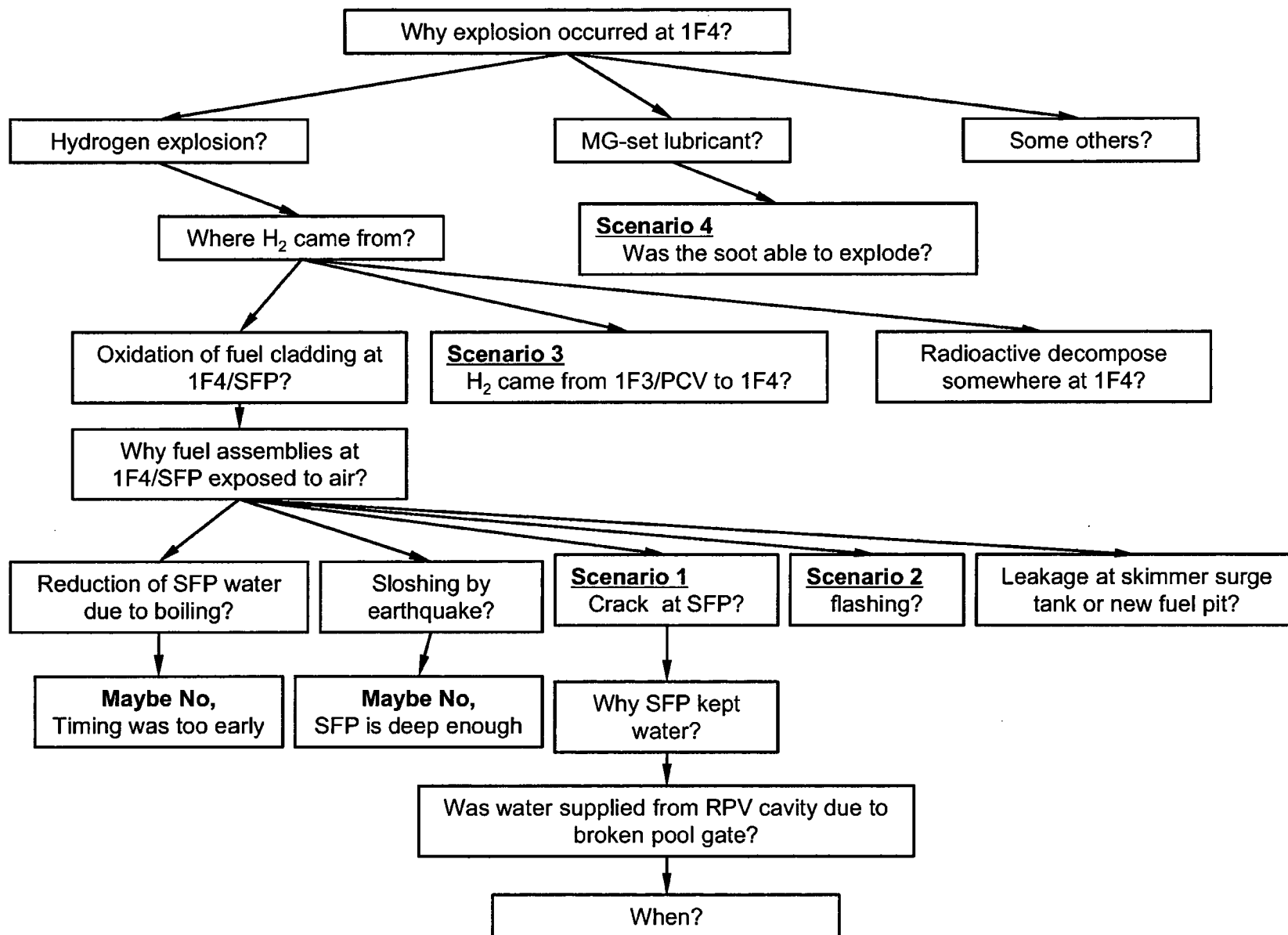
Measured data and assessment approach



Chronology

Date	Description	Injected mass	Water type
3/11 15:42	The earthquake occurred Loss of all alternating current power Loss of ultimate heat sink		
3/14 04:08 (2.52d)	SFP temperature : 84°C		
3/15 06:14 (3.61d)	Huge crash bang R/B was broken		
3/15 06:50	583.7 μ Sv/h at main gate		
3/16 05:45 (4.59d)	Fire at R/B		
3/16 14:00 (4.93d)	Taking photos of water at SFP from helicopter		
3/20 08:21-09:40	Water truck of SDF	ca. 90 ton	Fresh water
3/20 18:30-19:46	Water truck of SDF	ca. 80 ton	Fresh water
3/21 06:37-08:41	Water truck of SDF	ca. 90 ton	Fresh water
3/21 06:38-08:41	Water truck of TEPCO	ca. 2.2 ton	Fresh water
3/22 17:17-20:32	Concrete pump truck (spray)	ca. 150 ton	Sea water
3/23 10:00-13:02	Concrete pump truck (spray)	ca. 125 ton	Sea water
3/24 2:30	SFP temperature : 100°C		
3/24 14:36-17:30	Concrete pump truck (spray)	ca. 150 ton	Sea water
3/25 19:05-22:07	Concrete pump truck (spray)	ca. 150 ton	Sea water
3/25 06:05-10:20	Fire engine to FPC piping	ca. 21 ton	Sea water
3/27 16:55-19:25	Concrete pump truck (spray)	ca. 125 ton	Sea water
3/30 14:04-18:33	Concrete pump truck (spray)	ca. 140 ton	Fresh water
4/1 08:28-14:14	Concrete pump truck (spray)	ca. 160 ton	Fresh water
4/3 17:14-22:16	Concrete pump truck (spray)	ca. 180 ton	Fresh water
4/4 09:30	Water level of FPC skimmer surge-tank: 5000mm		
4/5 17:35-18:22	Concrete pump truck (spray)	ca. 20 ton	Fresh water
4/7 18:23-19:40	Concrete pump truck (spray)	ca. 38 ton	Fresh water
4/9 17:07-19:24	Concrete pump truck (spray)	ca. 90 ton	Fresh water
4/12	Sipping at 1F4/SFP		
4/13 0:30-6:57	Concrete pump truck (spray)	ca. 195 ton	Fresh water

Logic tree - pyramid structure -



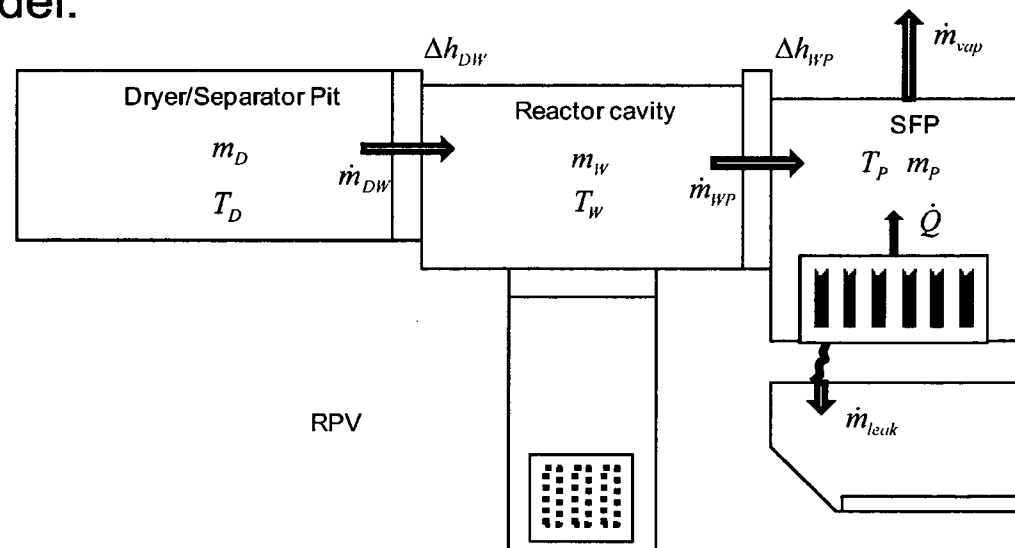
Possible scenarios

- **Scenario 1: Crack**
 - SFP was cracked due to the earthquake and resulted in leakage
- **Scenario 2: Flashing**
 - Depressurized boiling occurred and half of water spilled over
- **Scenario 3: Hydrogen from 1F3**
 - Hydrogen came from Unit 3 to Unit 4 via piping or duct
- **Scenario 4: Soot from MG-set lubricant**
 - Lubricant of MG-set caused explosion

Assessment of mass and heat balance

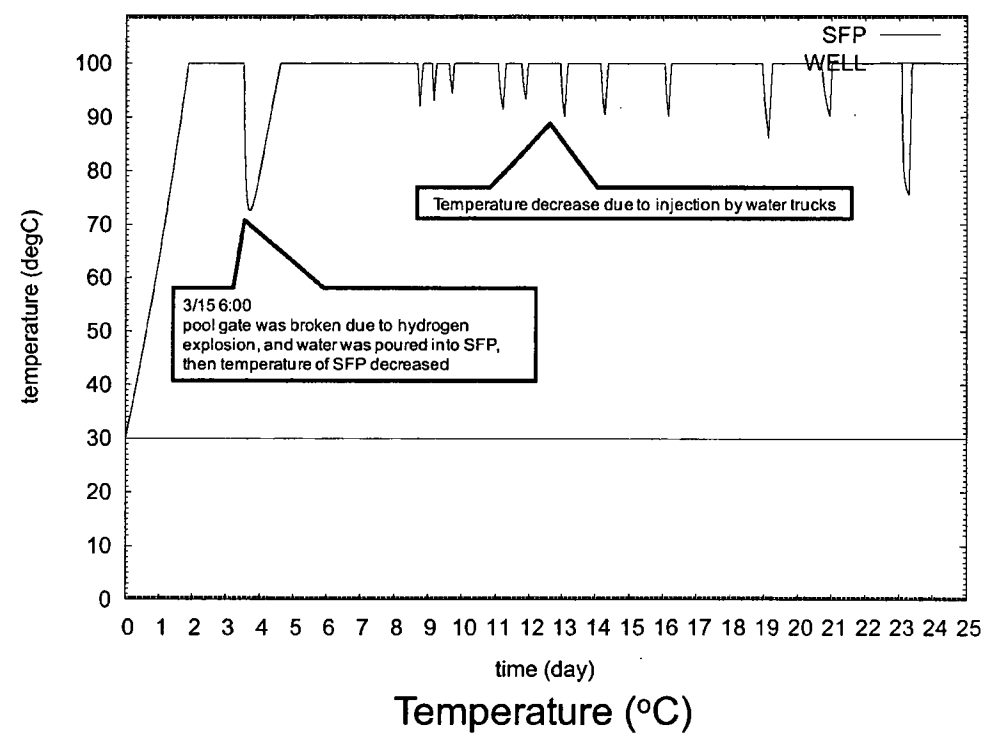
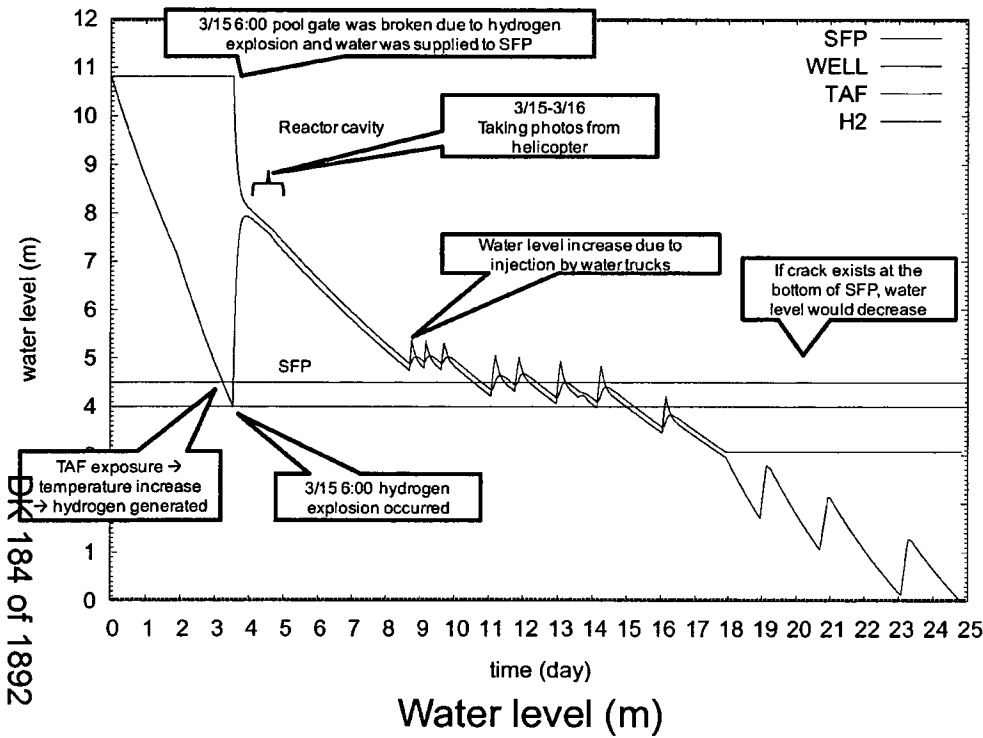
- **Mass and heat balance calculation was conducted**

- Decay heat: 1.88MW (TEPCO information)
- Initial water level: 10.8m (NWL – 1.0m)
- TAF: 4.5m
- Level of H₂ explosion: 4.0m
- Initial SFP temperature: 30°C
- Feed water temperature: 15°C
- Leakage rate: in proportion to square root of water level difference
- Plant model:



Scenario 1: Crack (1/2)

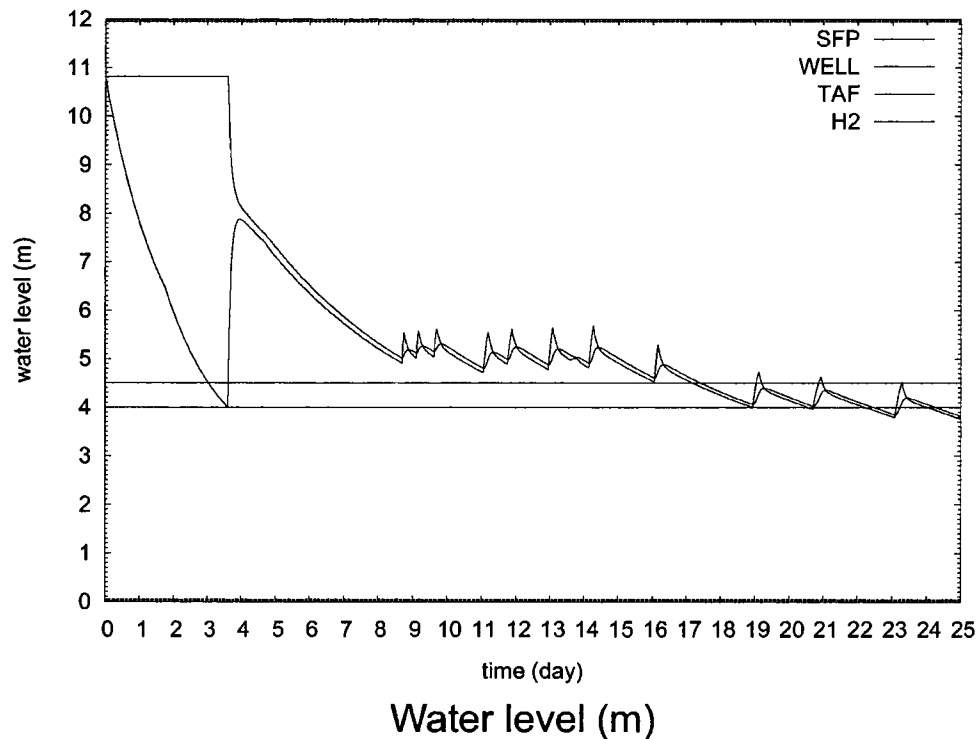
- **Crack at bottom, with broken pool gate**
 - Assuming fuel exposure and hydrogen generation by fuel cladding oxidation before March 15, pool would be empty after a month



Scenario 1: Crack (2/2)

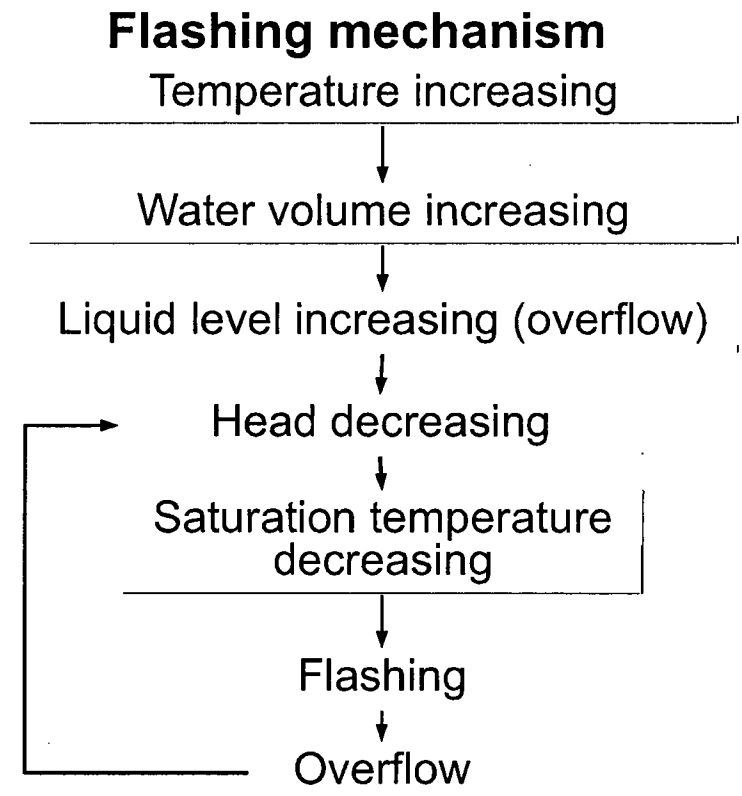
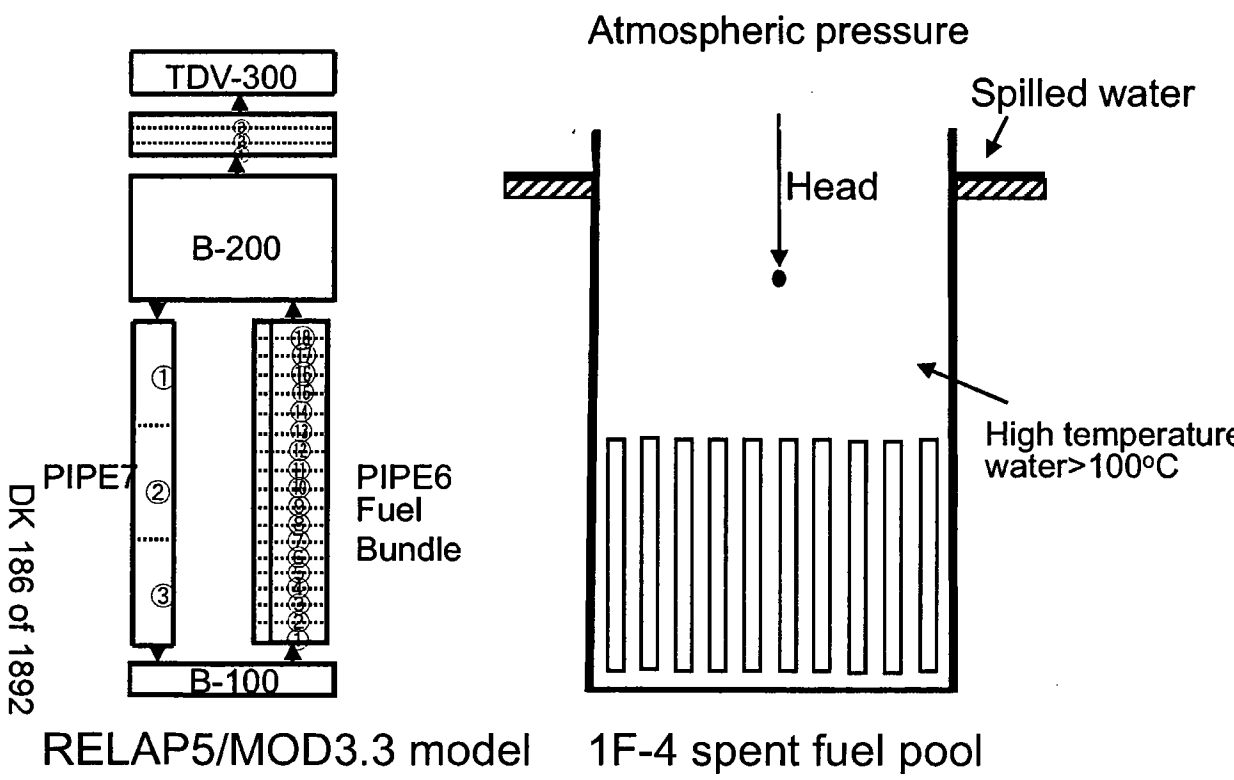
- **Crack at mid-level, with broken pool gate**

- Even assuming fuel exposure before March 15, pool could possibly keep the water level
- However, if hydrogen was generated from fuel cladding at SFP of Unit 4, cesium dose would be high and iodine low compared with measured data



Scenario 2: Flashing (1/4)

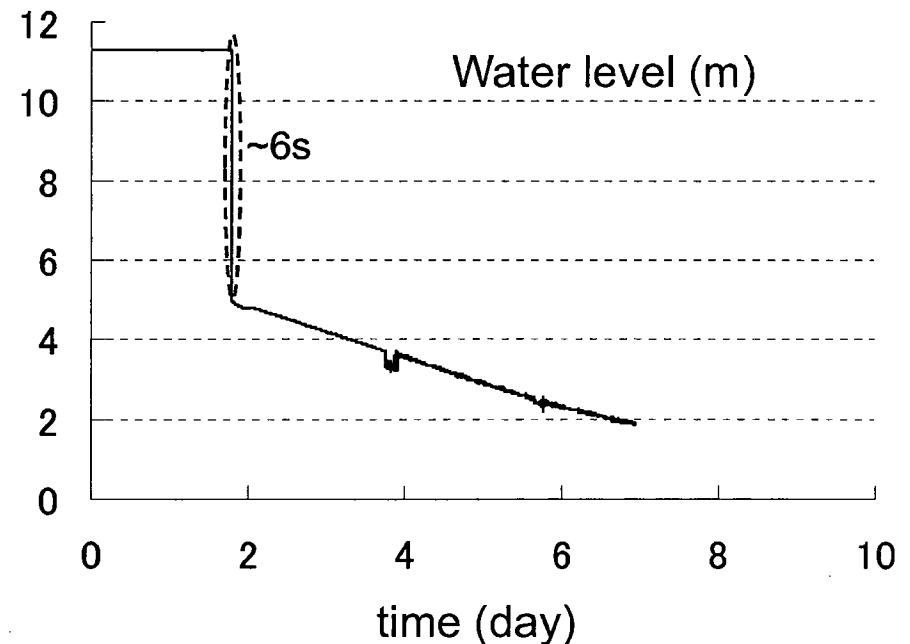
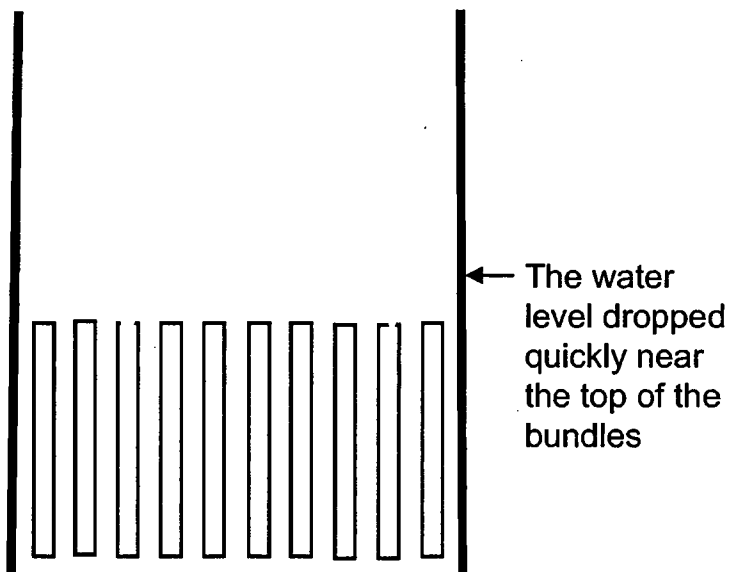
- **Static head of water continued to decrease with water temperature increasing**
- **Flashing started immediately when water temperature reached the saturation temperature**



DK 186 of 1892

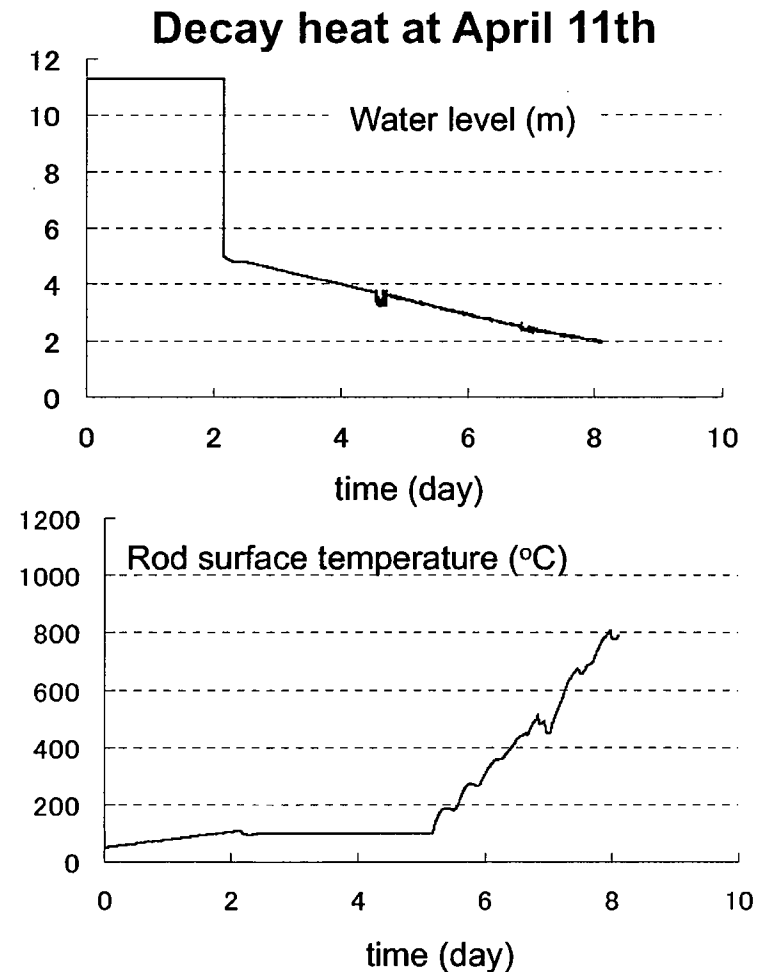
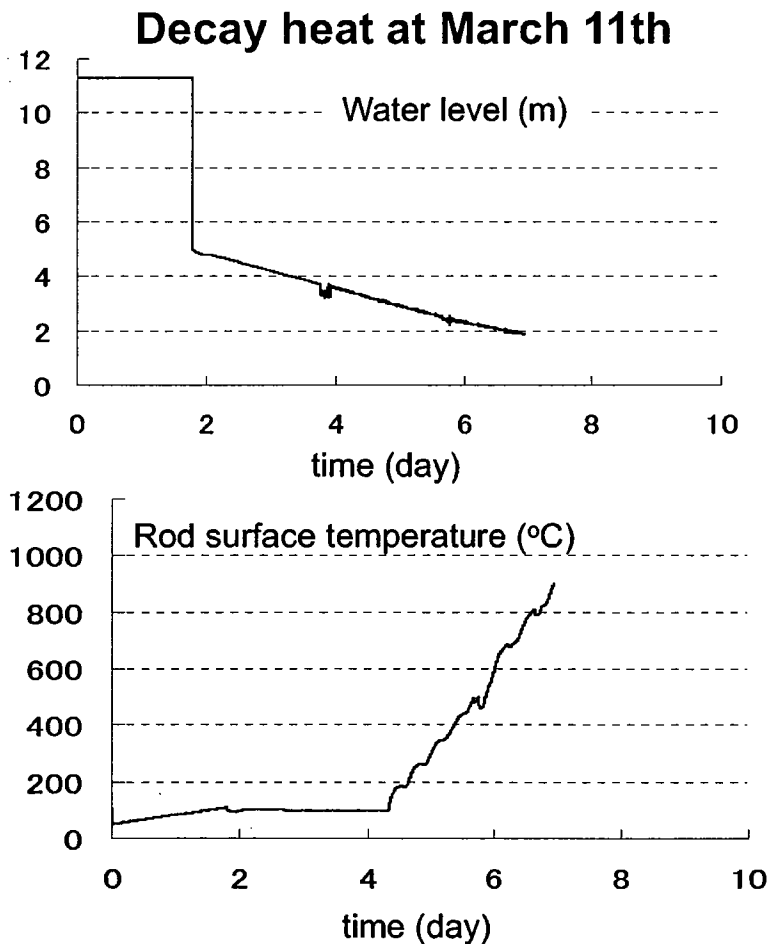
Scenario 2: Flashing (2/4)

- Flashing phenomenon caused swelling of the two-phase mixture level and accelerated the overflow
- As a result, the pool liquid level dropped largely for very short time of about 6 seconds
- More than half water of the pool overflowed during the flashing phenomena continued



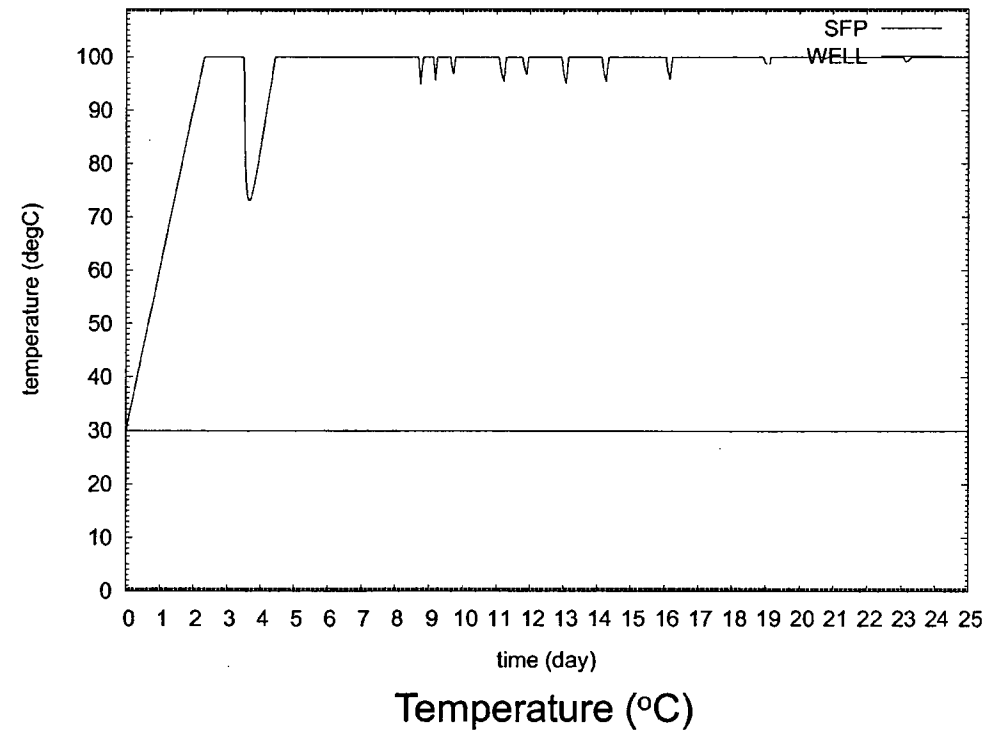
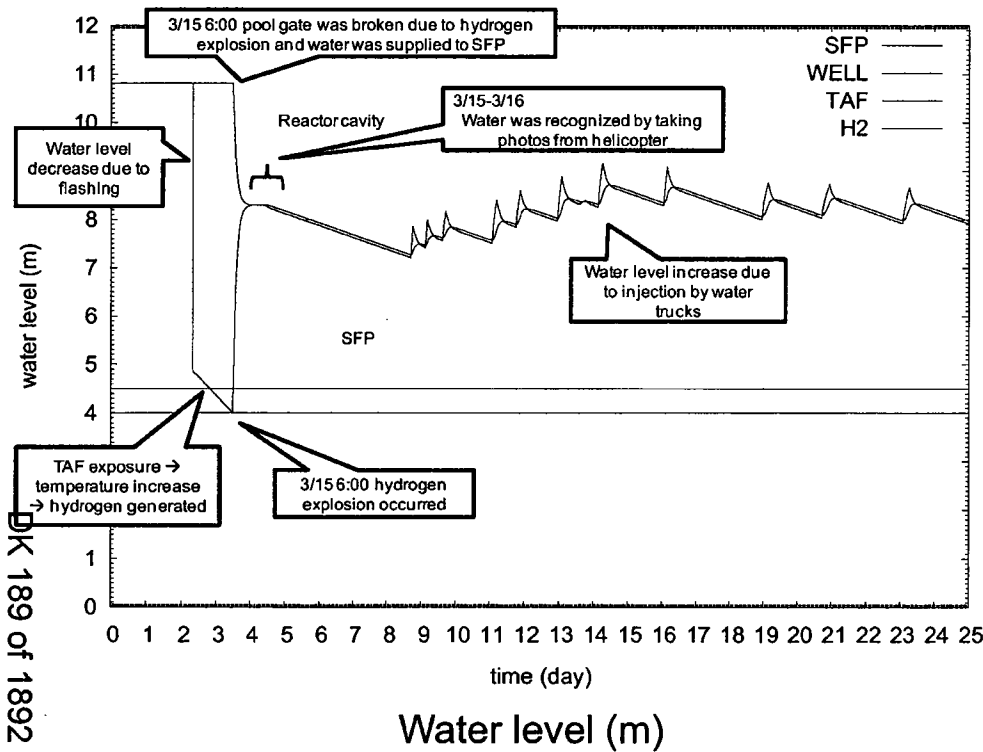
Scenario 2: Flashing (3/4)

- Flashing phenomenon accelerated the overflow of the pool water, and thereby shortened the initiation time to the fuel temperature increasing
- The amount of the overflow due to flashing was not strongly influenced by decay heat



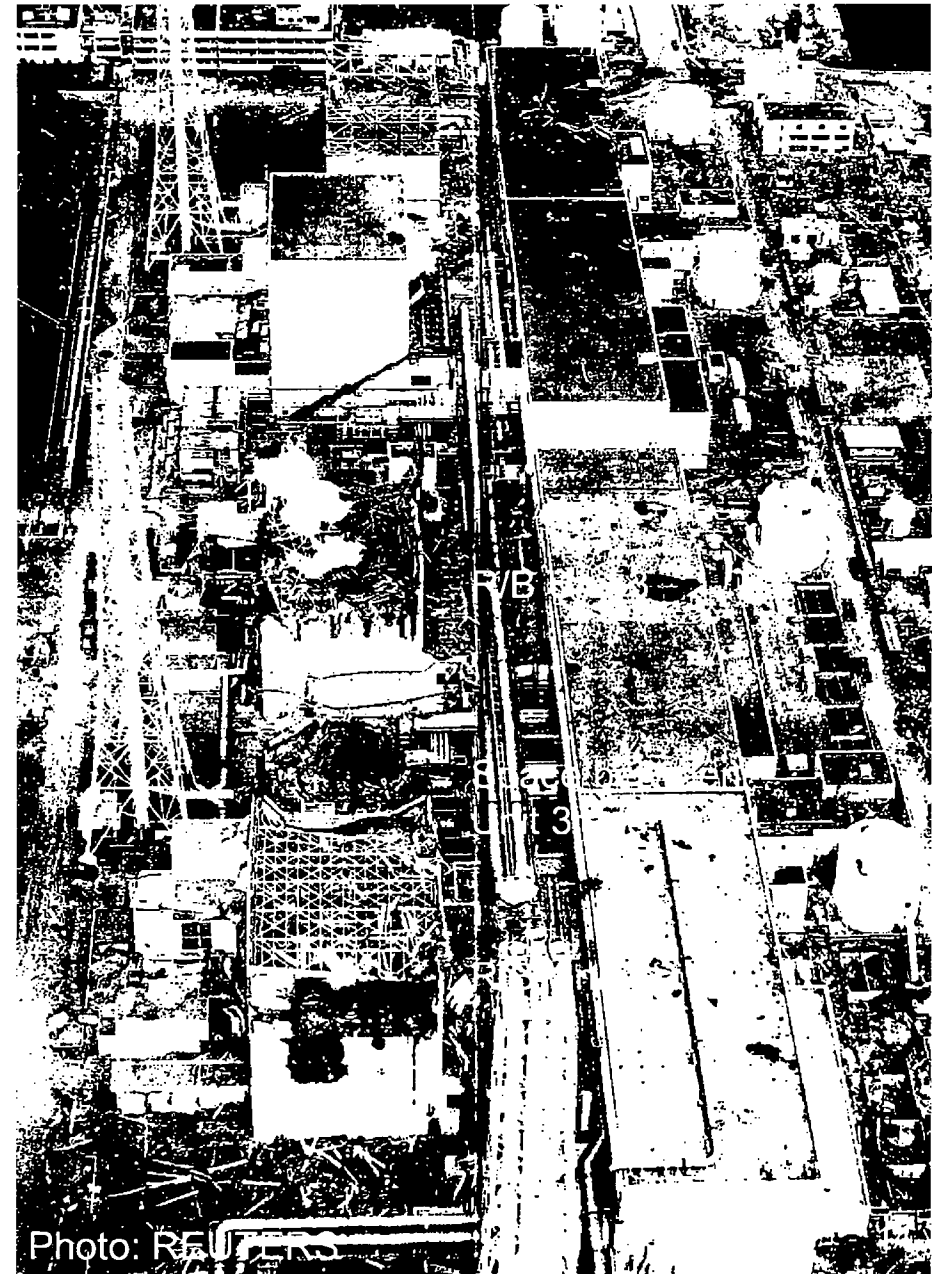
Scenario 2: Flashing (4/4)

- **Flashing, with broken pool gate, no crack**
 - Consistent with mass balance
 - Not consistent with dose on April 12



Scenario 3: Hydrogen from 1F3 (1/3)

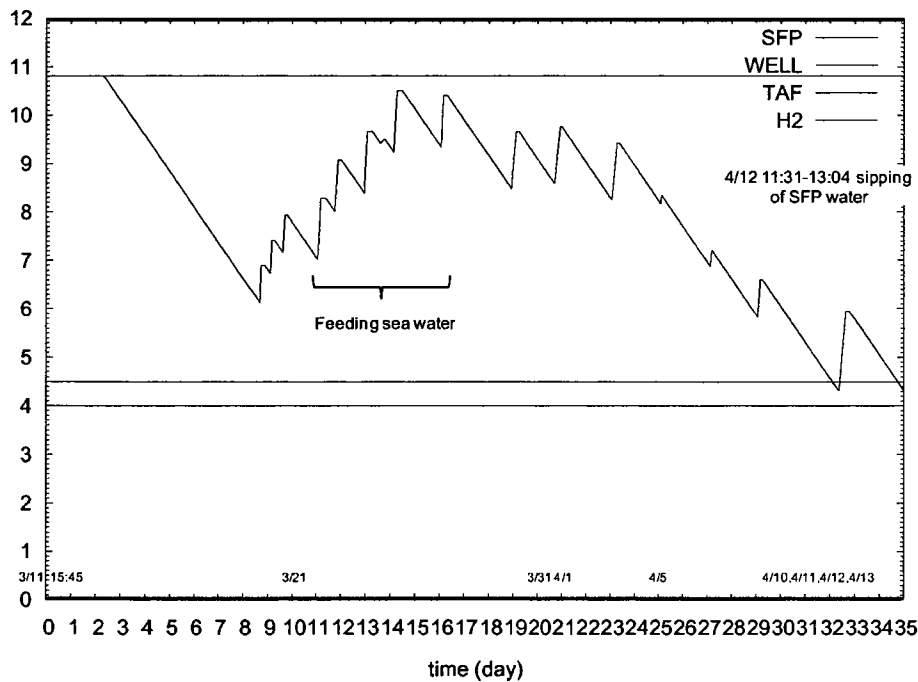
- **Possibility of H₂ transport via piping or duct**
 - This picture shows that the space between Unit 3 and Unit 4 was also exploded
 - This indicates the possibility of spreading of hydrogen generated in the core of Unit 3
 - In addition, result of sampling water, i.e. dose of cesium and iodine, seems not to come from fuel at 1F4/SFP



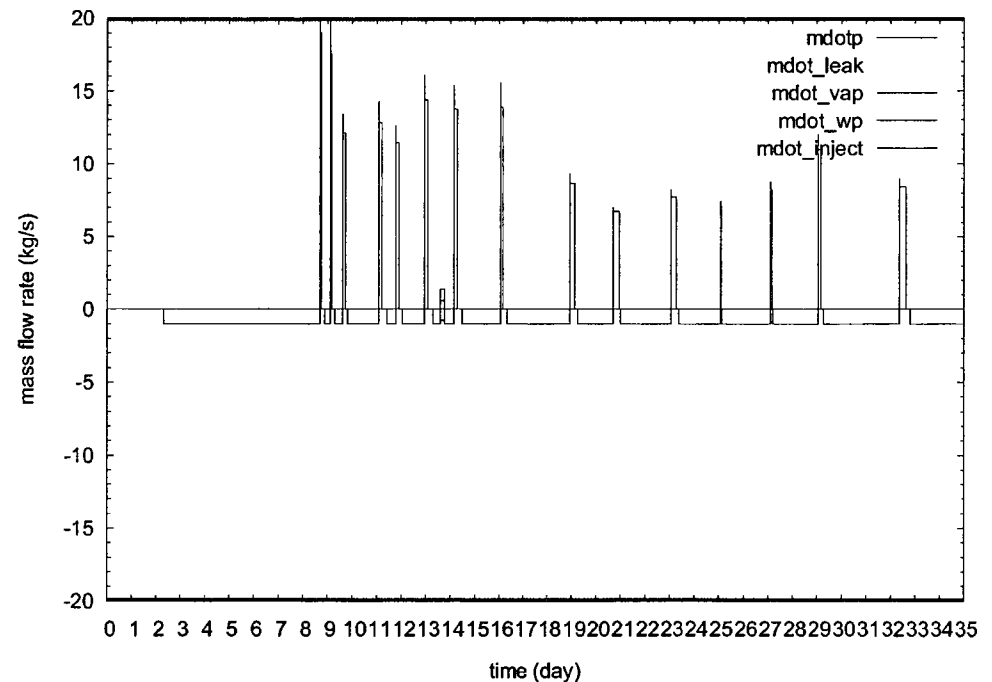
Scenario 3: Hydrogen from 1F3 (2/3)

- H₂ came from Unit 3, with intact pool gate, no crack**
 - If this hypothesis were correct, the figure below shows the possibility that rapture of fuel cladding might occur quite recently
 - Another possibility is that sea water injected during March 22 to 27 might have included radioactive materials

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Water level (m)

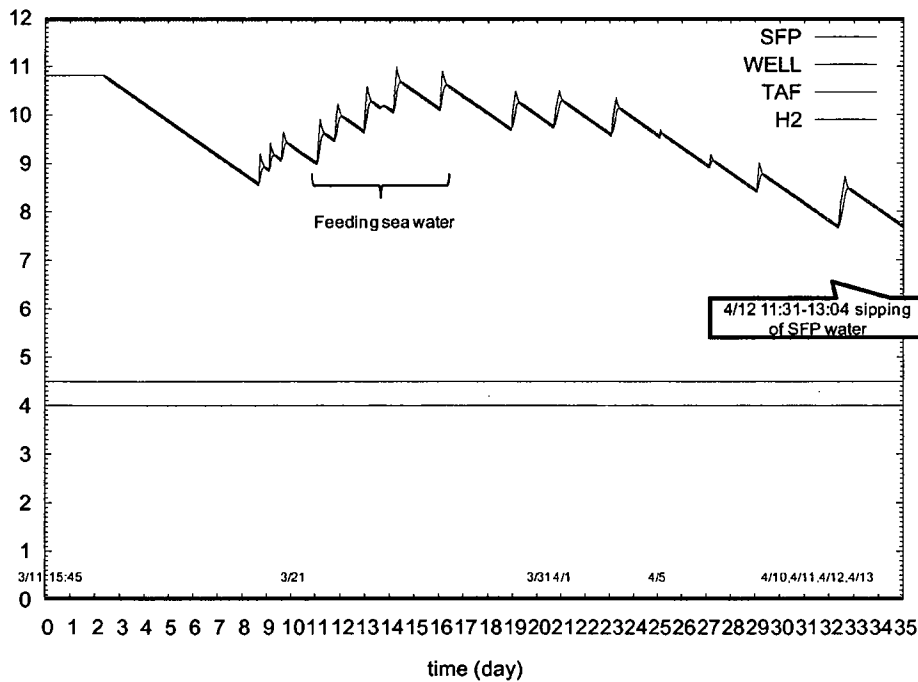


Mass flow rate (kg/s)

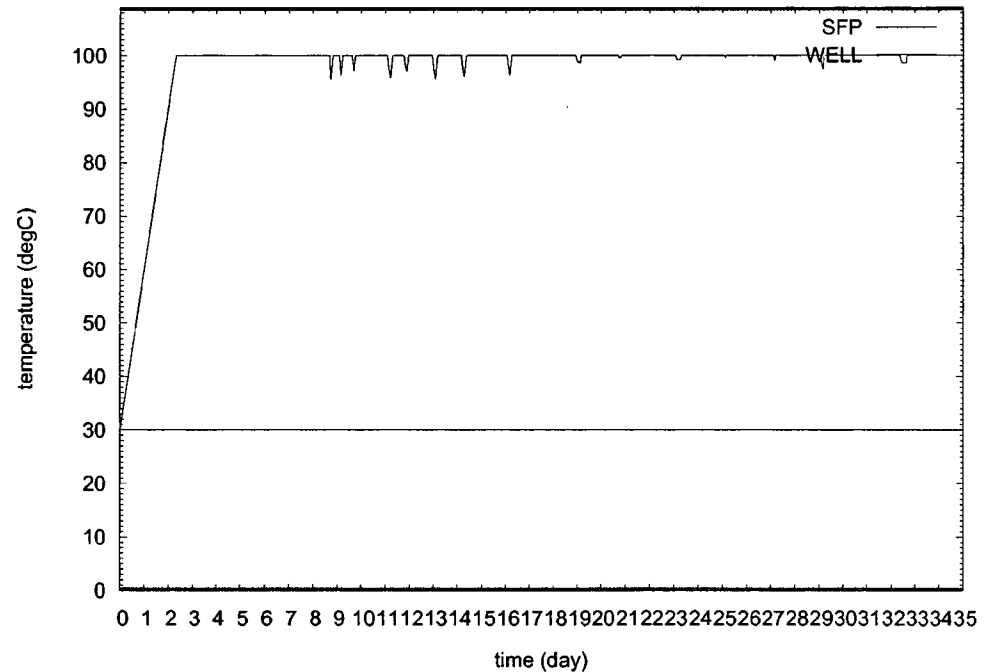
Scenario 3: Hydrogen from 1F3 (3/3)

- **H₂ came from Unit 3, with broken pool gate, no crack**
 - Consistent with mass balance
 - If radioactive materials came from sea water or fall out from Unit 2, this is consistent with dose measured on April 12

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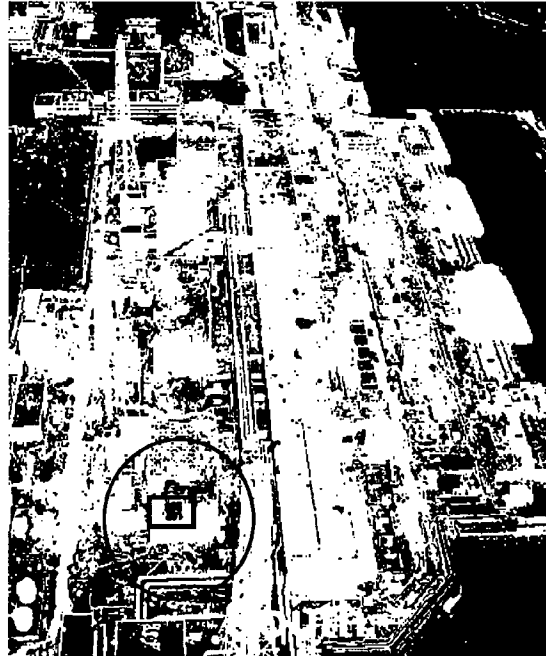
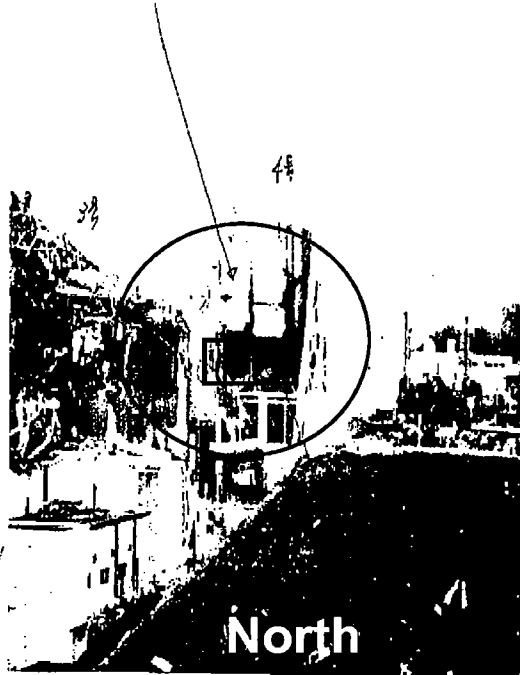
Water level (m)



Temperature (°C)

Scenario 4: MG-set lubricant

State of broken panel at 1F4



Scenario 4: MG-set lubricant

- Distribution of broken panel at 1F4 shows that the floor the MG-set located in is broken widely
- Plenty of lubricant oil is included in the MG-set room
- The oil mist generated by the temperature increase and the cease of circulation fan operation might be the source of explosion

North

L1					
L2					
L3					
L4					
L5					
L6	A	B	C	D	E

South

	E	D	C	B	A

East

	6	5	4	3	2	1

West

	1	2	3	4	5	6

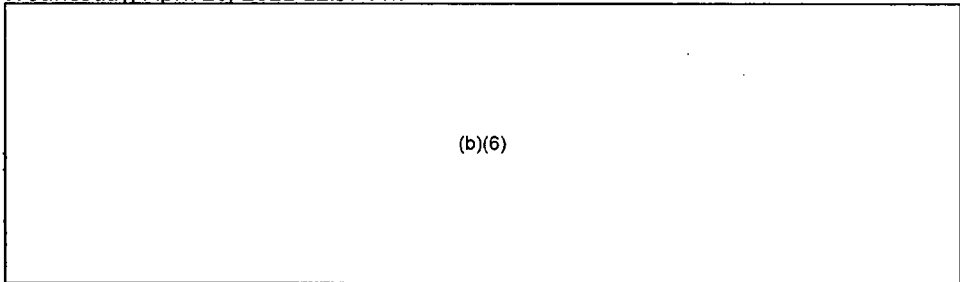
- L1~L6 : Floor No. See
- 1~6: Panel No. (North - South: See)
- A~E: Panel No. (East - West)

Fig.1 Distribution of Broken Panels at 1F4

Conclusion

- **Several assessments based on possible scenarios have been made**
 - Assumption will be modified as new information would be obtained
- **At present, cause of explosion is not clear**
 - A hypothesis that huge oxidation of cladding at SFP was not occurred is conceivable
 - Still, there is a possibility that fuel rod rupture might occur at 1F4
 - Sea water injection as well as 1F2 explosion could affect the dose of the 1F4/SFP
- **Important thing is not to expose fuel to atmosphere**
 - Belief in SFP being full based on skimmer surge tank level was not very good

From: RST01 Hoc
Sent: Wednesday, April 20, 2011 12:57 PM
To:



Subject: 3 am call notes 4/20/11

Here are the call notes from the 3am call on 4/20/11

Let me know if you have any questions,

Mike

Mike Brown
Reactor Safety Team

Japan Team 3:00am Phone Call

Participants:

NRC OPS Center
NRC Japan Team
INPO
NR

No Major Plant Status Changes

Injection Flow rates are as follows:

U-1 6m³/ hr via feed-water line (26 gal/min)
U-2 7m³/ hr via fire protection line (30 gal/min)
U-3 7m³/ hr via fire protection line (30 gal/min)

Inerted:

U1 N2 20m³/hr
U2 No N2
U3 Are attempting or progressing toward establishing Inerting to the PCV

Fuel Pool Water added:

U-2 47 Ton yesterday
U-3 30 Ton

U-4 100 Ton later today

Pumping water directly or indirectly out of the Turbine Building which some measurable water drop. Pumping to Common Rad-Waste Facility on SW side of the Site.

Tepco - has provided an Assessment of the Spent Fuel Pool of Fukushima Daiichi Unit 4 and have requested the advice from NRC / Consortium on thoughts and advice on what caused the damage to the Unit 4 Reactor Building.

Specifically The Japan Team would like to provide Tepco with our recommendations / assessment on this topic before the EOB Thursday Swing Shift EST to provide feedback to Japan at a meeting scheduled for Thursday Japan time at 4:00pm.

Specifically the Japan Teams needs

- 1) Advice on other possible U4 SFP damage scenarios
- 2) How to improve defense in-depth to preclude energetic release from U4 SFP and
- 3) Should a Misting device (such as the Oconnee B5b Nozzle) be staged in the event of an unisolable leak from the SFP.

This is important because if the spent fuel has not been previously damaged then there is a potential for additional significant release of radionuclide's and H2 if further damage to the pool would occur.

A list of Day/Swing Shift questions from the 11:00am call and turnover sheet was forwarded to the Japan Team. No discussion of these occurred on the 3:00am call.

There appears to be some missed communication between the Japan Team and the EOC. It was requested that we send requests and informaiton directly to the members of the Japan Team.

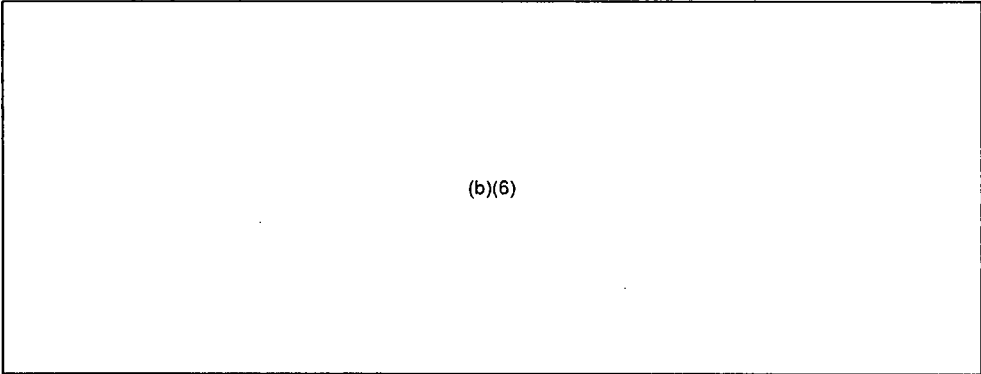
Lupold, Timothy; Mitman, Jeffrey; Garchow, Steve; PMT_japan Resource

Not sure if the PMT_japan Resource goes anywhere?

The Five Questions Sent are as follows:

1. Ask TEPCO what is the strategy once unit 1 is at TAF. Is there a way to recirc and cool containment/torus? Are they going to continue to inject at a low rate to make up for boiling and vent steam? What affect will this have on salt/boron etc.?
2. What is the current pump head/max RPV injection rate for all units (1, 2, 3)?
3. Send basis as to why TEPCO believes unit 1 is only at 4 ft in containment?
4. How accurate are the injection rates to each vessel how is that determined by TEPCO?
5. How accurate (valid) is other instrumentation associated with SFP and PCV level and temperatures?

From: RST01 Hoc
Sent: Wednesday, April 20, 2011 9:29 AM
To:



Subject: Agenda for 1100 call today
Attachments: April 20 rev1 1100 Agenda.docx

Here is the Agenda for the 11am Technical call today.

Let me know if you have any questions or if there is something else I should add.

Thanks,

Mike

Mike Brown
Reactor Safety Team

Agenda: Technical Consortium Call

Date/Time: April 20 Rev1, 2011/11:00 AM

Old Business:

- **Further discussion on N2 injection into a containment with a high steam generation rate:**

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- **TEPCO Road Map Discussion.**

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-
-

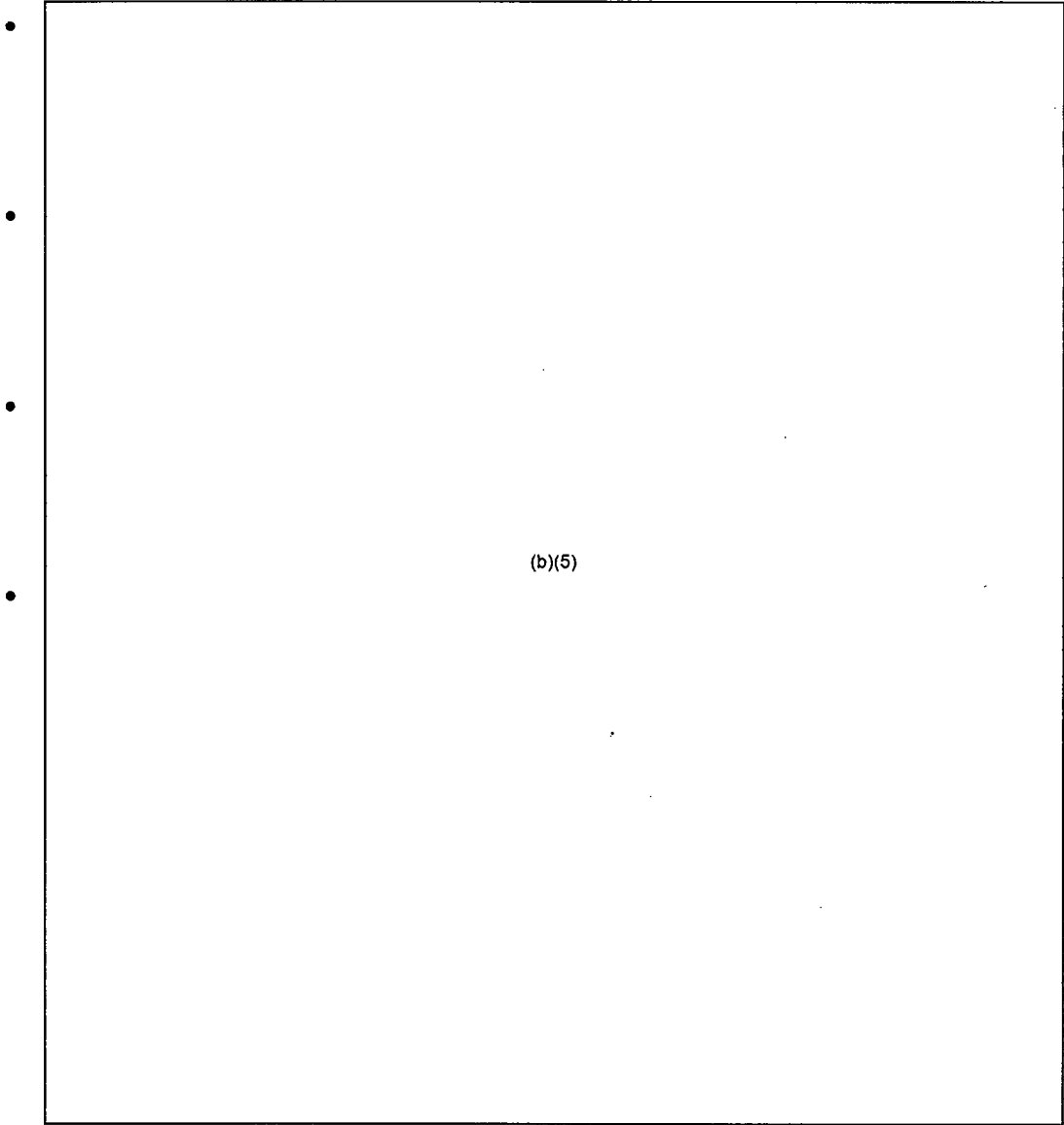
New Business:

-
-

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-

(b)(5)



(b)(5)

From: RST01 Hoc
Sent: Tuesday, April 19, 2011 5:59 PM
To:

(b)(6)

Subject: FW: Action Items from Today's Senior Level Meeting with TEPCO and NISA
Importance: High

All,

Below are some major actions items received from the Japan Site Team. This will be added to the agenda for the Technical Consortium call tomorrow. We will be in touch with the Japan Site Team today to obtain further clarification.

RST

From: Garchow, Steve
Sent: Tuesday, April 19, 2011 5:52 PM
To: RST01 Hoc
Subject: FW: Action Items from Today's Senior Level Meeting with TEPCO and NISA
Importance: High

We would like to discuss these during the morning call.

Steve

From: Reynolds, Steven
Sent: Tuesday, April 19, 2011 5:54 AM
To: Garchow, Steve
Cc: Casto, Chuck
Subject: Action Items from Today's Senior Level Meeting with TEPCO and NISA
Importance: High

Steve,

I think I noted four major action items from our senior level meeting today.

Here is what I have:

- 1.
- 2.
- 3.

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4.

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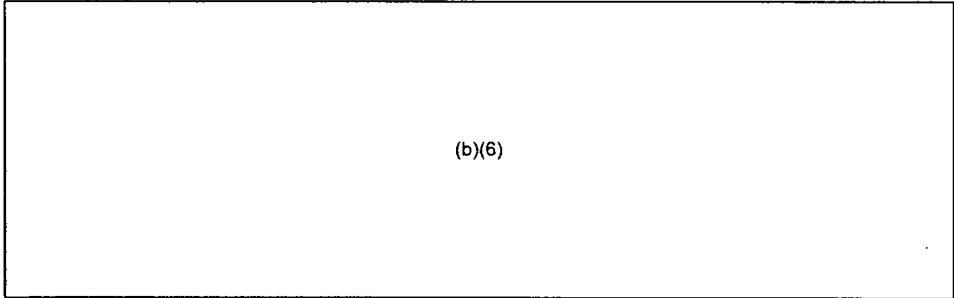
Let me know if I missed something or have confused one of the above items.

I think we should put an emphasis on item #4.

We should consider getting these action items to the RST in HQ ASAP and get them cranking on these.

Thanks,
Steve

From: RST01 Hoc
Sent: Tuesday, April 19, 2011 5:32 PM
To:



Cc: Hiland, Patrick; Skeen, David
Subject: FW: Tepco Roadmap and Water Injection System Comments
Attachments: Question 472 response.pdf; Question 459 response.pdf

All,

GEH had no comments on the TEPCO roadmap.

RST

From: GE Hitachi Nuclear Response Team (GE Power & Water) [mailto:GE.HitachiNuclearResponseTeam@ge.com]
Sent: Tuesday, April 19, 2011 4:32 PM
To: RST01 Hoc
Subject: Tepco Roadmap and Water Injection System Comments

NRC,

GEH has no comments on these items.

Thanks,
Jeff Hren

Question 459 –

(b)(4)

Response 459 –

(b)(4)

GEH Proprietary Information
Information Not Verified
April 19th 2011

Copyright 2011 GE-Hitachi Nuclear Energy Americas LLC, All Rights Reserved

Question 472 –

(b)(4)

Response 472 –

(b)(4)

GEH Proprietary Information
Information Not Verified
April 19th 2011

Copyright 2011 GE-Hitachi Nuclear Energy Americas LLC, All Rights Reserved

From: RST01 Hoc
Sent: Tuesday, April 19, 2011 5:31 PM
To:

(b)(6)

(b)(6)

Cc: Hiland, Patrick; Skeen, David
Subject: FW: Nitrogen Inerting Question
Attachments: Q473 - Inerted Condition Final.pdf

All,

Attached is GEH's assessment of Nitrogen Purging of the Fukushima Daiichi plants.

RST

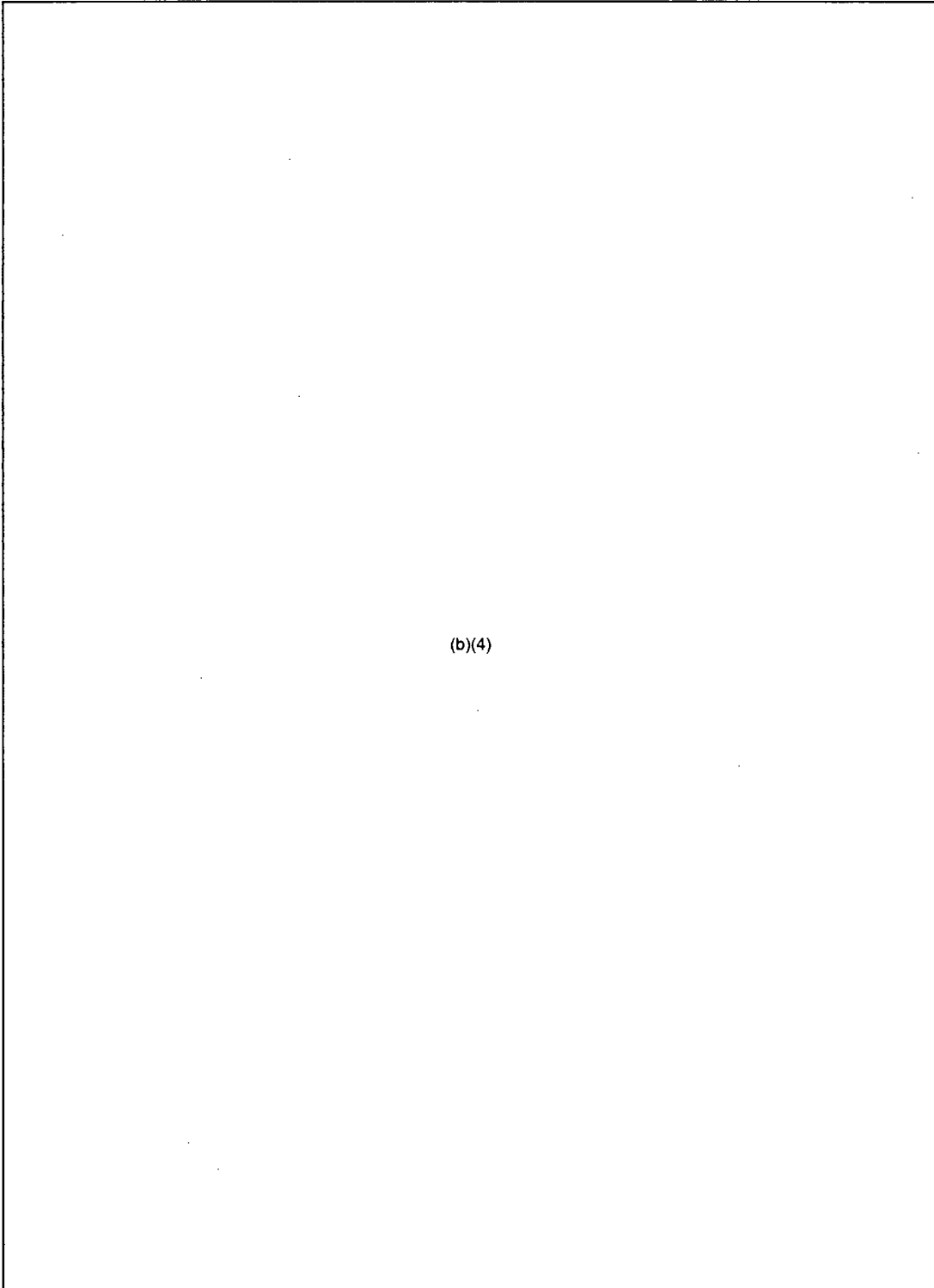
From: GE Hitachi Nuclear Response Team (GE Power & Water) [mailto:GE.HitachiNuclearResponseTeam@ge.com]
Sent: Tuesday, April 19, 2011 4:14 PM
To: RST01 Hoc
Cc: GE Hitachi Nuclear Response Team (GE Power & Water)
Subject: Nitrogen Inerting Question

NRC,

Please see the attached response to your question.

Thanks,
Jeff Hren

Q 473 Subject – Inerted condition of 1F1, 1F2 and 1F3



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(b)(4)

From: Bell, Stephen T CIV SEA 08 NR <(b)(6)>
Sent: Tuesday, April 19, 2011 4:44 PM
To: (b)(6)
Subject: RE: 11:00am Technical Consortium Summary
Attachments: April 19 1100 Summary_bell.docx

For your info/use: The attached markup includes two other action items I had in my call notes, as well as some background on why RST was asking about the basis for the stated water level of 4 ft in the Unit 1 drywell.

Steve Bell
Naval Reactors

-----Original Message-----

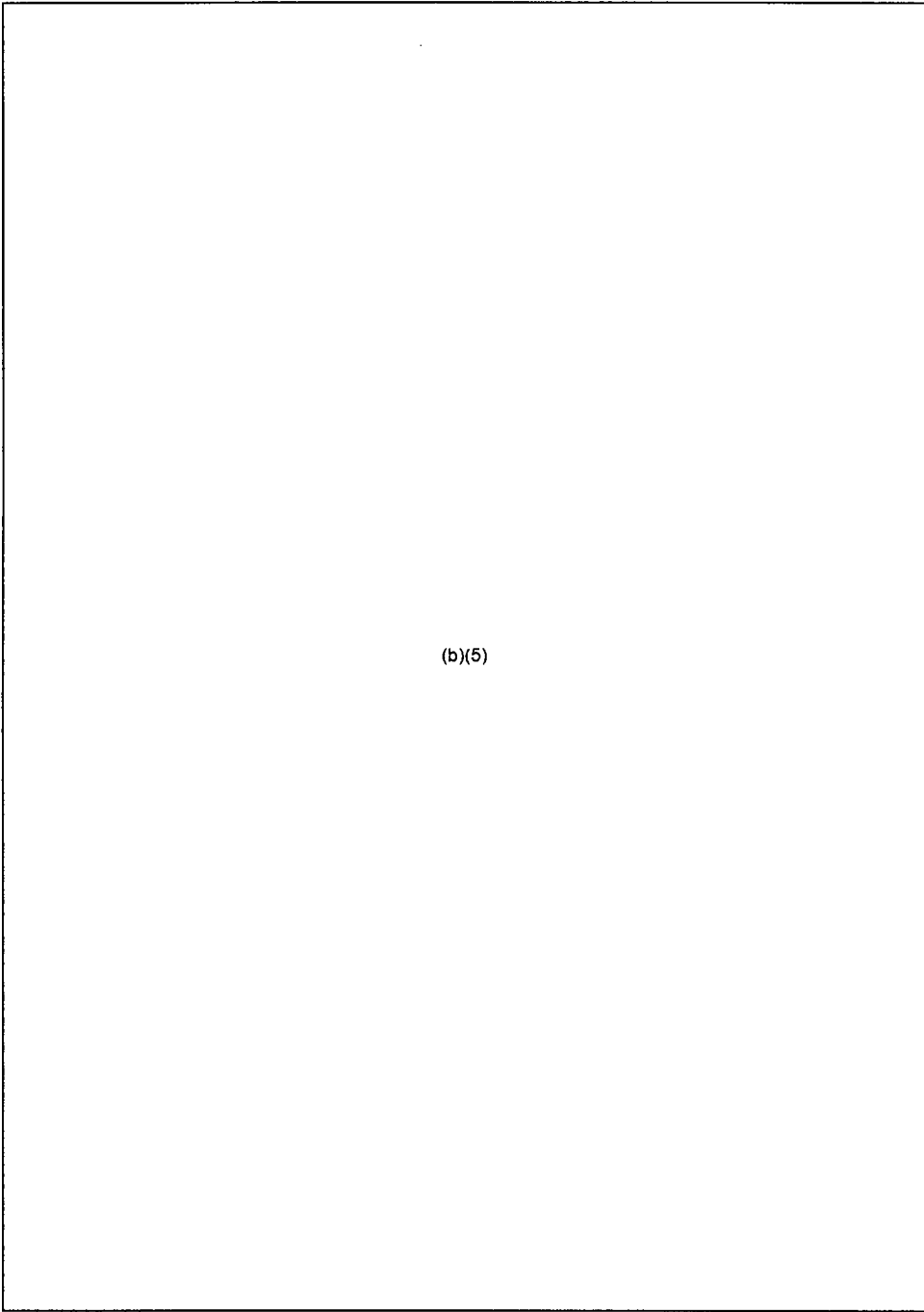
From: RST01 Hoc [mailto:RST01.Hoc@nrc.gov]
Sent: Tuesday, April 19, 2011 3:39 PM
To: (b)(6)
(b)(6)

Subject: 11:00am Technical Consortium Summary

All,

Attached is the 11:00am Technical Consortium Summary.

RST



(b)(5)

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(b)(5)

From: Mitman, Jeffrey
Sent: Wednesday, April 20, 2011 9:51 PM
To: (b)(6)
Cc: Moore, Carl; Lupold, Timothy; Norwood, Donald
Subject: FW: DOE Analyses related to Fukushima event
Attachments: F-1-02 Assessment of Long Term Passive Cooling Viability for Fukushima Units - with cover sheet r1.pdf; F-1-04 Unit 4 Explosion Assessment - rev 2 04 06 11 With Cover r1.pdf; F-2-01 Reactor Coolant Options Study with cover.pdf; F-2-03 DOE Options for Contaminated Wate treatment 7 Apr2011 - with cover r1.pdf; F-2-04 Marine discharge with cover.pdf; F-4-02 DOE Perspective on Fukushima Corrosion rev2 with cover r1.pdf; F-4-03 DOE Corrosion Mitigation Concepts with cover.pdf

Randy, the attached analysis cam in yesterday. Some of it may be useful.

Jeff Mitman
NRC Japan Team

From: RST01 Hoc
Sent: Wednesday, April 20, 2011 11:48 AM
To: PMT_japan Resource
Cc: Mitman, Jeffrey; Reynolds, Steven; Garchow, Steve
Subject: FW: DOE Analyses related to Fukushima event

FYI.

From: RST01 Hoc
Sent: Tuesday, April 19, 2011 3:44 PM
To: RST02 Hoc
Subject: FW: DOE Analyses related to Fukushima event

From: RST01 Hoc
Sent: Tuesday, April 19, 2011 2:41 PM
To: Hiland, Patrick; Skeen, David
Subject: FW: DOE Analyses related to Fukushima event

Pat/Dave:

Did we do anything with these? We have Naval Reactor's comments and GEH.

Please let me know if you want me to create a task. I could not find a task on these from April 14, but I may have overlooked it if one is there.

We forwarded these to the consortium for review on April 14. When I got GEH's review, I was unaware the original documents came to them from us; at the 1100 EST phone call I asked DOE if they could release all the documents to us – unaware that we were the ones who sent them out.

I don't know what the solution is to get better at tracking these items, but we (RST) should have been aware that NRC and consortium feedback was due to DOE on April 18.

Larry Criscione
RST

From: Caponiti, Alice [mailto:Alice.Caponiti@nuclear.energy.gov]
Sent: Thursday, April 14, 2011 1:31 PM
To: RST01 Hoc
Cc: Versluis, Rob; Golub, Sal; Larzelere, Alex; Kelly, John E (NE)
Subject: DOE Analyses related to Fukushima event

(b)(5)

Attached is the set of reports that we would like to be distributed to consortium community for information. We would like feedback by **COB Monday, April 18** to identify any major issues or objections to these analyses. Our plan is to provide a list of technical topics (titles, not papers) to the GOJ early next week for their consideration.

Our thanks to RST for providing this forum.

Thanks,

Alice

Alice Caponiti
(on detail to NERT)
(b)(6) cell

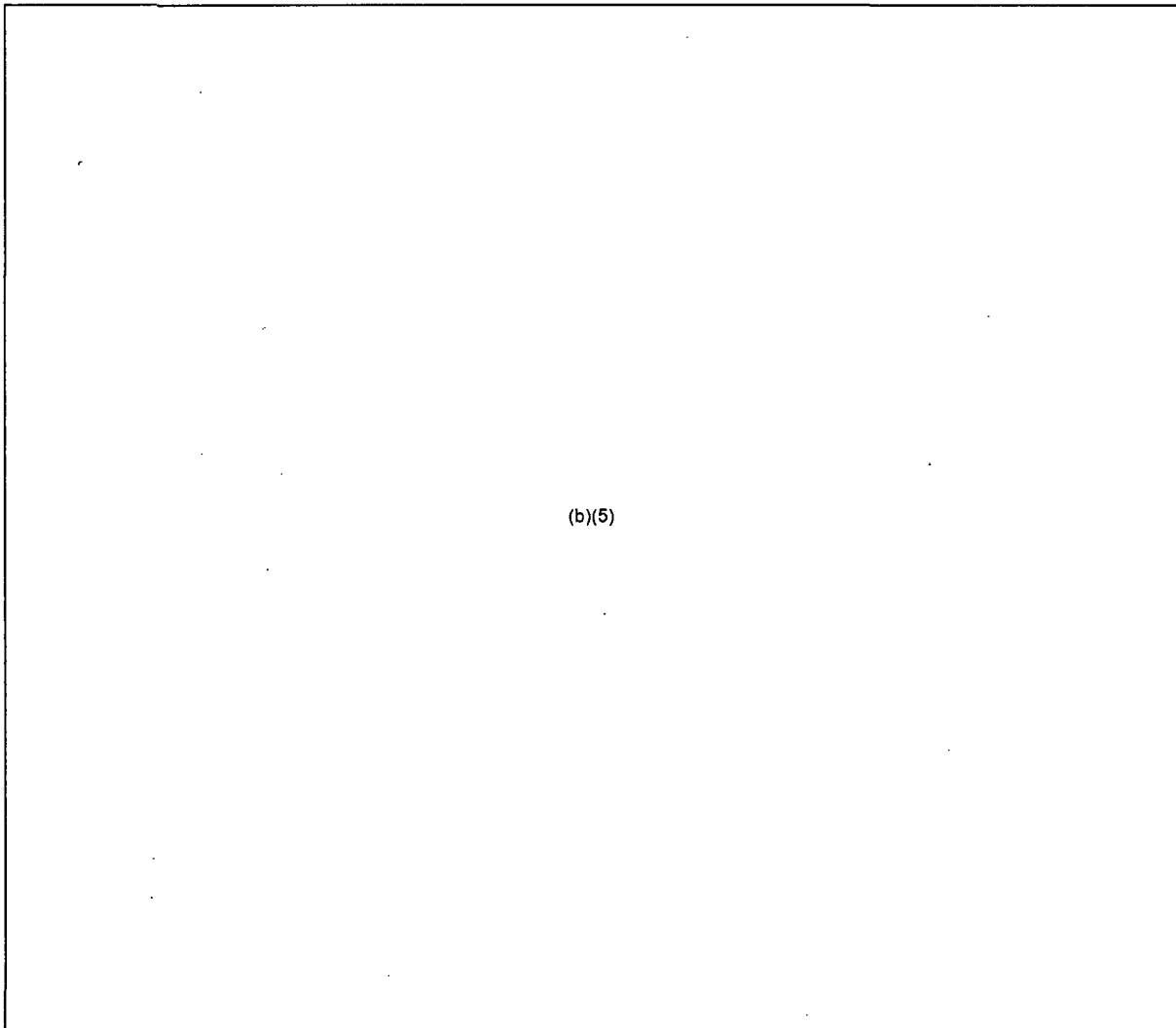
F-2-01 Purpose of Analysis: Identify and evaluate options for establishing long term cooling for reactors at Fukushima

General Overview

It would be helpful to clarify what is recommended vice considered, especially given the various sub-options that exist (e.g., low flow versus high flow, RPV intact vice not, open versus closed loop, etc.). It took several reads through the document to understand the objectives and recommendations.

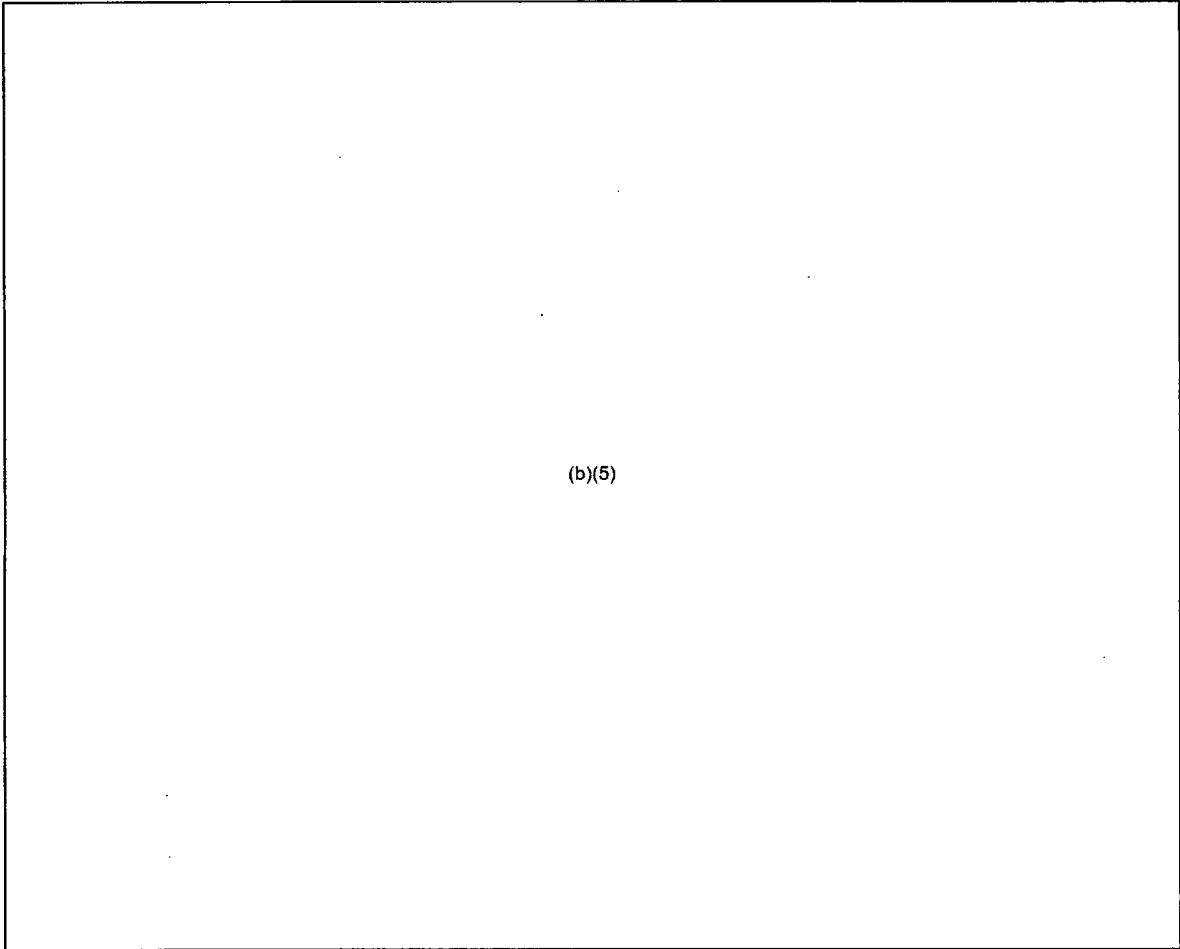
The purpose of the analysis is different from the Key Results/Findings. The purpose of the analysis appears to have changed as the work was done from finding a way to establish recirculation cooling to recommending options for capturing salt and radioactivity removed by flow through the reactor vessel. If so, it would be useful to say so on the cover page

Specific Comments/Questions



(b)(5)

F-1-04 Analysis Title: Assessment of the Possible Causes of the Unit 4 Building Explosion



F-2-03 Analysis Title: Potential Near-Term Options to Mitigate Contaminated Water in Japan's Fukushima Daiichi Nuclear Plant

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Specific Observations:

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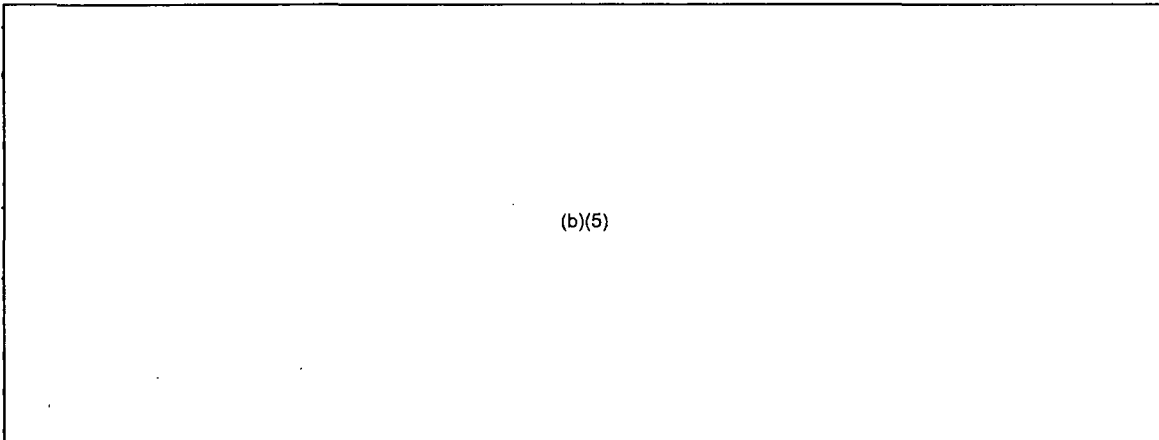
F-4-02/03 Analysis Title: DOE Perspective on Corrosion Issues at Fukushima
Analysis Title: Perspective on corrosion issues at Fukushima

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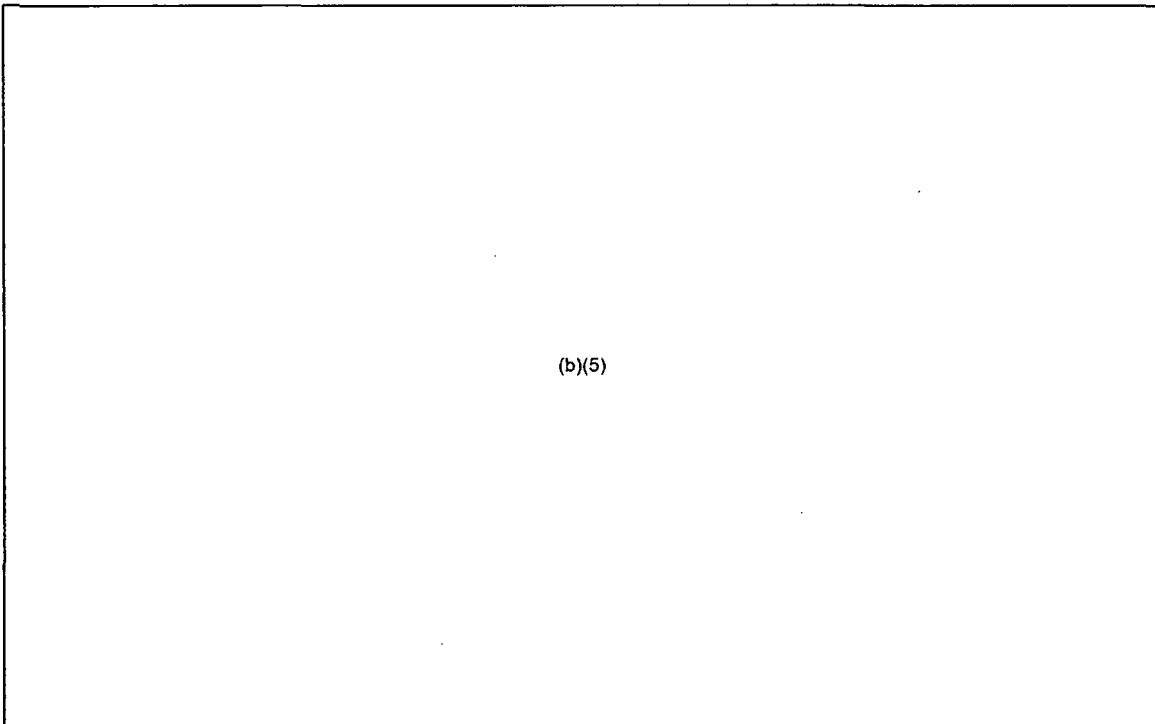
F-1-02: Assessment of Long Term Passive Cooling Viability for Fukushima Units 1-3

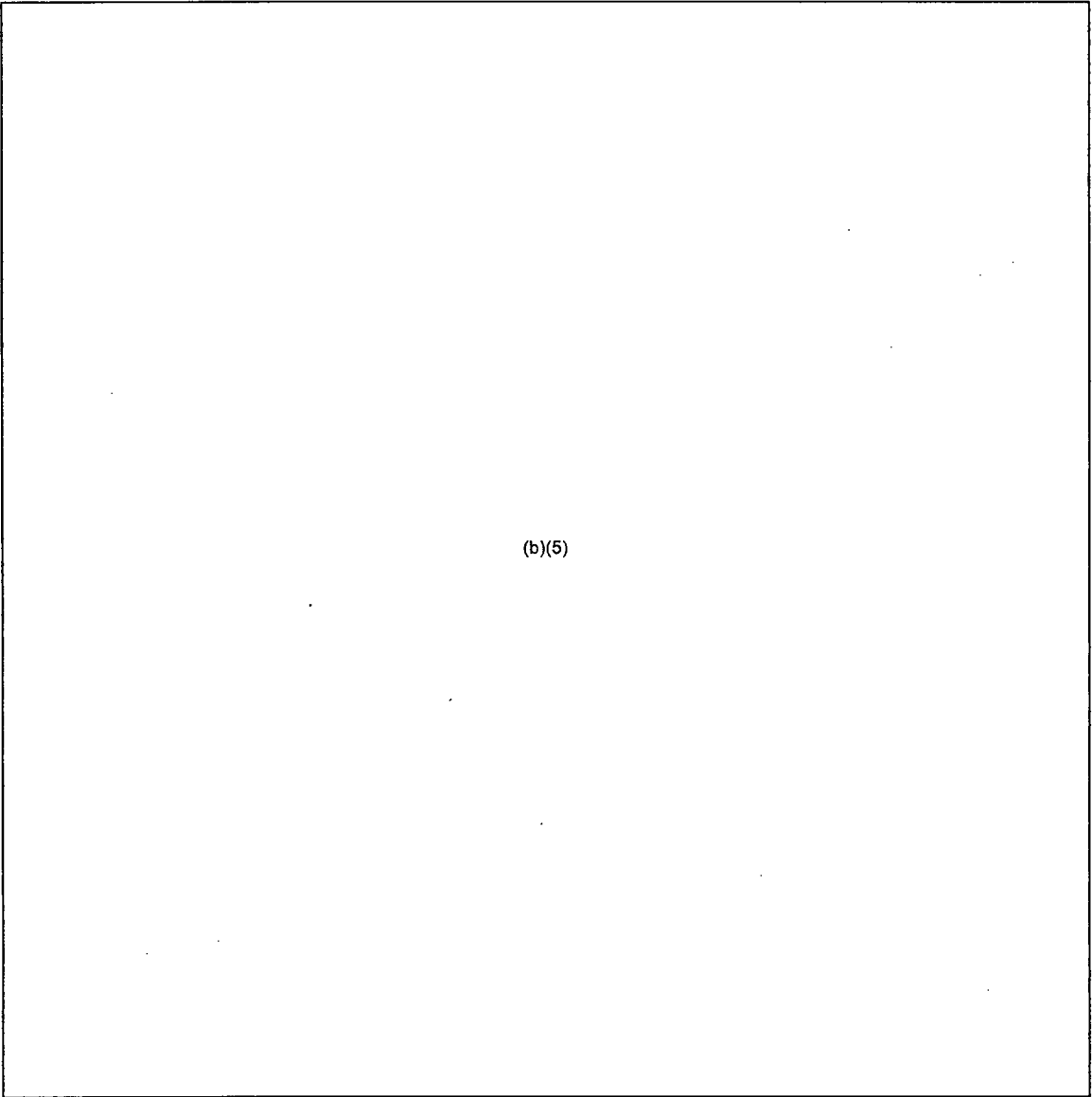
The significant conclusion from the paper is that passive means of dissipating decay heat from the reactor core is inadequate for a long period of time with the reactor plant in its normal configuration.

Over 350 days (about a year) is needed before the decay heat generation rate is low enough to dissipate the decay heat through the reactor containment, shielding and reactor building walls.



Comments:





(b)(5)

Japan Accident Response National Laboratory Analysis Record

Analysis Number: F-1-02

Analysis Title: Assessment of Long Term Passive Cooling Viability for Fukushima Units 1-3

Author(s) (NLs): M. T. Farmer (ANL) **Date Prepared:** 31 March 2011

Reviewer(s) (NLs): G. Yoder and G. Flanagan (ORNL); C. Grandy (ANL)

Date Reviewed: 2 April 2011

Distribution Limitation: None

(b)(5)

Assumptions: See attached document.

Input Information/References: See attached document

Information contained in this document is preliminary, and is not meant to serve as a recommendation for action

Assessment of Long Term Passive Cooling Viability for Fukushima Units 1-3
M. T. Farmer, March 31, 2011

(b)(5)

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a recommendation for action**

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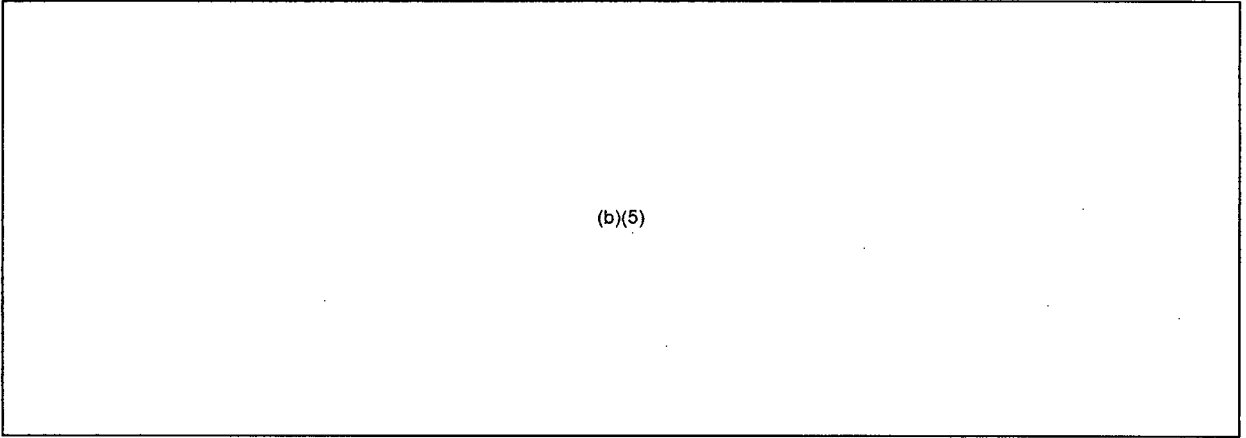
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References



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Pre-decisional
April 6, 2011

Japan Accident Response National Laboratory Analysis Record

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Pre-decisional
April 6, 2011

Assessment of the Possible Causes of the Unit 4 Building Explosion

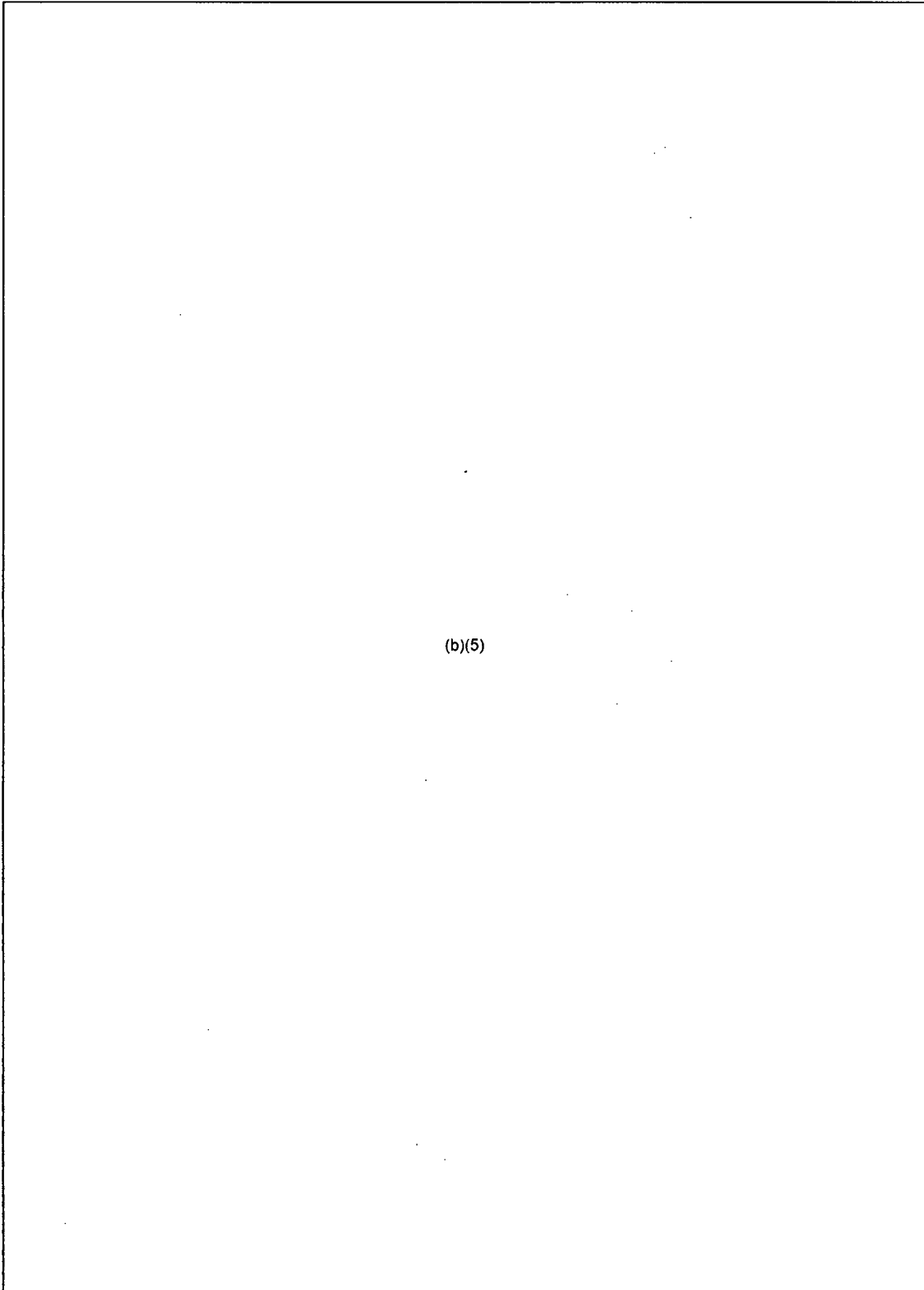
Summary of Assessment

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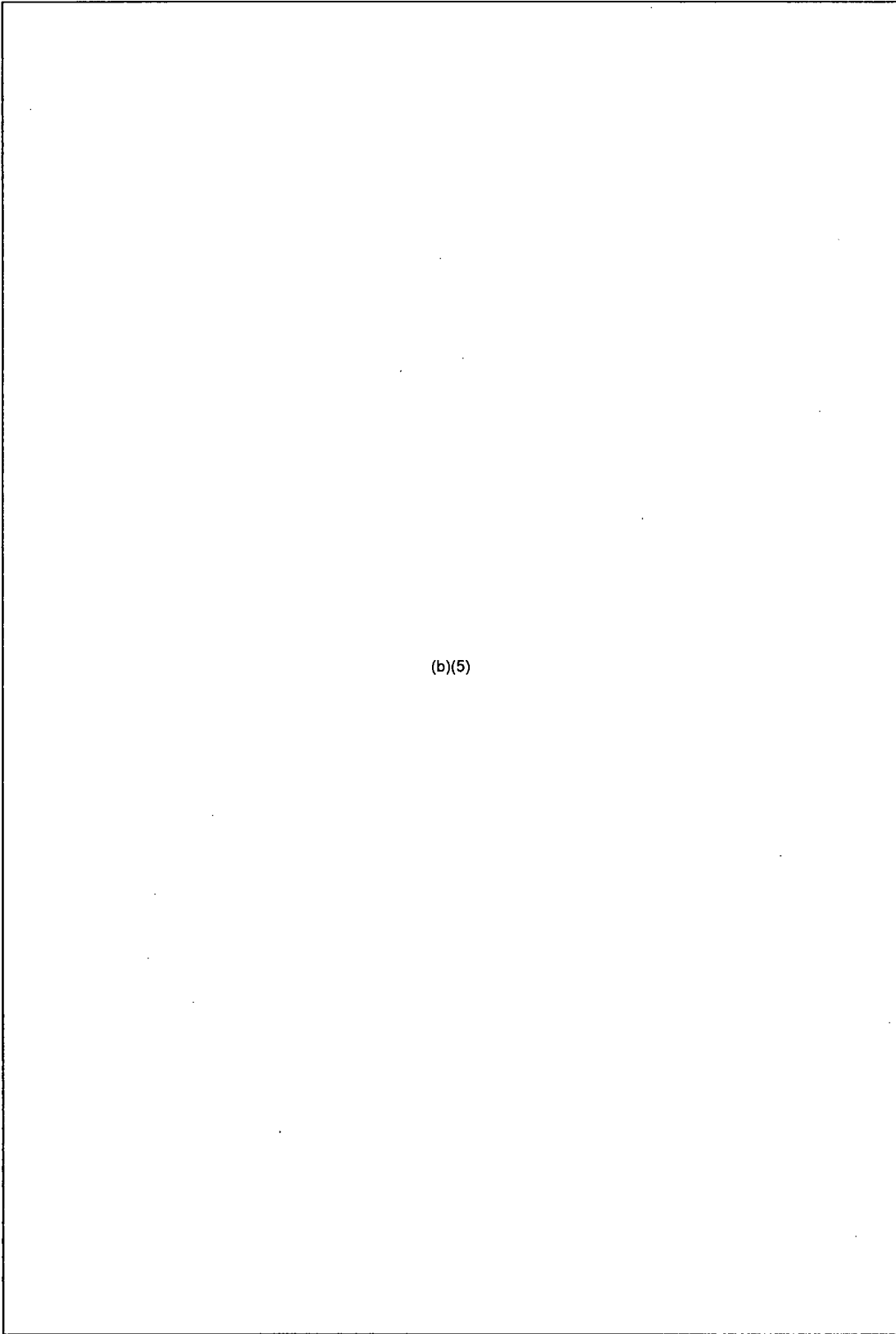
Pre-decisional
April 6, 2011

Background



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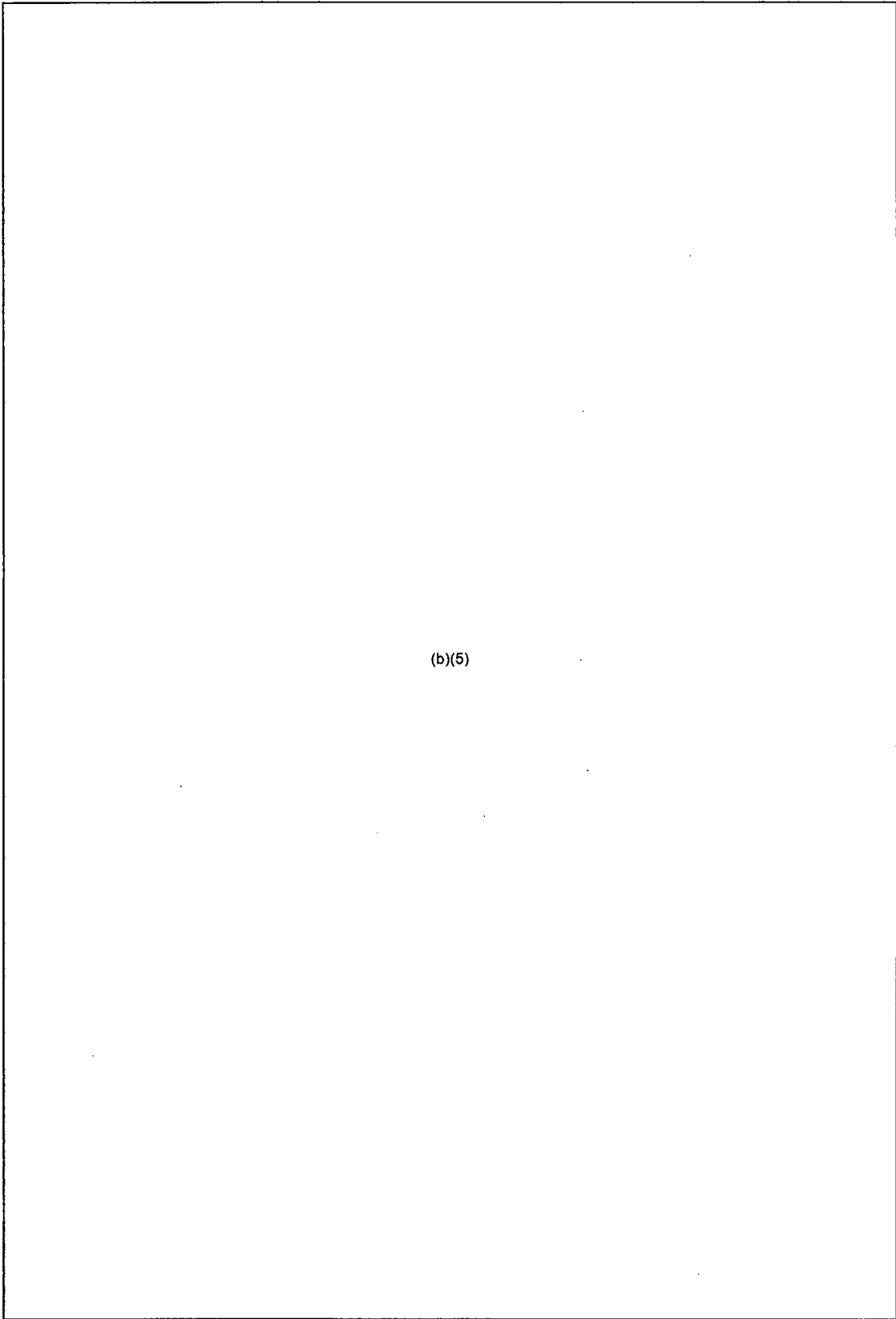
Pre-decisional
April 6, 2011



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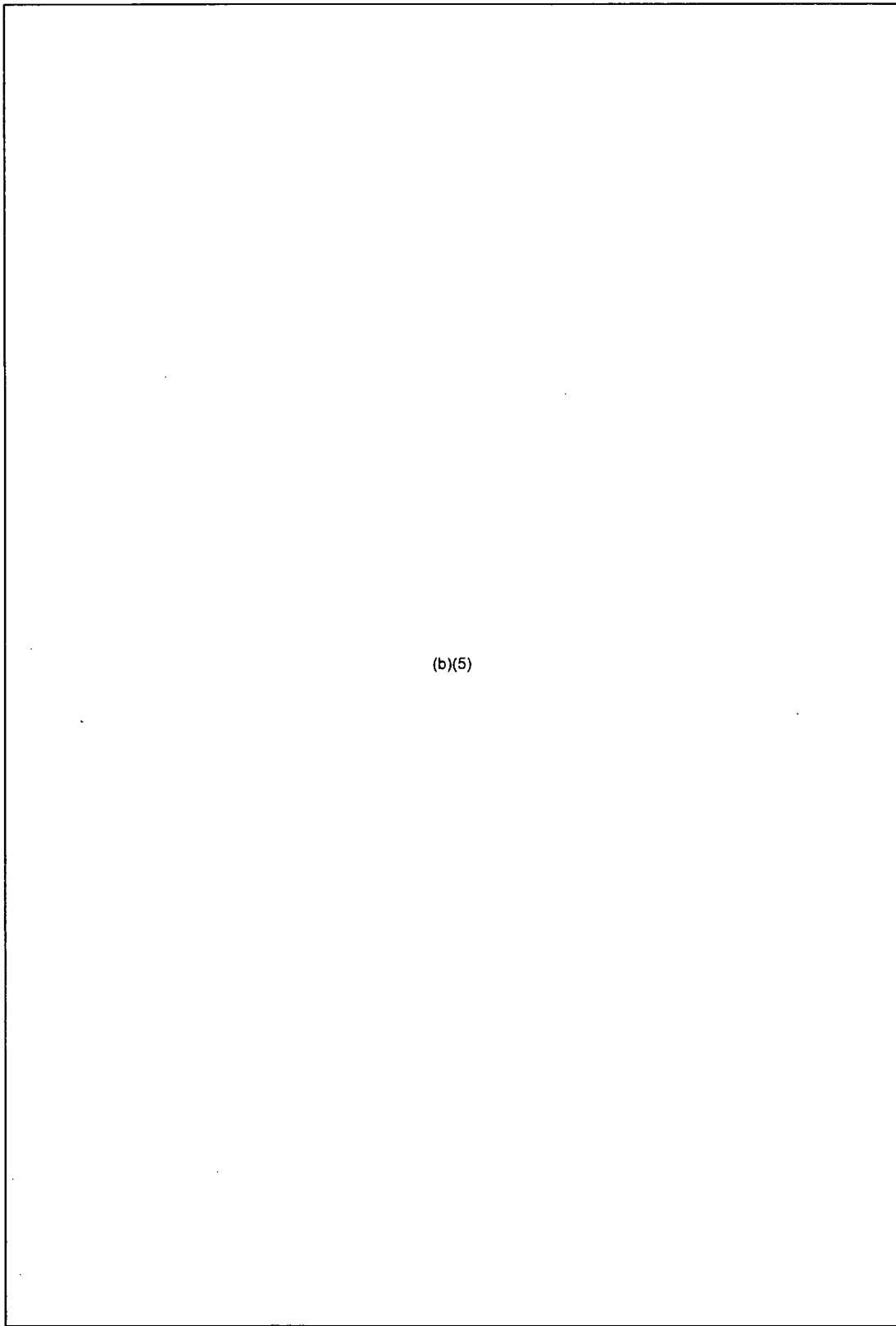
Pre-decisional
April 6, 2011



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Pre-decisional
April 6, 2011



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April 6, 2011

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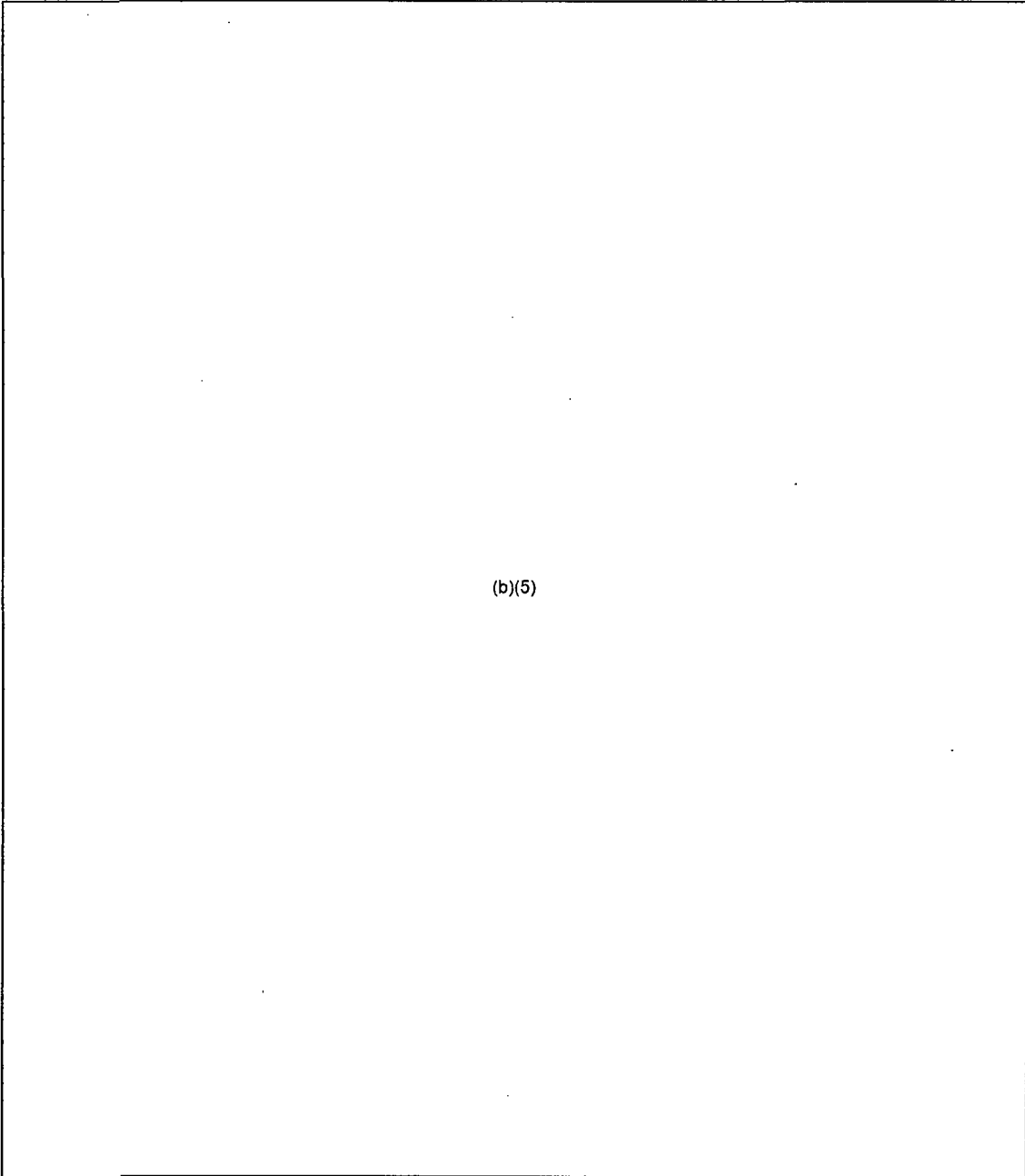
**Japan Accident Response
National Laboratory Analysis Record**

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**Information contained in this document is preliminary, and is not meant to serve as a
recommendation for action**

April 7, 2011
Fukushima Reactor and Containment Vessel Cooling

Options Study



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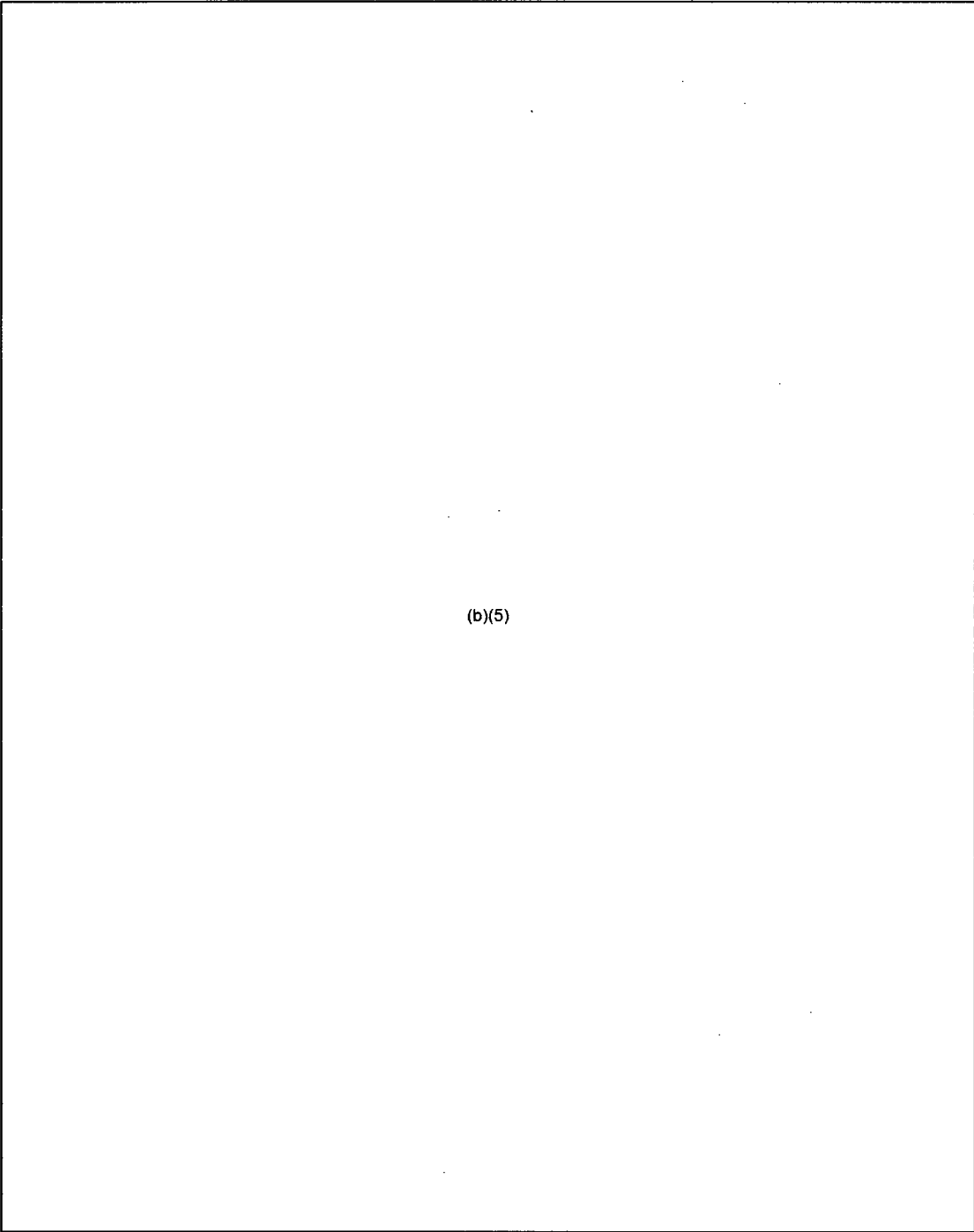
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Appendix A
Trade Studies

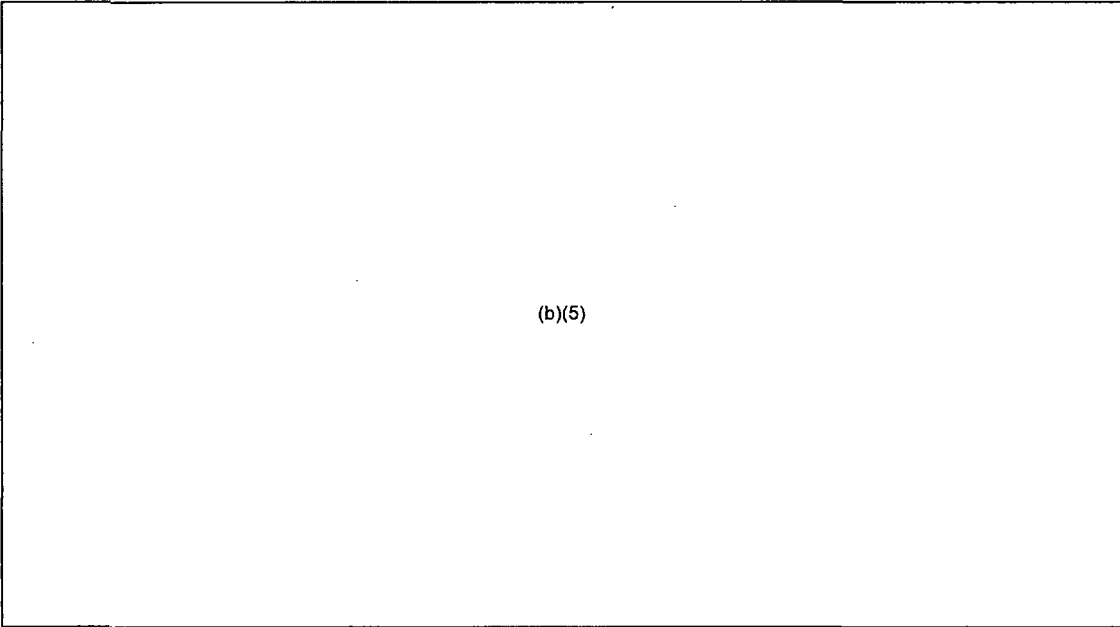
Information contained in this document is preliminary, and is not meant to serve as a recommendation for action

Once Through vs. Recirculation Trade Study



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Information contained in this document is preliminary, and is not meant to serve as a recommendation for action



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Operating Configuration Options Trade Study

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(b)(5)

Information contained in this document is preliminary, and is not meant to serve as a recommendation for action

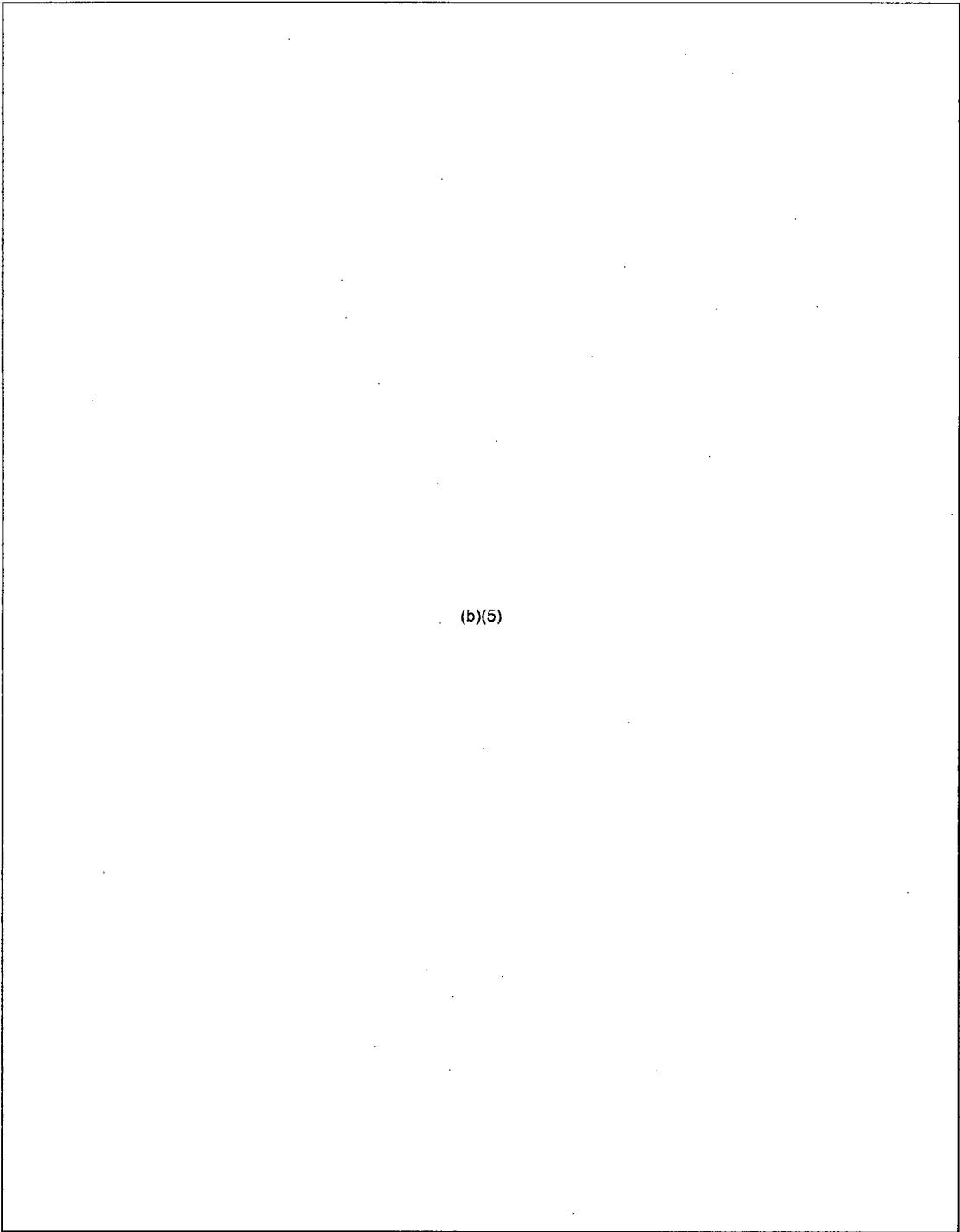
(b)(5)

Information contained in this document is preliminary, and is not meant to serve as a recommendation for action

Treatment Options Trade Study

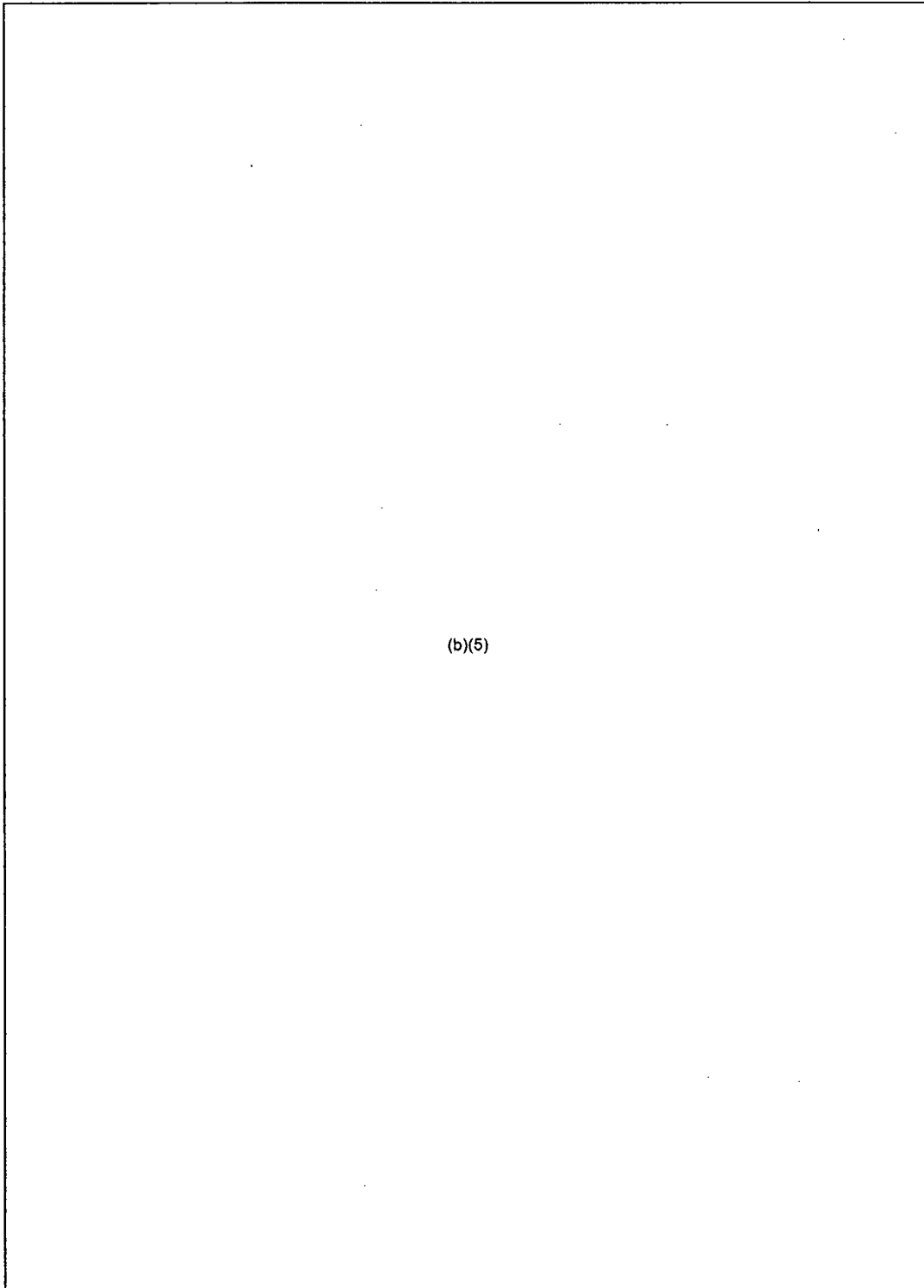
(b)(5)

Information contained in this document is preliminary, and is not meant to serve as a recommendation for action



(b)(5)

Information contained in this document is preliminary, and is not meant to serve as a recommendation for action



(b)(5)

Information contained in this document is preliminary, and is not meant to serve as a recommendation for action

(b)(5)

Information contained in this document is preliminary, and is not meant to serve as a recommendation for action

Reactor Cooling Trade Study

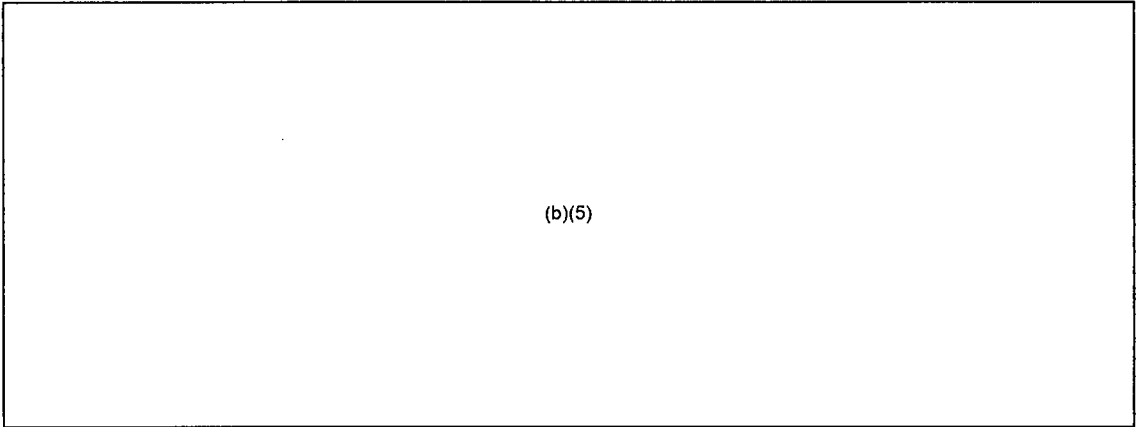
(b)(5)

Information contained in this document is preliminary, and is not meant to serve as a recommendation for action

(b)(5)

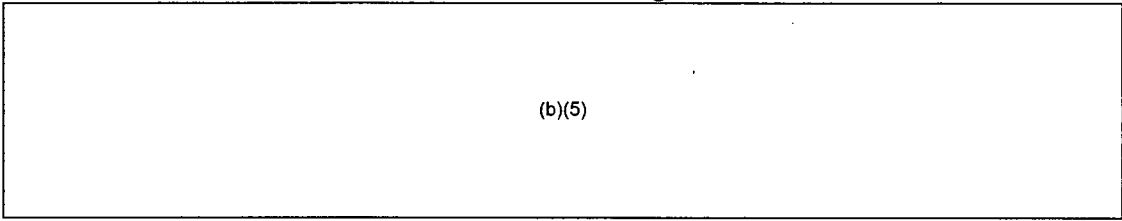
Information contained in this document is preliminary, and is not meant to serve as a recommendation for action

Preferred Option

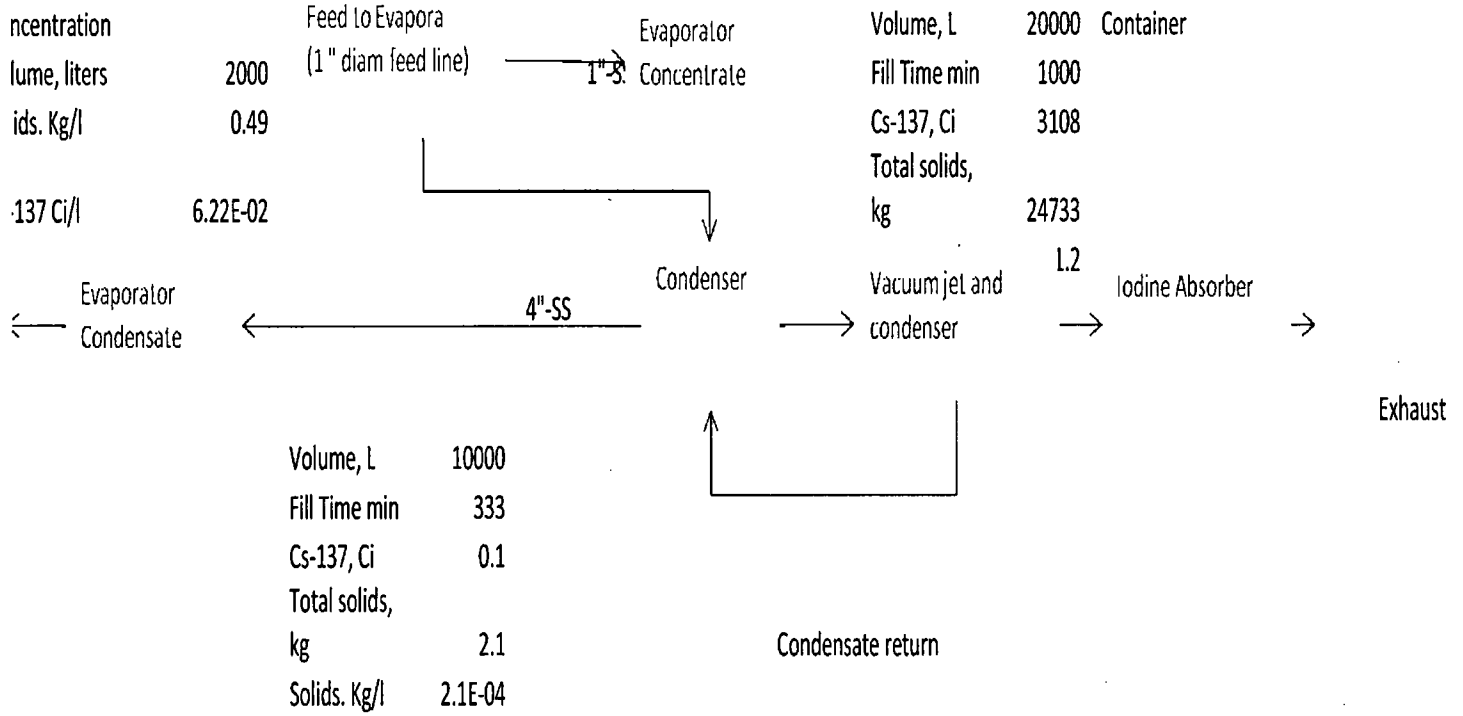


Appendix B

Process Flow Diagrams



tial concentration



ut color
licator

		Evaporator	Evaporator	Evaporator
		RHR out	Concentrate	Condensate
		Reactor outlet		
		outlet		
Evaporator split			0.4	0.6
total mass	Kg/min	62	32	30
flow rate	liters/min	50	20.0	30.0
temperature	°C	100	50	30
pressure	psia	15	NA	3
total solid flow	Kg/min	24.7	24.7	0.01
dissolved Solids	Kg/min	0.0	13	0
density		1.24	1.6	1
Cs-137	Ci/min	3.11E+00	3.1	3.1E-04
Ba-140	Ci/min	1.32E+00	1.3	1.3E-04
I-131	Ci/min	5.27E+00	2.6	2.64

Note: initial splits in feed stream. As salt is removed split will change but ratio to Cs

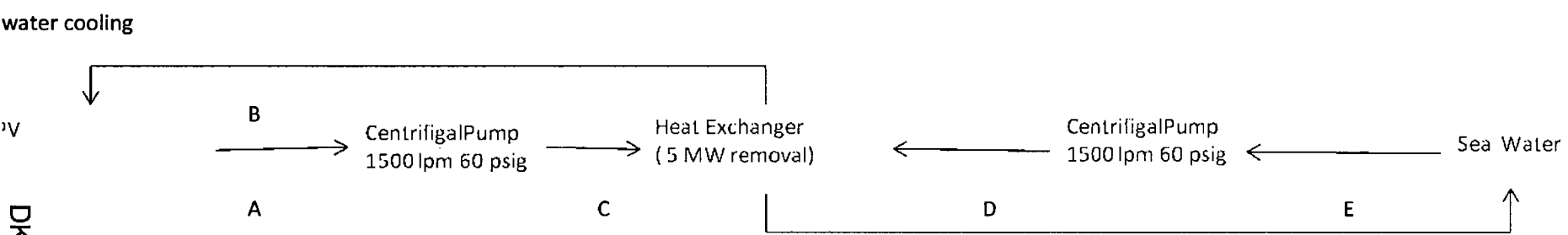
will be the same. Precipitation will occur at different rates and possibly enhance Cs in RPV solids

at capacity	cal/g/C°	1	
con factor			10000
dissolved solids		40%	
ubility limit	g/g	0.398	0.357

Langes handbook of chemistry

spg	NaCL g/l
1.005	10.05
1.1162	178.6
1.1972	311.3
1.243	493

References
 [Redacted] Reported 3/27/11 concentrations from NISA website

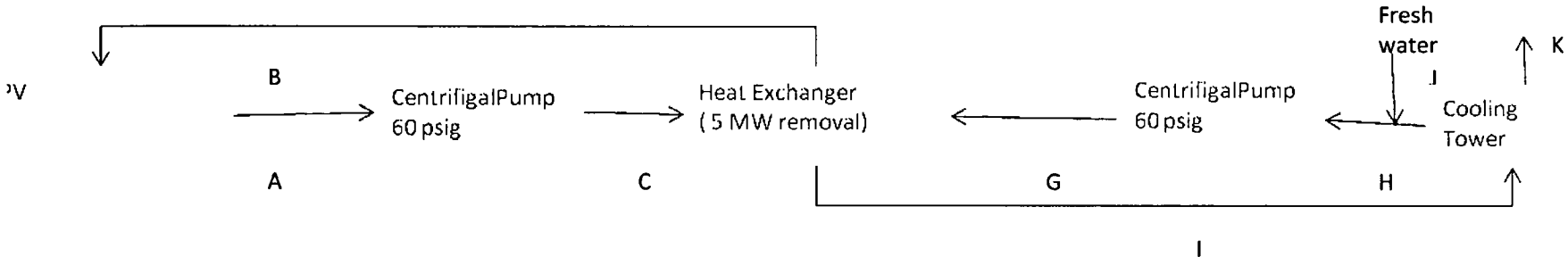


DK 268 of 1892

	A	B	C	D	E	F
in		1440			1571	
/min	1200	1200	1200	1555	1555	1555
	100	40	100	20	20	70
		5423			5423	

°C 0.9 1

water cooling with cooling tower



in	A	B	C	G	H	I	j	k
g/min	1150	1150	1150	1863	1863	1863	131	Vapor
	100	40	100	60	50	90	20	50
		-5197			5197	-5197		5197
°C		0.9			1			

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10000 m³

1800 L/min

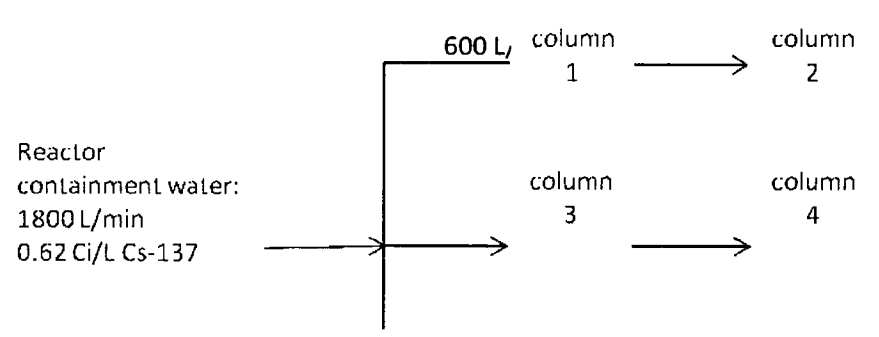
1 MT/m³

2.5 wt%

comments
assume to
be metric
ton

assumed
to be
water but
will be
greater
due to salt

Cs-137 removal with Zeolite IE-95



0.42 eq/L diluted sea water 600 L/min
 1 wt%
 0.17 eq/L diluted sea water 600 L/min

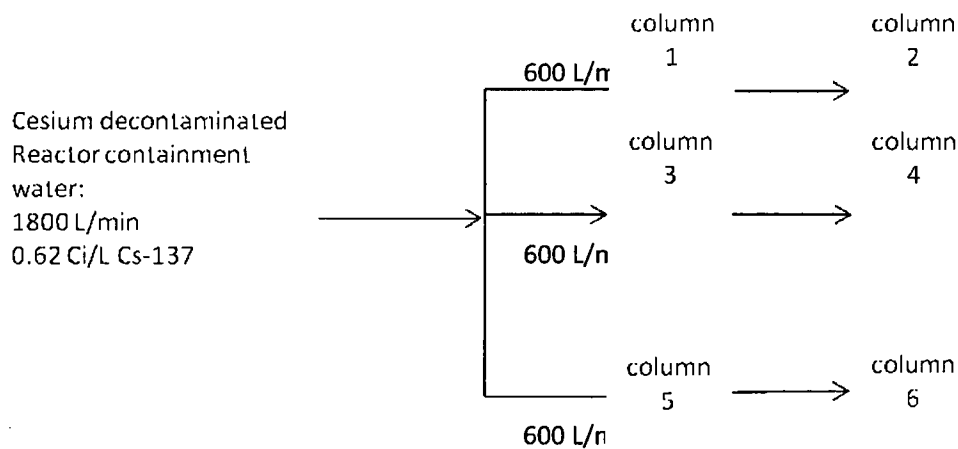
█ bq/ml
 █ bq/ml
 █ bq/ml
 6.22E-01 Ci/L
 1.32E-01 Ci/L
 3.51E+00 Ci/L

1.00E+03 BV Bed volumes: Garrett Brown estimate based on work with tank waste
 10 BV/hr Bed volumes/hr

600 L/min
 3600 L calculated
 951 gallons calculated
 2.24E+06 Ci calculated

2 eq/L typical
 3 m may be too tall
 6 m
 42.41 m³ calculated

Decontamination of reactor containment water with mixed bed ion exchange



Column size: 42.4 m³
 Total resin: 2120 m³

4.24E+04	L	calculated
		Dow Water
		and
4.5	m	Process
		solutions
		Dow Water
		and
2 to 24	gpm/ft^2	Process
		solutions
		calculated
2.11E+06	L	(2.5 wt%
		salt)
		calculated
		(2.5 wt%
49.9		salt)
		calculated
		(1 wt%
8.46E+05		salt)
		calculated
		(1 wt%
19.9		salt)

13/27/11 from NISA website

Appendix C

Estimated Radiation Levels Associated with Piping and Barge Storage Tanks for a Reactor Coolant Treatment Conceptual Design

This analysis describes the calculations that were performed by Oak Ridge National Laboratory (ORNL) to provide radiation level estimates for piping and storage tanks associated with a conceptual design for reactor coolant treatment. Calculations were performed to estimate dose rates for piping and storage tanks associated with the coolant system. The source term was based on calculations using the ORIGEN depletion module of the SCALE [1] code system with release fractions that were scaled based on reported water activity measurements. A discussion of the source term was provided in a set of slides on water activity and dose analysis. Those slides were issued by ORNL on March 27th. Dose rates were calculated using the QADS point kernel code and Monaco Monte Carlo radiation transport code in SCALE.

Dose Rates from a 3" Pipe with Soil Cover

Dose rates were evaluated for pipe sources which would be used to transfer the treated coolant from the reactor building to storage tanks located on a barge. A 3" schedule 40 pipe was used as a representative pipe size for this analysis. The source was based on isotopic inventories that were generated using the ORIGEN code in SCALE. The release fractions for Cs, I, Ba, Ce, Mo, and Tc were scaled to match reported measured activities from the Unit 3 turbine building on March 25th as noted in the ORNL slides of March 27. The previous ORIGEN results with these scaled release fractions were adjusted to correspond to a decay time of 60 days for use in the current evaluation. The data in the March 27 slides was based on a decay time of 14 days.

Dose rates were calculated at the surface of the pipe and at 10-cm intervals corresponding to increasing levels of soil covering the pipe. The liquid in the pipe was modeled as normal density water. The actual liquid will have a somewhat higher density due to the presence of salt, which would result in slight reductions (as much as 10-15% depending on the amount of salt in the solution) in the resulting dose rates. The soil covering the pipe was modeled with a density of 1.685 g/cc. While this soil representation has been used in other shielding analyses, it may not be representative of the soil that would be used to shield the pipes. Additional soil densities can be evaluated if this conceptual design progresses.

The dose rates for soil cover thicknesses ranging from no cover to 100 cm are plotted in Figure 1. The dose rate locations correspond to the thickness of the soil layer, so the thicker layers include the effect of additional distance falloff as well as the attenuation provided by the soil. Figure 2 shows the dose rate reduction factors for the 60-day source and for a source energy of 0.7 MeV, which is near the source energy of Cs-137 gammas. These reduction factors are normalized dose rates, and represent the combined distance and attenuation worth of the soil layers.

Dose Rates from a 25,000 Gallon Tank with Concrete Shielding

Dose rates were also evaluated for a 25,000 gallon tank which would hold concentrated waste from the treatment system. Since no specific tank dimensions were available, a commercially available horizontal 25,000 gallon tank was modeled. This tank has a diameter of 10'6" and a length of 38'9".

The liquid in the tank was modeled as water with a density of 1.5 g/cc. This increased density is intended to be representative of the brine in the tank. The total tank wall thickness was modeled as ½" of steel. The concrete was modeled using "Regulatory Concrete" from the SCALE standard composition library. This concrete has a density of 2.3 g/cc. The source strength (in terms of Bq/cc) was increased by a factor of 3 relative to that in the pipe source based on discussions with the conceptual design team members.

The dose rates for concrete thicknesses ranging from 0 to 100 cm are shown in Figure 3. As with the pipe source calculations, the dose rate locations correspond to the thickness of the concrete layer and include the effects of distance falloff as well as the attenuation provided by the concrete. Figure 4 shows the dose rate reduction factors for the 60-day source and for a source energies of 0.7 MeV and 1.165 MeV. These reduction factors are normalized dose rates, and represent the combined distance and attenuation worth of the concrete.

References

- 1) *SCALE: A Modular Code System for Performing Standardized Computer Analyses for Licensing Evaluation*, ORNL/TM-2005/39, Version 6, Vols. I-III, Oak Ridge National Laboratory, Oak Ridge, Tenn., January 2009. Available from the Radiation Safety Information Computational Center at Oak Ridge National Laboratory as CCC-750.

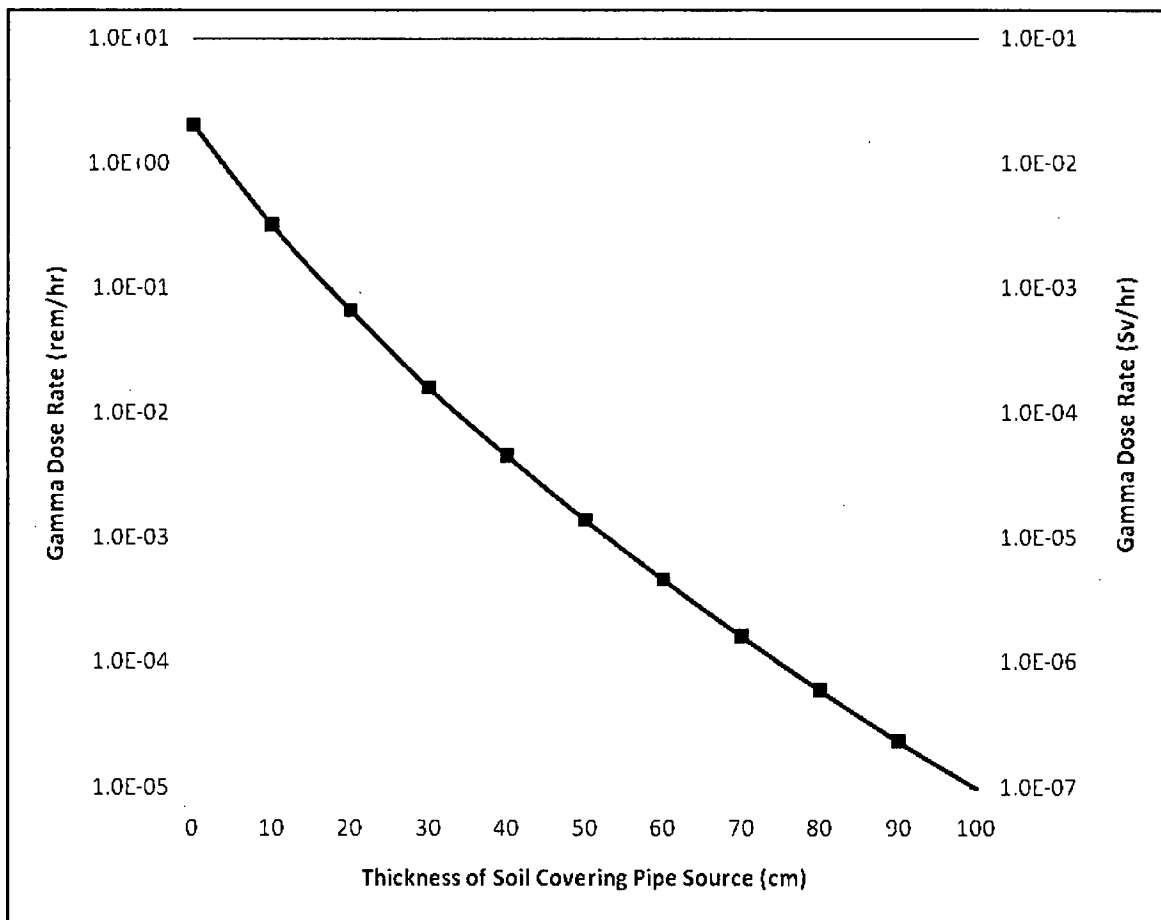


Figure 1. Gamma dose rates from a 3" pipe source as a function of soil thickness covering the pipe. The source term is based on release fractions that were scaled based on measured activities from the Unit 3 turbine building on March 25. The dose rates shown in this figure correspond to a decay time of 60 days, in contrast to the 14-day decay time for the results reported in the ORNL Dose Analysis Notes from March 27.

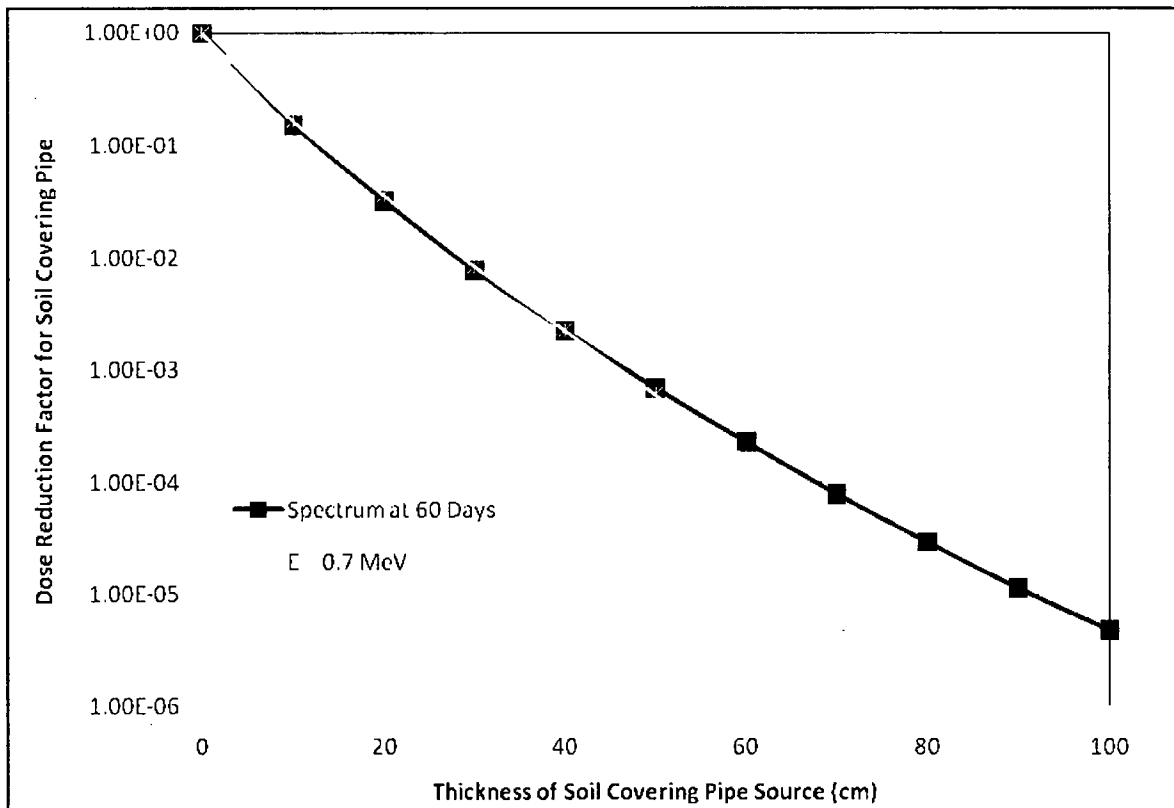


Figure 2. Gamma dose rate reduction factors for soil covering a 3" pipe source. The curve labeled "Spectrum at 60 days" corresponds to the source spectrum for the 60-day dose rates shown in Figure 1. The curve labeled "E = 0.7 MeV" represents the reduction factors that would occur if all the source were at an energy of 0.7 MeV, which is close to the Cs-137 source energy of 0.667 MeV. The change in curvature for the 60-day source curve is due to the effect of higher-energy gammas, which contribute a larger fraction to the dose rate for thicker shielding layers.

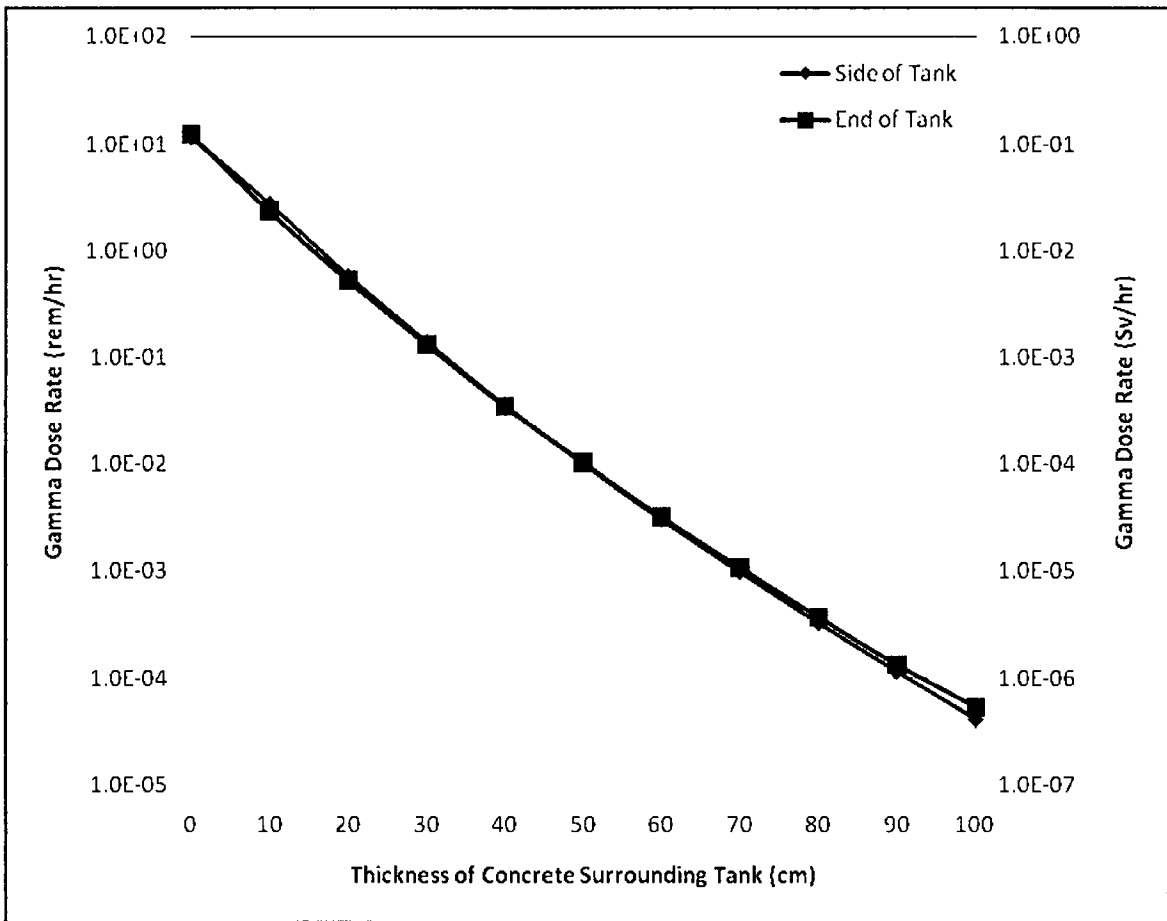


Figure 3. Gamma dose rates from a cylindrical 25,000 gallon tank as a function of concrete surrounding the tank. The source term is based on release fractions that were scaled based on measured activities from the Unit 3 turbine building on March 25. The dose rates shown in this figure correspond to a decay time of 60 days, in contrast to the 14-day decay time for the results reported in the ORNL Dose Analysis Notes from March 27.

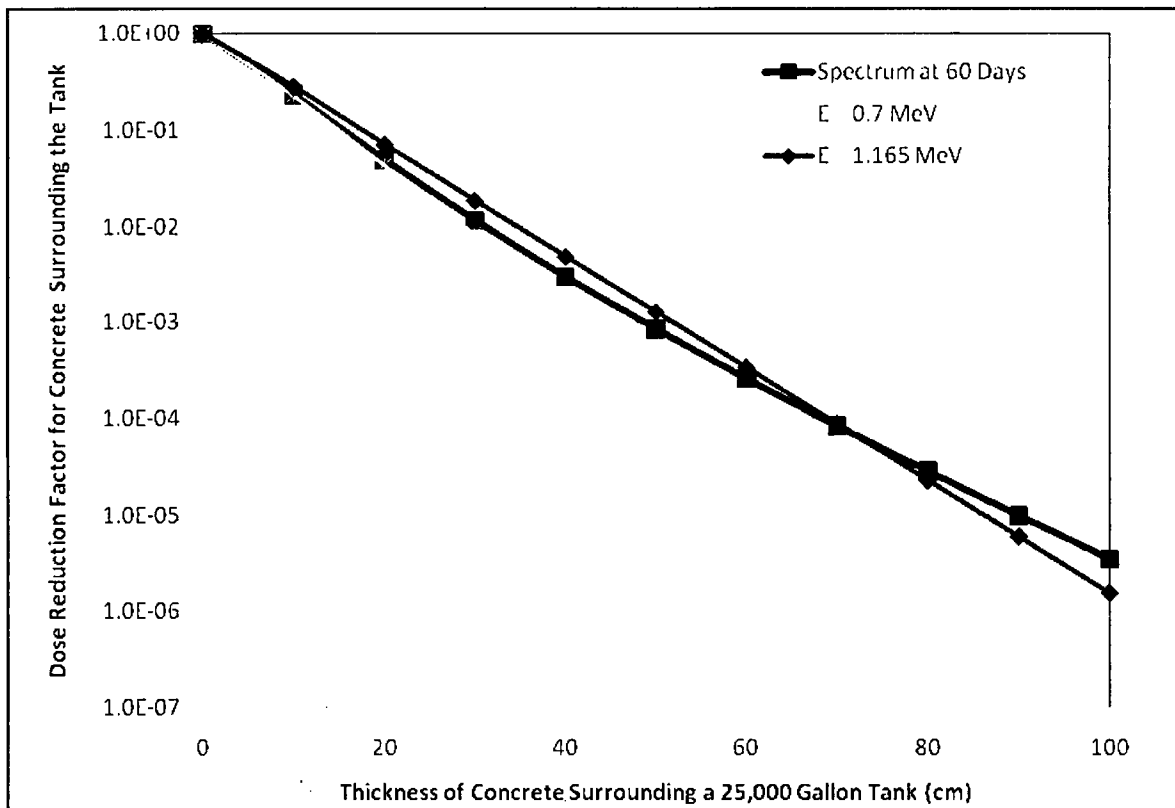


Figure 4. Gamma dose rate reduction factors for concrete surrounding the 25,000 gallon tank source. The curve labeled “Spectrum at 60 days” corresponds to the source spectrum for the 60-day dose rates shown in Figure 3. The curves labeled “E = 0.7 MeV” and “E = 1.165 MeV” represent the reduction factors that would occur for monoenergetic sources at an energy of 0.7 MeV or 1.165 MeV, respectively. The 0.7-MeV curve is representative of the reduction factors that would occur for a source consisting entirely of Cs-137. The 1.165-MeV curve is more representative of the attenuation provided by concrete for the mix of fission product gamma energies.

From: RST01 Hoc
Sent: Tuesday, April 19, 2011 12:16 PM
To:

(b)(6)

Subject: FW: Comments on GEH document on F2 - RESEND
Attachments: Q466 NRC_Postulated_Core_breach_1F2 - FINAL.pdf

Attached is the NRC's review of the GEH evaluation of the 1F2 RPV integrity/failure. Comments from Ed Fuller.

Larry Criscione
NRC Reactor Safety Team

From: RST01 Hoc
Sent: Monday, April 18, 2011 3:47 PM

To: (b)(6)

(b)(6)

Subject: FW: Comments on GEH document on F2

Attached is the NRC's review of the GEH Evaluation of the 1F2 RPV integrity/failure. Comments from Ed Fuller.

Larry Criscione
NRC Reactor Safety Team

From: Fuller, Edward
Sent: Monday, April 18, 2011 3:08 PM
To: RST01 Hoc
Cc: Dube, Donald; Hasselberg, Rick
Subject: Comments on GEH document on F2

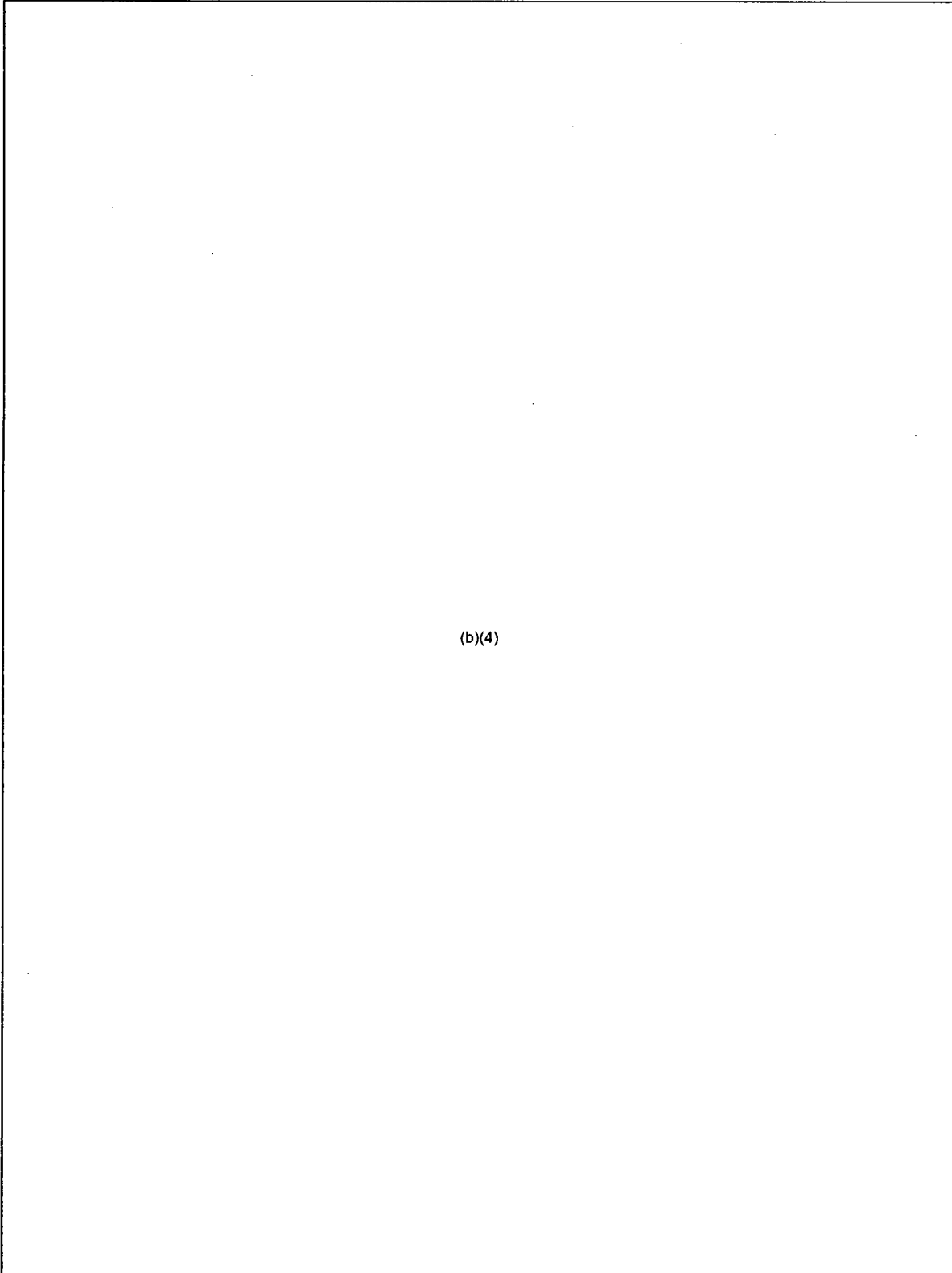
Larry,

Here is out take on the GEH report. We still believe these was partial vessel breach.

Ed Fuller and Don Dube

April 15, 2011
Confidential - GE Hitachi Nuclear Energy LLC
Withhold Pursuant to FOIA Exemption 4
Information is Unverified

NRC Postulated Core Breach on 1F2 Review



(b)(4)

April 15, 2011
Confidential - GE Hitachi Nuclear Energy LLC
Withhold Pursuant to FOIA Exemption 4
Information is Unverified

(b)(4)

April 15, 2011
Confidential - GE Hitachi Nuclear Energy LLC
Withhold Pursuant to FOIA Exemption 4
Information is Unverified

(b)(4)

April 15, 2011
Confidential - GE Hitachi Nuclear Energy LLC
Withhold Pursuant to FOIA Exemption 4
Information is Unverified

(b)(4)

From: RST01 Hoc
Sent: Tuesday, April 19, 2011 11:17 AM
To:

(b)(6)

Subject: FW: KAPL Estimate of Current Water Level in Unit #1 Drywell
Attachments: image001.png; 20110314福島県モニタリング情報 r7-E.xls; 1 F1Trend_110318-E.xls; Unit1Level.docx

From: (b)(6)
Sent: Tuesday, April 19, 2011 10:56 AM
To: RST01 Hoc
Subject: FW: KAPL Estimate of Current Water Level in Unit #1 Drywell

<<Unit1Level.docx>> Attached is an assessment performed by KAPL of the water level in the Unit 1 drywell. KAPL's conclusion is that the water level may be much higher than 4 feet, and could be about 35 feet above the drywell floor.

Also attached are examples of some of the trend data that have been provided in the past. These are examples the spreadsheets that NR asked about in the 1100 call yesterday, as to whether TEPCO is still providing updates to these plant parameter data to NRC.

Steve Bell

-----Original Message-----

From: Steinhurst, Laurel A CIV SEA 08 NR
Sent: Tuesday, April 19, 2011 8:28 AM
To: Bell, Stephen T CIV SEA 08 NR
Subject: FW: KAPL Estimate of Current Water Level in Unit #1 Drywell

TO be conveyed to RST01 later today once you are satisfied with the attachment. Lamparski is away at all day training so will need to speak to someone else at KAPL if there is a question or changes need to be made.

laurel

-----Original Message-----

From: Lamparski, Thomas
Sent: Monday, April 18, 2011 7:15 PM
To: Birks, Donald; Scheinert, Paul A.; Steinhurst, Laurel A; Oakes, Bradley D.; Brown, Shannon
Subject: KAPL Estimate of Current Water Level in Unit #1 Drywell

The attached completes an open item from this morning's telecon discussion. Here is the summary:

Estimation of Drywell Water Level in Fukushima Daiichi Unit #1

DATE/TIME Stamp: April 18, 2011, 19:00

TEPCO has been injecting water into the reactor vessel and/or containment vessel of Unit #1 from various sources since March 12, 2011. KAPL has heard reports that current water level in the drywell is believed to be about 4 feet above the drywell floor. However, KAPL suspects the drywell water level may be much higher than 4 feet based on interpretation of the following:

- Behavior of the CAMS drywell gamma detector
- Behavior of return air duct temperature channel HVH-12C, a temperature instrument located low in the drywell (exact location / elevation unknown)
- Water injection volumes as reported by TEPCO

KAPL's interpretation of this information would put the current water level (as of April 18th) at about 35 feet above the drywell floor. Supporting information for this interpretation is presented herein. Any uncertainty in drywell level should be resolved prior to commencing aggressive flooding of the drywell, so as to prevent inadvertent over-flooding of the drywell.

Date/Time Main gate froi MP-7

Near gymnasium (East of ↑ Near West Gate (near

2011/3/15 12:10	2142	SE
2011/3/15 12:15	2434	E
2011/3/15 12:25	1407	ESE
2011/3/15 12:30	1362	ESE
2011/3/15 12:35	1325	SE
2011/3/15 12:40	1300	SE
2011/3/15 12:45	1267	S
2011/3/15 12:50	1242	SSE
2011/3/15 12:55	1216	S
2011/3/15 13:00	1191	S
2011/3/15 13:10	1148	S
2011/3/15 13:20	1100	SSE
2011/3/15 13:30	1068	S
2011/3/15 13:40	1014	SSE
2011/3/15 13:50	969.9	S
2011/3/15 14:00	928.2	S
2011/3/15 14:10	903.9	S
2011/3/15 14:20	874.4	ESE
2011/3/15 14:30	855.5	S
2011/3/15 14:40	821.3	SSE
2011/3/15 14:50	673.8	E
2011/3/15 15:00	649	SE
2011/3/15 15:10	628.5	S
2011/3/15 15:20	613.8	SE
2011/3/15 15:30	596.4	S
2011/3/15 15:40	566.9	SE
2011/3/15 15:50	544.9	SSE
2011/3/15 16:00	531.6	S
2011/3/15 16:10	513.2	SSE
2011/3/15 16:20	502.6	S
2011/3/15 16:30	489.8	SSE
2011/3/15 16:40	473	SSE
2011/3/15 16:50	460.3	S
2011/3/15 17:00	449.4	S
2011/3/15 17:10	437.5	SE
2011/3/15 17:30	423.5	S
2011/3/15 18:00	401.7	SE
2011/3/15 18:30	403	S
2011/3/15 19:00	353.8	S
2011/3/15 19:30	343.3	S
2011/3/15 20:00	347	S
2011/3/15 20:30	311.3	SSE
2011/3/15 21:00	298.8	E
2011/3/15 21:30	282.6	SSE
2011/3/15 22:00	313.2	SE
2011/3/15 22:30	431.8	SE
2011/3/15 23:00	4548	W
2011/3/15 23:10	6960	N
2011/3/15 23:15	2761	S

2011/3/15 23:20	3648 E
2011/3/15 23:25	4976 NW
2011/3/15 23:30	8080 NW
2011/3/15 23:35	6308 E
2011/3/15 23:40	6592 NE
2011/3/15 23:45	6847 NNE
2011/3/15 23:50	6066 E
2011/3/15 23:55	7966 NE
2011/3/16 0:00	4351 NNE
2011/3/16 0:10	3504 NW
2011/3/16 0:20	3108 N
2011/3/16 0:30	2609 NW
2011/3/16 0:40	2432 NW
2011/3/16 0:50	2257 W
2011/3/16 1:00	2159 NW
2011/3/16 1:10	2021 NW
2011/3/16 1:20	1937 NE
2011/3/16 1:30	1805 N
2011/3/16 1:40	1708 NW
2011/3/16 1:50	1628 NW
2011/3/16 2:00	1552 NW
2011/3/16 2:10	1522 NNW
2011/3/16 2:20	1453 NW
2011/3/16 2:30	1386 NW
2011/3/16 2:40	1357 NW
2011/3/16 2:50	1316 NW
2011/3/16 3:00	1267 NW
2011/3/16 3:30	1159 NW
2011/3/16 4:00	1047 N
2011/3/16 4:30	975.3 NNW
2011/3/16 5:00	918.2 NW
2011/3/16 5:30	868 NNW
2011/3/16 6:00	884 NW
2011/3/16 6:30	848.4 W
2011/3/16 6:40	837 WNW
2011/3/16 6:50	815.9 WNW
2011/3/16 7:00	808.8 NW
2011/3/16 7:10	670.3 NW
2011/3/16 7:20	661.8 NW
2011/3/16 7:30	651.1 NW
2011/3/16 7:40	644 W
2011/3/16 7:50	636.8 W
2011/3/16 8:00	627.5 NNW
2011/3/16 8:10	620.6 WNW
2011/3/16 8:20	613.9 NNW
2011/3/16 8:30	606.6 NNW
2011/3/16 8:40	600.4 N
2011/3/16 8:50	593.4 NNW
2011/3/16 9:00	587.6 NW
2011/3/16 9:10	582.2 N
2011/3/16 9:20	582.4 NW

2011/3/16 9:30	582.3 NW	
2011/3/16 9:40	641.8 W	
2011/3/16 9:50	700.6 NNW	
2011/3/16 10:00	810.3 ENE	
2011/3/16 10:10	908.5 NE	
2011/3/16 10:20	2399 ENE	
2011/3/16 10:30	1361 E	
2011/3/16 10:45	6400 ENE	
2011/3/16 10:54	2300 NE	
2011/3/16 10:55	2900 —	
3/16 11:00	3391 NE	
3/16 11:10	2720 NNE	
3/16 11:20	1900 ENE	
3/16 11:30	5350 NE	
3/16 11:40	2633 E	
3/16 11:50	2578 N	
3/16 12:00	4418 ESE	
3/16 12:10	3138 E	
3/16 12:20	3261 N	
3/16 12:30	10850 ENE	
3/16 12:40	8234 W	
3/16 12:50	2851 NW	
3/16 13:00	2672 WSW	
3/16 13:10	2536 WSW	
3/16 13:20	2430 WSW	
3/16 13:30	2331 N	
3/16 13:40	2257 NW	
3/16 13:50	2182 NW	
3/16 14:00	2122 ENE	
3/16 14:10	2059 SSW	
3/16 14:20	2022 SSW	
3/16 14:30	1937 W	
3/16 14:40	1888 WNW	
3/16 14:50	1835 WSW	
3/16 15:00	1788 NW	
3/16 15:10	1752 NW	
3/16 15:20	1697 NNW	
3/16 15:30	1664 N	
3/16 15:40	1629 NNW	
3/16 15:50	1591 W	
3/16 16:00	1556 W	
3/16 16:10	1530 SW	
3/16 16:20	1472 NW	
3/16 17:03		752
3/16 17:05		751
3/16 17:10		749.3 N
3/16 17:20		745.6 NW
3/16 17:30		741.3 WNW
3/16 17:40		738.2 NNW
3/16 17:50		735 NNW
3/16 18:00		731 WNW

3/16 18:10		728 NW	
3/16 18:20		725.9 W	
3/16 18:30		723.3 NW	
3/16 19:00			385.4 NW
3/16 19:30			380.7 NW
3/16 20:00			375.5 NNW
3/16 20:30			373.6 NNW
3/16 21:00			370.2 NNW
3/16 21:30			366.5 NNW
3/16 22:00			363.7 NW
3/16 22:30			361.2 ESE
3/16 23:00			358.8 NNE
3/16 23:30			355.7 NNE
3/17 0:30			351.4 NE
3/17 0:50			350.1 SSW
3/17 1:30			348.2 E
3/17 2:00			345.9 W
3/17 2:30			344.8 NW
3/17 3:00			344.6 W
3/17 3:30			341.7 W
3/17 4:00			340.8 W
3/17 4:30			339.4 NW
3/17 5:00			338.5 W
3/17 5:30			336.1 W
3/17 6:00			334.7 W
3/17 6:30			333.8 W
3/17 7:00			314.5 W
3/17 7:30			313.5 W
3/17 7:50		381.3	
3/17 8:00		379.0	
3/17 8:30		373.0	
3/17 8:40		372.5	
3/17 8:50		372.7	
3/17 9:00		373.7	
3/17 9:10		371.9	
3/17 9:30			
3/17 9:40			
3/17 9:50			
3/17 10:00			
3/17 10:10			
3/17 10:20			
3/17 10:30			
3/17 10:40			
3/17 10:50			
3/17 11:00	647.3		
3/17 11:10	646.2		
3/17 11:15			313.1
3/17 11:20			312.5
3/17 11:30			312.3
3/17 12:00			311.0
3/17 12:30			310.7

3/17 13:00	309.7
3/17 13:10	309.3
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447.6 S
441.2 W
434.5 WNW
429.2 SW
423.9 WSW
419.1 SSW
414.2 W
409.4 W
405.2 W
401.6 NNW
397.8 W
393.9 SW
389.2 SW
385.9 W
382.9 W
379.6 SW

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3/18 23:10	371.2 NW
3/18 23:20	368.9 WSW
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3/19 2:20	311.1 S
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3/19 2:50	308.6 NNE
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3/22 2:10	303.2
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3/22 2:30	299.7
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3/22 3:00	294.9
3/22 3:10	293.8
3/22 3:20	293.6
3/22 3:30	291.6
3/22 3:40	291.1
3/22 3:50	290.0
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3/22 4:20	287.0
3/22 4:30	286.0
3/22 4:40	283.6
3/22 4:50	280.1
3/22 5:00	273.9
3/22 5:10	271.0 NW
3/22 5:20	268.0 W
3/22 5:30	267.4 NW
3/22 5:40	265.8 W
3/22 5:50	265.3 W
3/22 6:00	264.6 N
3/22 6:10	264.3 NW
3/22 6:20	265.5 W
3/22 6:30	263.7 WNW
3/22 6:40	262.6 WNW

3/22 6:50	262.1 NW
3/22 7:00	261.9 WNW
3/22 7:10	261.8 NW
3/22 7:20	261.7 WNW
3/22 7:30	261.6 NW
3/22 7:40	261.2 WNW
3/22 7:50	261.0 WNW
3/22 8:00	260.9 WNW
3/22 8:10	260.8 W
3/22 8:20	260.5 W
3/22 8:30	260.3 W
3/22 8:40	260.4 NW
3/22 8:50	260.2 W
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3/22 9:30	259.9 NW
3/22 9:40	259.4 W
3/22 9:50	259.5 WNW
3/22 10:00	260.2 WNW
3/22 10:10	259.4 NW
3/22 10:20	258.9 WNW
3/22 10:30	258.7 NW
3/22 10:40	258.4 N
3/22 10:50	257.3 NNW
3/22 11:00	257.5 NNW
3/22 11:10	257.1 N
3/22 11:20	256.9 NNW
3/22 11:30	256.5 W
3/22 11:40	256.5 NNW
3/22 11:50	256.4 NNW
3/22 12:00	256.3 N
3/22 12:10	256.0 N
3/22 12:20	256.1 N
3/22 12:30	256.3 NW
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3/22 12:50	255.8 NNW
3/22 13:00	255.6 N
3/22 13:10	255.7 N
3/22 13:20	255.2 NE
3/22 13:30	254.8 NNW
3/22 13:40	254.8 N
3/22 13:50	254.5 N
3/22 14:00	254.6 NW
3/22 14:10	254.3 NW
3/22 14:20	254.4 N
3/22 14:30	254.3 N
3/22 14:40	244.3 WNW
3/22 14:50	254.4 N
3/22 15:00	254.1 NE
3/22 15:10	255.3 NW

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3/22 15:30	277.5 ESE
3/22 15:40	265.2 E
3/22 15:50	258.8 E
3/22 16:00	274.0 E
3/22 16:10	280.6 SW
3/22 16:20	330.6 SW
3/22 16:30	352.3 W
3/22 16:40	384.2 NNE
3/22 16:50	294.0 N
3/22 17:00	330.8 SE
3/22 17:10	420.4 SE
3/22 17:20	388.7 N
3/22 17:30	351.6 NE
3/22 17:40	278.9 NNW
3/22 17:50	275.2 WNW
3/22 18:00	265.5 W
3/22 18:10	264.1 WNW
3/22 18:20	261.5 NW
3/22 18:30	324.6 W
3/22 18:40	322.8 W
3/22 18:50	303.8 NNW
3/22 19:00	367.9 SW
3/22 19:10	361.1 SW
3/22 19:20	320.9 WSW
3/22 19:30	472.7 SW
3/22 19:40	340.7 W
3/22 19:50	258.0 WNW
3/22 20:00	254.1 WNW
3/22 20:10	253.4 W
3/22 20:20	252.5 WNW
3/22 20:30	251.5 NW
3/22 20:40	250.5 NW
3/22 20:50	249.1 W
3/22 21:00	246.1 W
3/22 21:10	244.4 SW
3/22 21:20	242.8 W
3/22 21:30	241.0 W
3/22 21:40	240.6 NW
3/22 21:50	239.5 WNW
3/22 22:00	239.3 WNW
3/22 22:10	237.0 W
3/22 22:20	237.4 W
3/22 22:30	236.2 WSW
3/22 22:40	235.7 WNW
3/22 22:50	235.8 W
3/22 23:00	235.9 W
3/22 23:10	235.9 WNW
3/22 23:20	235.5 WNW
3/22 23:30	234.8 WNW
3/22 23:40	234.1 WNW

3/22 23:50	233.8	NW
3/23 0:00	233.4	NW
3/23 0:10	233.3	NW
3/23 0:20	232.3	NNW
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3/23 0:40	230.1	NW
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3/23 1:00	227.5	N
3/23 1:10	227.4	NE
3/23 1:20	227.2	NNW
3/23 1:30	226.8	NNW
3/23 1:40	226.8	NNW
3/23 1:50	226.7	N
3/23 2:00	226.7	N
3/23 2:10	226.9	N
3/23 2:20	227.1	NW
3/23 2:30	227.1	N
3/23 2:40	227.2	N
3/23 2:50	227.3	NW
3/23 3:00	227.6	NNW
3/23 3:10	228.5	N
3/23 3:20	228.7	NNW
3/23 3:30	228.8	NNW
3/23 3:40	228.8	N
3/23 3:50	229.0	NW
3/23 4:00	229.1	N
3/23 4:10	229.1	NW
3/23 4:20	229.4	NNW
3/23 4:30	229.3	NW
3/23 4:40	229.5	NNW
3/23 4:50	229.5	N
3/23 5:00	229.5	N
3/23 5:10	229.3	N
3/23 5:20	229.6	NNW
3/23 5:30	229.5	NW
3/23 5:40	229.5	NNW
3/23 5:50	229.7	NW
3/23 6:00	229.6	NNW
3/23 6:10	229.6	NNW
3/23 6:20	229.4	NW
3/23 6:30	229.6	NNW
3/23 6:40	229.5	NW
3/23 6:50	229.5	NNW
3/23 7:00	229.3	NNW
3/23 7:10	229.5	NNW
3/23 7:20	229.3	NNW
3/23 7:30	229.5	NNW
3/23 7:40	229.0	N
3/23 7:50	229.3	N
3/23 8:00	229.4	N
3/23 8:10	229.5	N

3/23 8:20	229.2	NNW
3/23 8:30	229.4	NNW
3/23 8:40	229.1	NNW
3/23 8:50	229.1	NNW
3/23 9:00	229.1	N
3/23 9:10	228.7	NNE
3/23 9:20	227.6	N
3/23 9:30	226.9	N
3/23 9:40	228.6	NNE
3/23 9:50	227.6	NNE
3/23 10:00	211.4	N
3/23 10:10	227.7	N
3/23 10:20	227.2	NNE
3/23 10:30	227.3	N
3/23 10:40	227.1	NNW
3/23 10:50	227.2	N
3/23 11:00	227.0	NNW
3/23 11:10	226.8	N
3/23 11:20	226.8	NNE
3/23 11:30	226.3	NNE
3/23 11:40	225.7	N
3/23 11:50	226.3	N
3/23 12:00	225.2	NNW
3/23 12:10	226.0	NNE
3/23 12:20	224.8	W
3/23 12:30	224.9	W
3/23 12:40	224.7	WNW
3/23 12:50	224.8	E
3/23 13:00	225.4	E
3/23 13:10	224.8	ESE
3/23 13:20	225.7	N
3/23 13:30	224.1	N
3/23 13:40	223.7	NE
3/23 13:50	222.7	NW
3/23 14:00	222.4	N
3/23 14:10	231.1	NE
3/23 14:20	435.0	ESE
3/23 14:30	288.7	E
3/23 14:40	309.7	ESE
3/23 14:50	267.8	ESE
3/23 15:00	265.4	NE
3/23 15:10	396.0	N
3/23 15:20	415.6	E
3/23 15:30	414.7	SSE
3/23 15:40	401.6	ESE
3/23 15:50	318.4	ESE
3/23 16:00	331.5	E
3/23 16:10	313.4	S
3/23 16:20	280.9	SE
3/23 16:30	283.7	SSW
3/23 16:40	274.4	SSE

3/23 16:50	269.3 SW
3/23 17:00	265.1 N
3/23 17:10	262.1 E
3/23 17:20	259.5 NNW
3/23 17:30	257.0 NW
3/23 17:40	255.8 W
3/23 17:50	254.2 WNW
3/23 18:00	253.0 NW
3/23 18:10	251.3 NNW
3/23 18:20	241.2 N
3/23 18:30	249.0 NW
3/23 18:40	246.9 NNW
3/23 18:50	245.8 NE
3/23 19:00	244.6 N
3/23 19:10	243.5 N
3/23 19:20	242.1 N
3/23 19:30	241.0 NNE
3/23 19:40	240.2 W
3/23 19:50	237.6 WSW
3/23 20:00	236.5 NNE
3/23 20:10	235.8 E
3/23 20:20	235.3 SW
3/23 20:30	234.3 SW
3/23 20:40	233.2 E
3/23 20:50	232.8 E
3/23 21:00	232.3 WSW
3/23 21:10	231.5 SE
3/23 21:20	230.6 SSE
3/23 21:30	230.2 SW
3/23 21:40	229.5 W
3/23 21:50	228.8 WSW
3/23 22:00	228.3 W
3/23 22:10	227.3 W
3/23 22:20	226.8 W
3/23 22:30	226.5 W
3/23 22:40	225.8 WNW
3/23 22:50	225.4 WNW
3/23 23:00	224.9 W
3/23 23:10	224.7 NW
3/23 23:20	224.3 W
3/23 23:30	224.0 W
3/23 23:40	223.0 SW
3/23 23:50	223.0 SE
3/24 0:00	222.3 NW
3/24 0:10	222.0 S
3/24 0:20	221.8 N
3/24 0:30	221.5 W
3/24 0:40	221.7 WNW
3/24 0:50	221.0 WNW
3/24 1:00	220.6 WNW
3/24 1:10	220.4 WNW

3/24 1:20	220.0 NW
3/24 1:30	219.7 N
3/24 1:40	219.2 NW
3/24 1:50	219.2 W
3/24 2:00	218.9 WNW
3/24 2:10	218.7 WNW
3/24 2:20	217.5 WNW
3/24 2:30	217.2 WNW
3/24 2:40	216.8 W
3/24 2:50	216.6 WSW
3/24 3:00	216.6 W
3/24 3:10	216.5 WSW
3/24 3:20	216.2 SW
3/24 3:30	215.5 SW
3/24 3:40	215.7 W
3/24 3:50	215.4 W
3/24 4:00	215.1 WNW
3/24 4:10	215.0 N
3/24 4:20	214.7 S
3/24 4:30	214.5 N
3/24 4:40	214.7 NNW
3/24 4:50	214.3 W
3/24 5:00	214.4 SE
3/24 5:10	214.0
3/24 5:20	213.6
3/24 5:30	213.8
3/24 5:40	216.2
3/24 5:50	213.6
3/24 6:00	212.8
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3/24 6:20	214.7
3/24 6:30	230.9
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3/24 9:10	210.8
3/24 9:20	210.8
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3/24 10:20	209.7
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3/24 11:30	209.5
3/24 11:40	209.6
3/24 11:50	209.1
3/24 12:00	209.4
3/24 12:10	209.4
3/24 12:20	209.2
3/24 12:30	201.1
3/24 12:40	208.8
3/24 12:50	208.7
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North of Administrative Head Bldg.

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3634 WSW
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2773 S
2763 SW
2758 SSW
2729 SE
2715 SSW
2707 SW
2693 SSW
2680 S
2673 S
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2651 WSW
2658 NNE
2623 W
2683 WSW
2614 SW
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2595 NNW
2632 NE
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2704 NE
2682 NW

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2012 NE
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2016 N
2013 NE
2011 N
2015 NE

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White smoke at 1F-2

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ENE

NNW

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SSE

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WNW

W

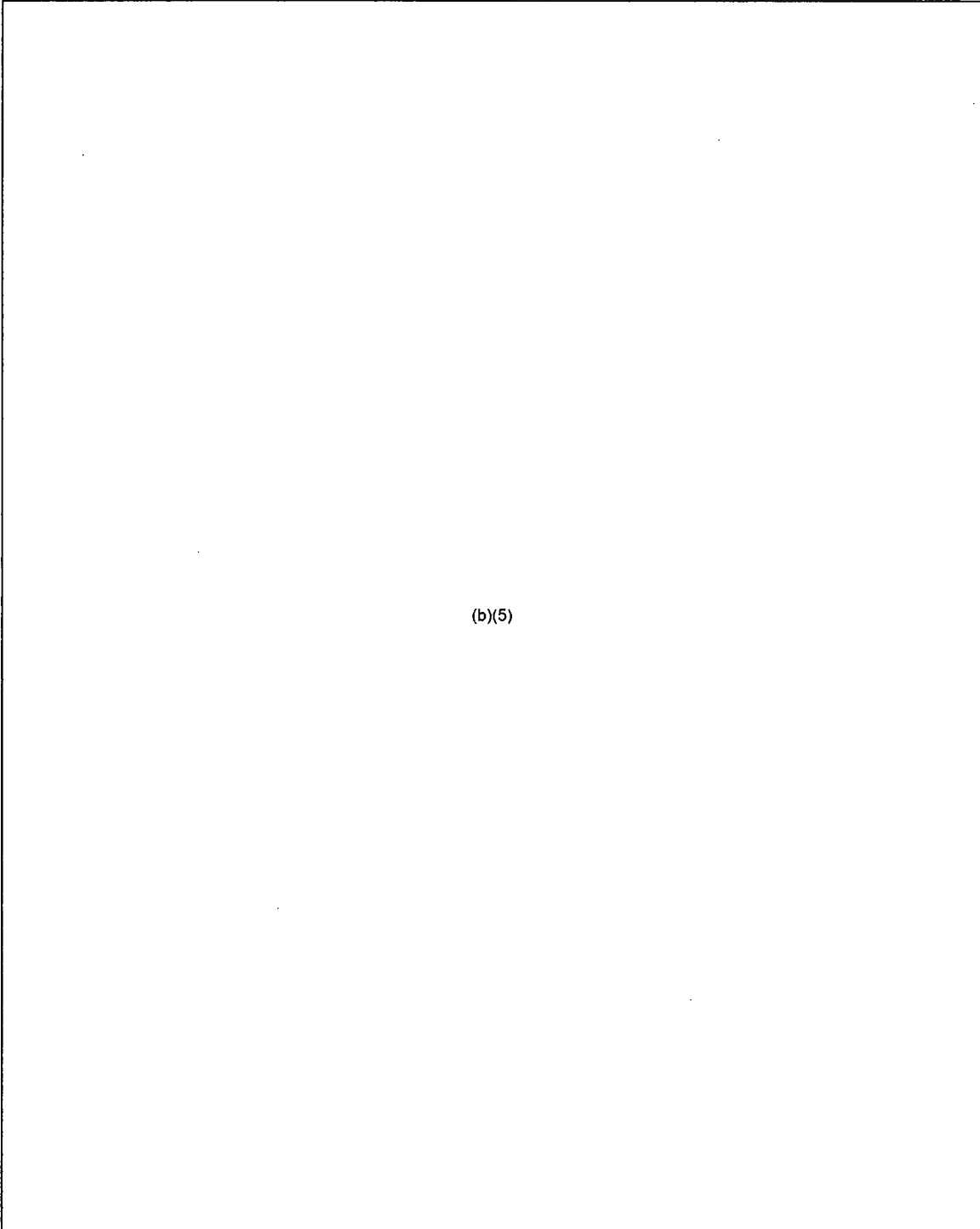
WSW

WNW

SW

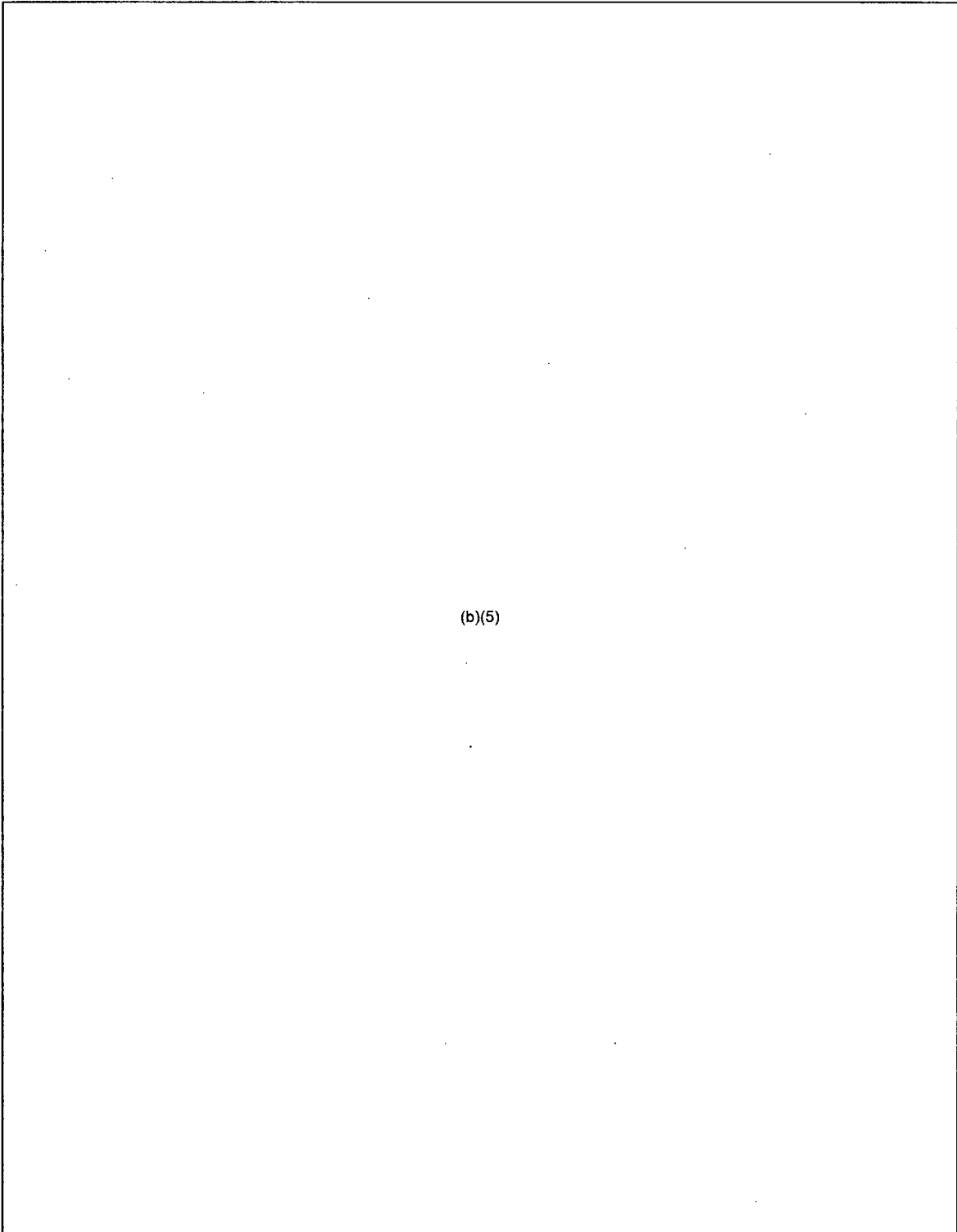
Estimation of Drywell Water Level in Fukushima Daiichi Unit #1

DATE/TIME Stamp: April 18, 2011, 19:00



(b)(5)

Estimate of Current Water Level in Unit #1 Drywell



(b)(5)

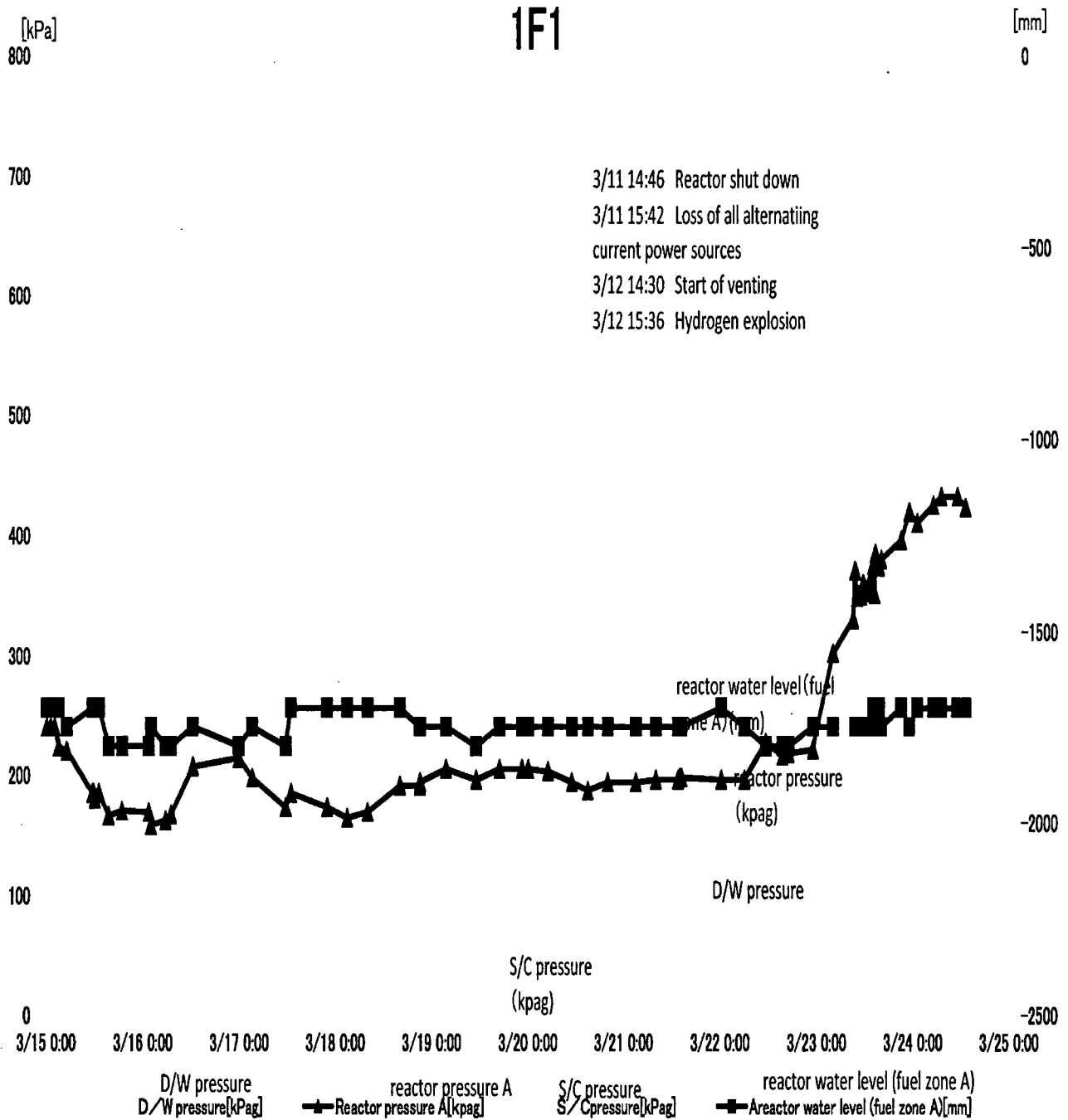
Table 1: Estimate of Containment Water Volume Based on TEPCO Injection Data

(b)(5)

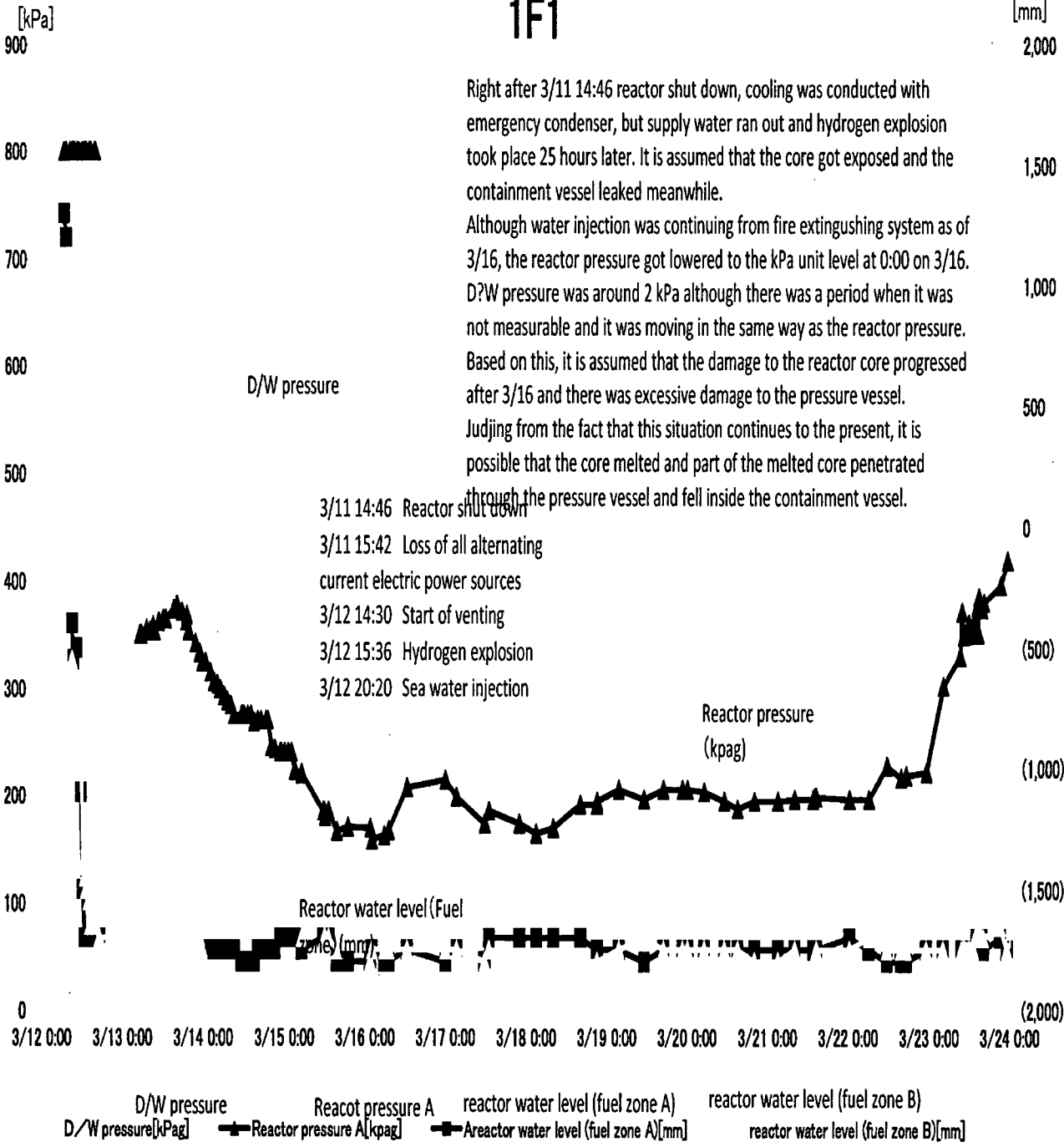
(b)(5)

(b)(5)

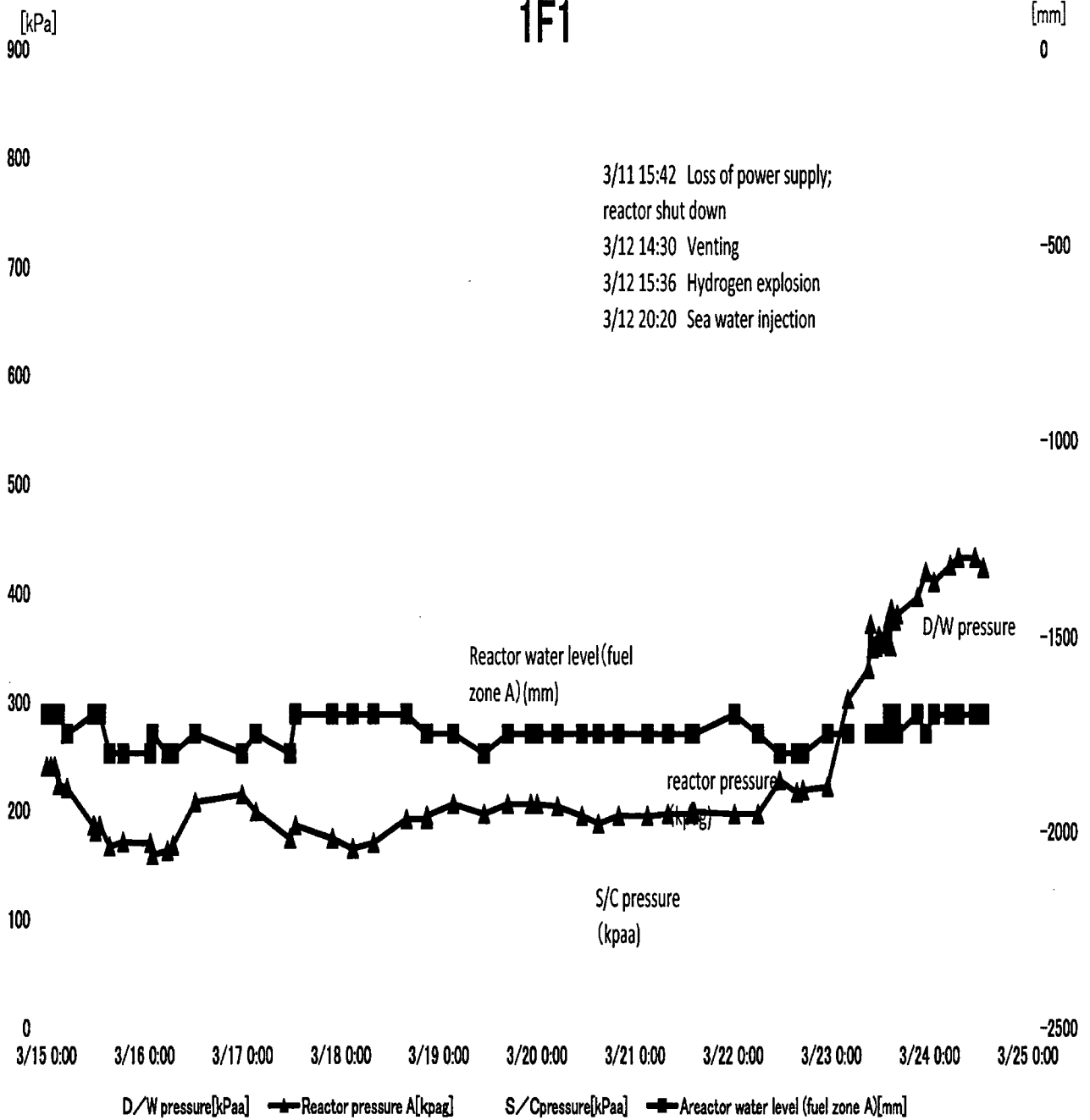
(b)(5)



1F1

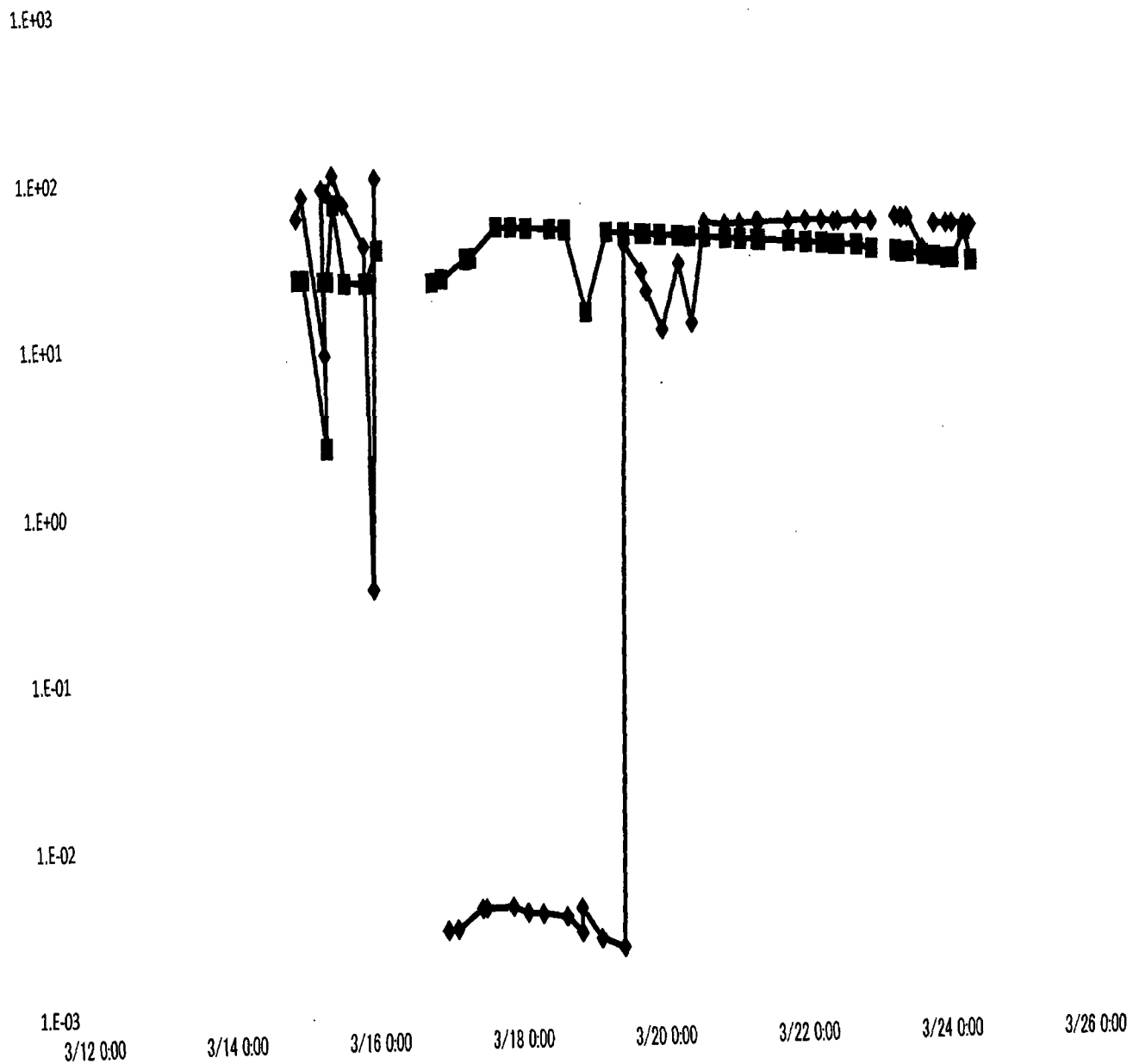


1F1

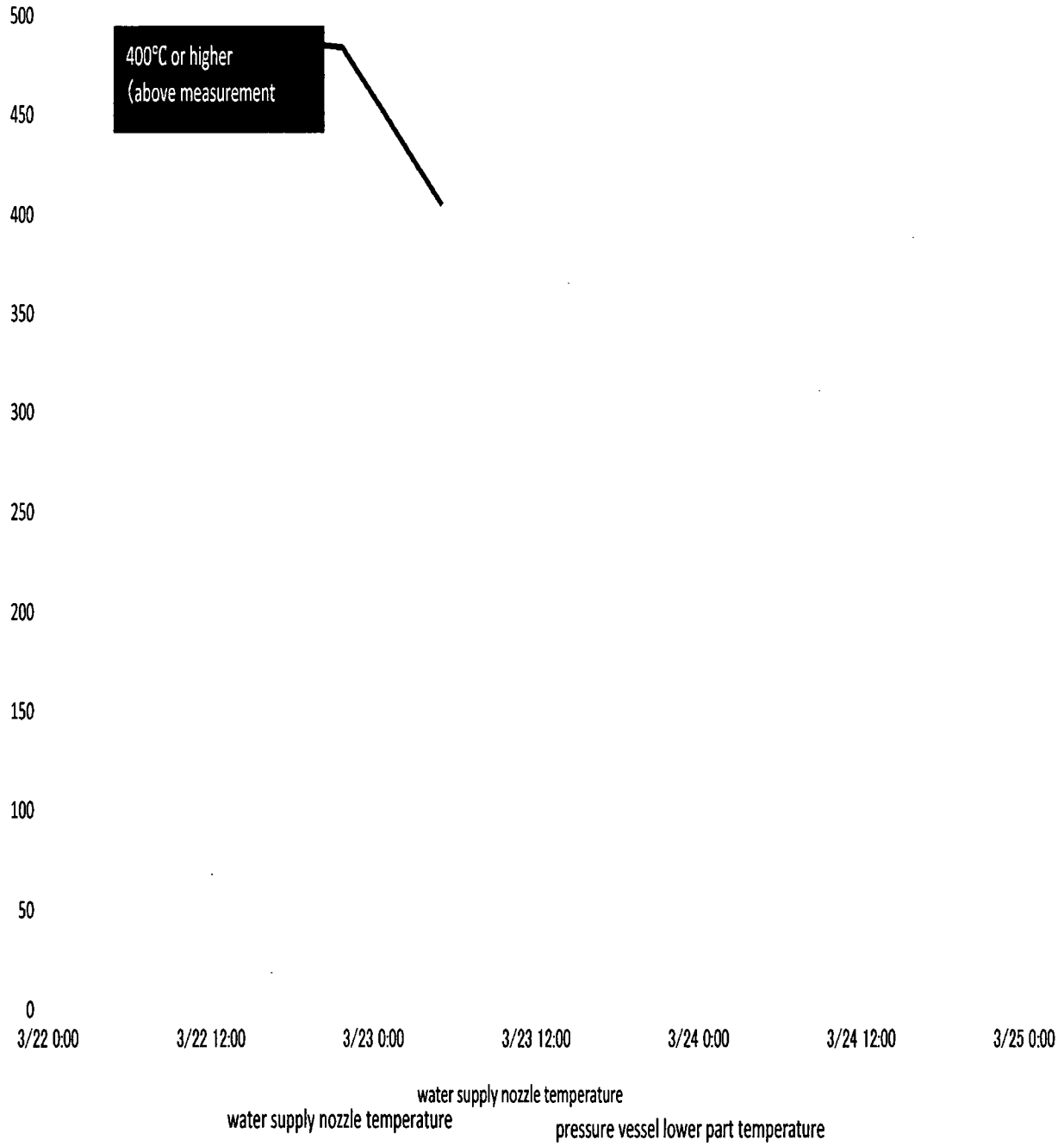


1F1 CAMS

◆ CAMS (D/W) [Sv/h] ■ CAMS(S/P)[Sv/h]



1F1 Pressure vessel



From: RST01 Hoc
Sent: Tuesday, April 19, 2011 11:02 AM
To:

(b)(6)

Subject: FW: NR cmts/ques on TEPCO roadmap - share with RST call members
Attachments: NR cmts-TEPCO Roadmap 4-18-11--1800.docx

-----Original Message-----

From: (b)(6)

Sent: Monday, April 18, 2011 6:10 PM

To: RST01 Hoc

Cc: (b)(6)

(b)(6)

Subject: NR cmts/ques on TEPCO roadmap - share with RST call members

At today's (4-18-11) 1100 RST call, Dave Skeen requested that call members provide initial comments and questions on TEPCO's "Roadmap towards Restoration from the Accident at Fukushima Daiichi Nuclear Power Station" by 1500 so that they could be shared with call members for their consideration overnight and discussion tomorrow at the 1100 RST call.

NR comments are late to the 1500 deadline but better expressed for us having taken the extra time. I request that RST01 please forward to the 1100 RST call members for their consideration before tomorrow's call.

Thank you,
Laurel Steinhurst
Naval Reactors
202-781-6047

NR Program – Initial comments and questions on TEPCO’s “Roadmap towards Restoration from the Accident at Fukushima Daiichi Nuclear Power Station”

1. Overall Practicability of Roadmap Objectives:

(b)(5)

2. Flood up of U1, U2 and U3:

a.

(b)(5)

(b)(5)

(1)

(2)

(3)

(b)(5)

3. Instrumentation:

a.

b.

c.

d.

(b)(5)

3. Spent Fuel Pools:

a.

b.

a.

b.

c.

(b)(5)

d.

(b)(5)

5. Containment (PCV) Water Leakage:

(b)(5)

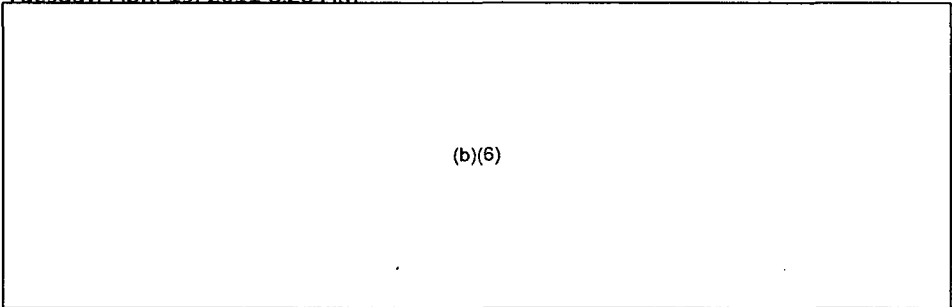
6. Reliability of cooling methods:

(b)(5)

7. Cooling:

(b)(5)

From: RST01 Hoc
Sent: Tuesday, April 19, 2011 8:28 AM
To:



Subject: 1100 EST consortium phone call agenda - Tuesday 4-19
Attachments: April 19 1100 Agenda.doc

See attached.

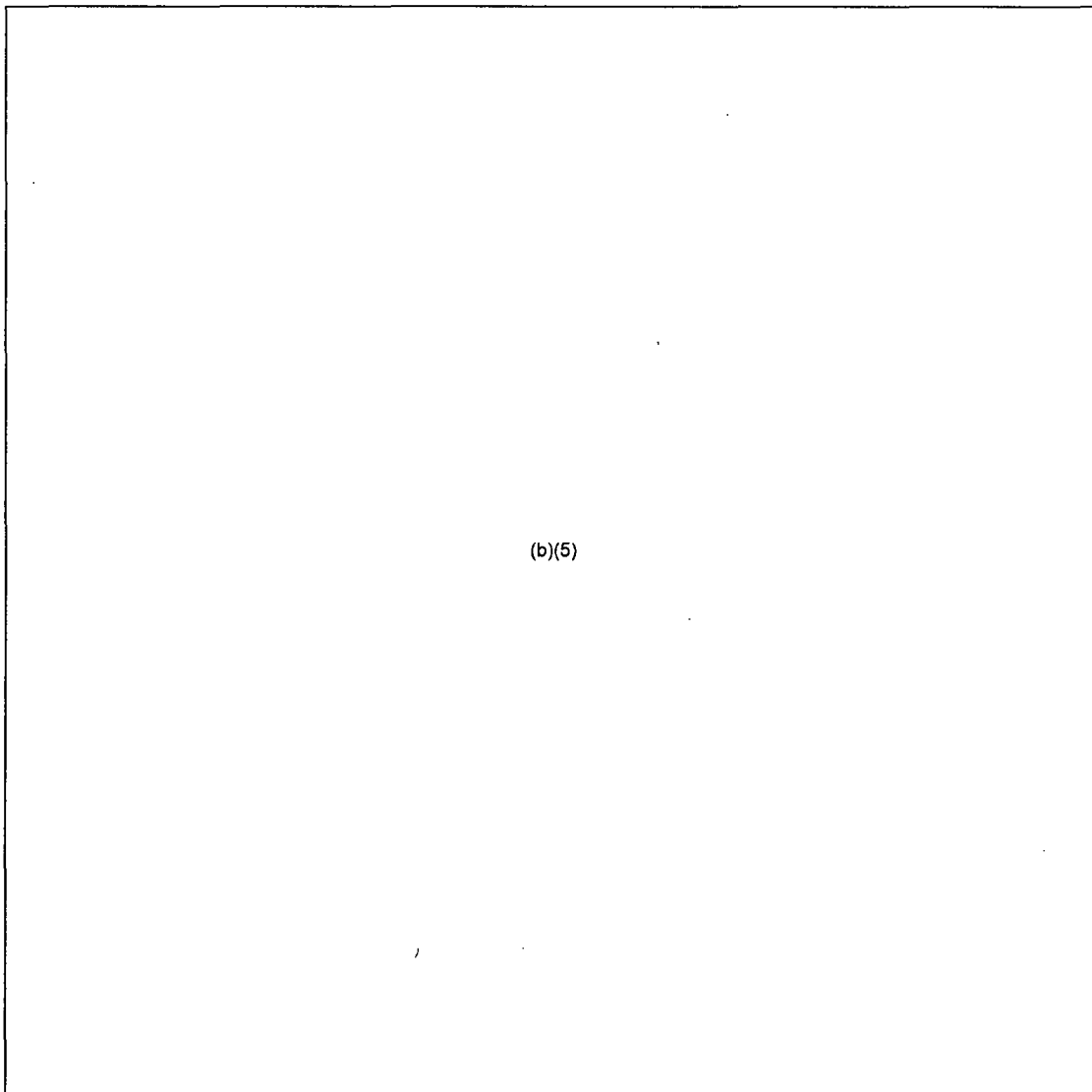
Larry Criscione
NRC Reactor Safety Team

Agenda: Technical Consortium Call

Date/Time: April 19, 2011/11:00 AM

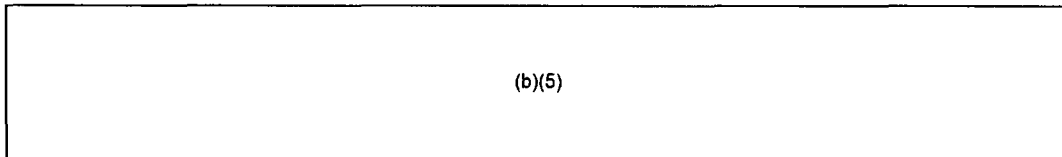
Old Business:

- **Further discussion on N2 injection into a containment with a high steam generation rate:**



- **TEPCO Road Map Discussion.**

Make an initial high-level assessment (are the major element for success included in the roadmap)

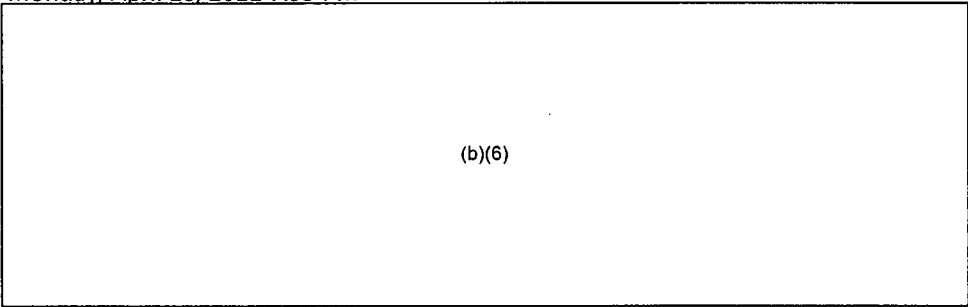


(b)(5)

New Business:

- What should be the reflood rate if the recommendation to flood containment is executed? (Japan Site Team)
- Discuss GEH accident progression analysis of vessel breach (GEH Analysis and NRC analysis).
- TEPCO spread sheet – NR asked if we stopped getting this data. We will check with the site team tonight on the 0300 phone call – they were not available for the call last night. May be able to review IAEA data instead of TEPCO.

From: RST01 Hoc
Sent: Monday, April 18, 2011 7:53 PM
To:



Cc: Ruland, William
Subject: FW: OUO - Fukushima Daiichi Accident Progression - OUO
Attachments: Q466 NRC_Postulated_Core_breach_1F2 - FINAL.pdf; Q466 NRC_Postulated_Core_breach_1F2 - FINAL with comments.pdf

Official use only

Attached for your review :

- GEH review of NRC assessment of U2
- NRC review of GEH assessment

Be prepared to discuss the technical issue in these documents on the April 19, 2011, 11:00 AM technical consortium call.

RST

April 15, 2011
Confidential - GE Hitachi Nuclear Energy LLC
Withhold Pursuant to FOIA Exemption 4
Information is Unverified

NRC Postulated Core Breach on 1F2 Review

(b)(4)

From: RST01 Hoc
Sent: Monday, April 18, 2011 7:09 PM
To:

(b)(6)

Subject: NRR High level comments on TEPCO Road Map

All,

The purpose of this email is to document NRRs high level review of the TEPCO Roadmap towards Restoration from the Accident at Fukushima Daiichi Nuclear Power Station and provide the review to the NRC Japan Team and the US industrial consortium.

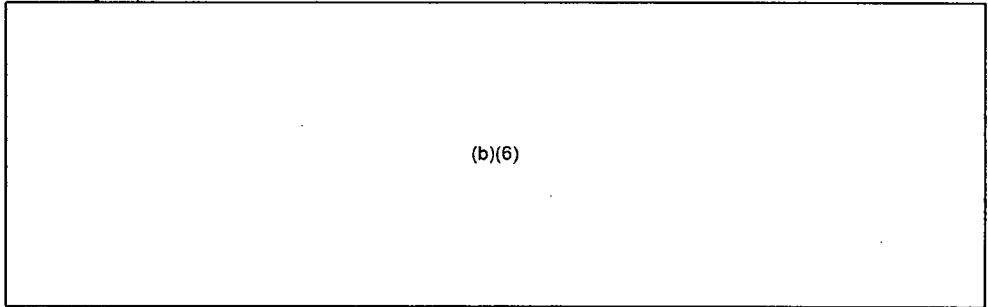
Dave Skeen briefed the EOC on the high level NRR review of the Roadmap performed by Dave Skeen, Pat Hiland and Fred Brown. The following was noted:

- -
 -
 -
- (b)(5)

The NRR line organization will perform a detailed assessment of the Road Map.

RST EOC

From: RST01 Hoc
Sent: Monday, April 18, 2011 1:26 PM
To:

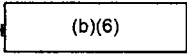


Subject: FW: Answers for the questions on Fukushima Daiich NPS
Attachments: Attachment_2(DWpressure after N2).pdf; Attachment_1(pressure).pdf; Attachment 6(water injection).pdf; Attachment_5(Survey map).pdf; Attachment_4(transfer line).pdf; Attachment_3(PCVcooling).pdf; Requests for assistance from the DOE.doc; Fukushima questions Apr 15 (Answer) .docx

DOE documents attached. Boron/seawater evaluation included.

Larry Criscione
NRC Reactor Safety Team

From: Versluis, Rob [mailto:ROB.VERSLUIS@nuclear.energy.gov]
Sent: Thursday, April 14, 2011 10:17 AM
To: RST01 Hoc
Subject: Fw: Answers for the questions on Fukushima Daiich NPS

Fyi
Rob Versluis +1-301-903-1890(o) +  (m)

From: Kelly, John E (NE)
To: DL-NERT-All
Sent: Thu Apr 14 10:00:31 2011
Subject: FW: Answers for the questions on Fukushima Daiich NPS

From: 熊野 裕美子 [mailto:kumano.yumiko@tepcoco.jp]
Sent: Thursday, April 14, 2011 9:04 AM
To: Kelly, John E (NE)
Cc: akira.omoto@cao.go.jp; minematsu.akiyoshi@tepcoco.jp; shirakawa.t@tepcoco.jp; fukuda.toshihiko@tepcoco.jp; kumiaki.moriya.xk@hitachi.com; masuda.takahiro@tepcoco.jp; 立岩 健二; suzuki.shunichi@tepcoco.jp; mizokami.shinya@tepcoco.jp; fukaya.yuichi@tepcoco.jp; takamori.kenrou@tepcoco.jp; watanabe.norio@jaea.go.jp; 尾本 彰; 川野 晃; shunsuke.kondo@gmail.com; ichii-naoto@meti.go.jp; Onishi, Yasuo; fumihiko.ishibashi@toshibaco.jp; shoichiro.kinoshita.cr@hitachi.com; hirohide.oikawa@toshibaco.jp
Subject: Answers for the questions on Fukushima Daiich NPS

Dear Mr. Kelly,

This is Kumano from TEPCO.

In advance to the telephone meeting with you and TEPCO for today at 8pm EDT (9am JST Fri 4/15), I'd like to send you answers and some additional information about our plant status.

Also, a list of technical questions is attached which TEPCO would like to have assistance from the DOE.

Could you please distribute attached files to your colleagues who would join the meeting?

I hope we will have good discussion on the meeting.

Best regards,
Yumiko Kumano

Yumiko Kumano
Transport Engineering Group,
Nuclear Fuel Cycle Department,
Tokyo Electric Power Company (TEPCO)

TEL: +81-3-6373-5446

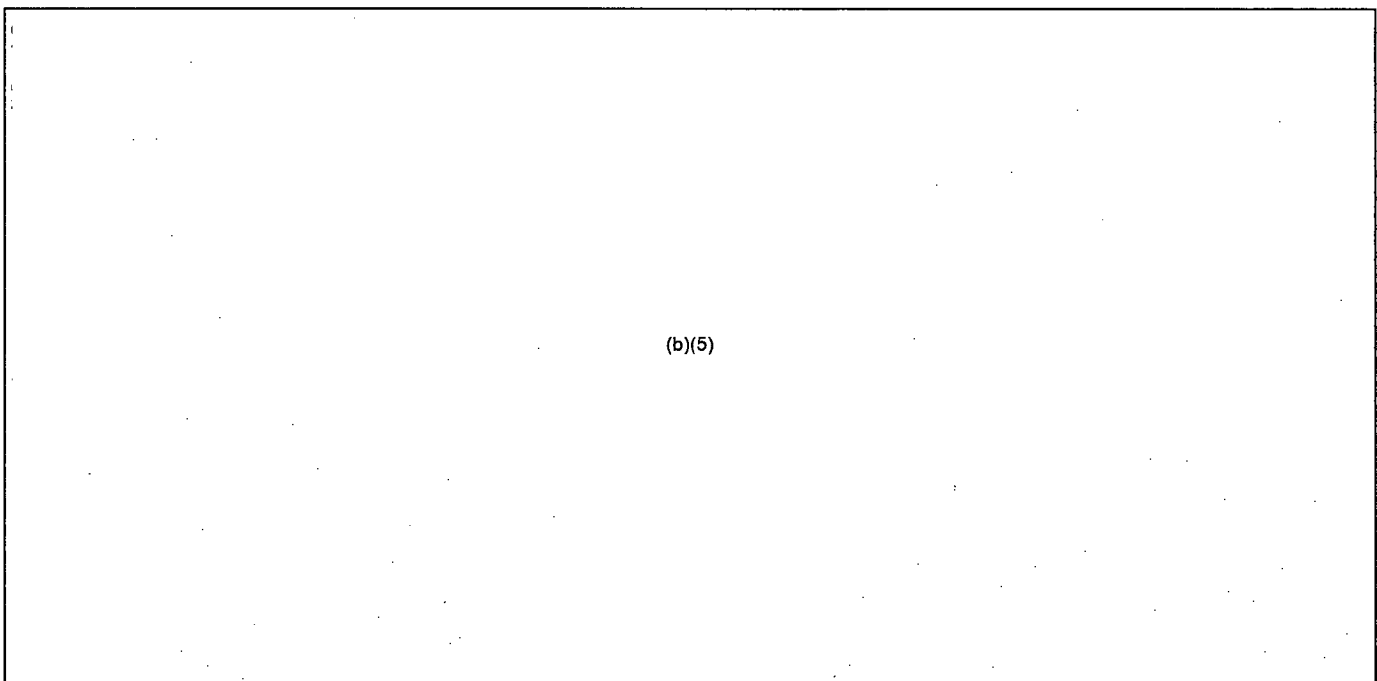
FAX: +81-3-3596-8545

(Text data is attached below.)

4/14/2011 TEPCO

Answers for the questions on Fukushima Daiichi Plants from DOE

Any information on the questions below will be used to refine analysis and options studies. These questions are motivated to help improve analysis in four key areas: reactor status, long-term passive cooling options, spent-fuel pool analysis, and wastewater treatment.



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Enhancement of Reactor Injection Reliability

April 12, 2011
Long Term Cooling Team

The injection into reactors of Fukushima I Unit 1 – 3 is presently continued with use of temporary pumps driven by the power supplied via the Tohoku EPC's power grid. The followings are being evaluated and implemented for enhancement of reactor injection reliability; ① Multiplexing of Pumps, ② Multiplexing of Power Supply and ③ Diversification of Injection Points. ④ Countermeasures for Tsunami were also evaluated.

① Multiplexing of Pumps

Current Status:

- Injection is carried out with use of one temporary pump (non-safety) for each plant respectively.

Measures for Reliability Enhancement:

- A backup pump for non-safety temporary pump is being prepared. It was installed on April 12 and its test operation is planned on April 13 and 14.
- The header is attached to the outlet of the temporary pump which forms the line configuration enabling water delivery using other pump when the pump fails => (Done).
- Injection by the fire engine is feasible as further backup => (Done).

② Multiplexing of Power Supply

Current Status:

- The power is supplied via the Tohoku EPC's power grid.

Reliability Enhancements:

- a. • The temporary pump (non-safety) is powered by the temporary DG if the power from the Tohoku EPC's grid is lost => (Done).
- b. • The bus cable connecting the power supply system for Units 1 and 2 (from Tohoku grid) with that for Units 5 and 6 (from TEPCO grid) is being installed => (Under Preparation).
- c. • Two dedicated power supply cars are deployed to supply the power to 6.9kV M/C of Unit 1/2 and Unit 3/4 power supply systems => (From Today)

③ Diversification of Injection Points

Current Status:

- Injection for Unit 1 via F/W line is carried out by a temporary pump (Non-safety)
- Injection for Unit 2 and 3 is carried out via fire line – low head injection line using a temporary pump (non-safety).

Reliability Enhancements:

- Installation of one injection line from F/W line and increase of F/W line injection points are being prepared. However, there is a concern that about 10% of injection water flow into the condenser because sufficient boundary configuration is difficult in the high radiation area.

④ Countermeasures for Tsunami

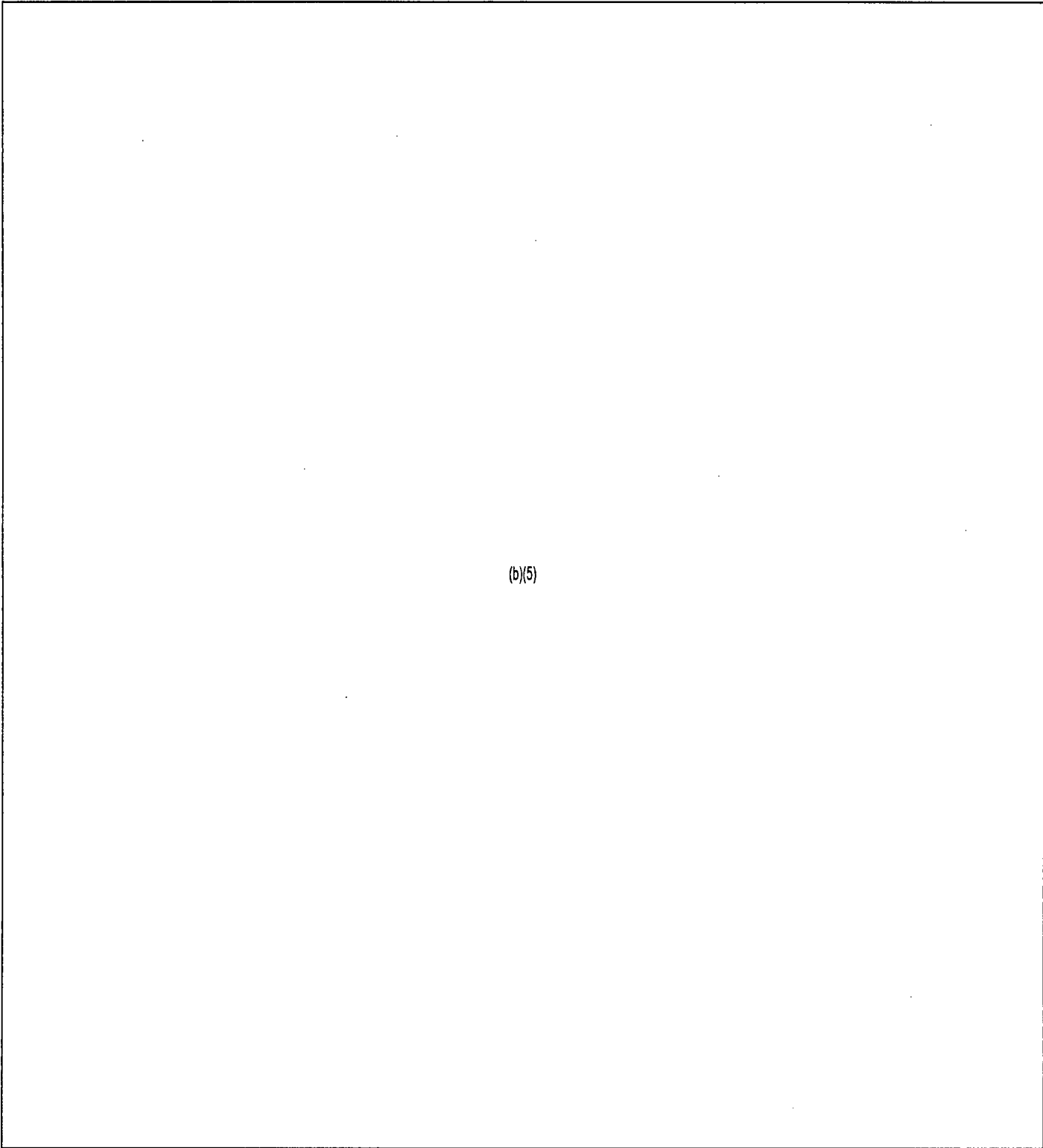
Current Status:

- A temporary pump (non-safety) and a temporary DG are installed near the deionized water tank (low elevation). They cannot be accessed during there occurs the Tsunami warning.
- There is a possibility that the large scale Tsunami could damage the temporary pump, temporary DG, existing hose, etc.

Reliability Enhancements:

- Relocate Pump Control Panel and temporary DG to higher elevation to enable switching over to pump startup operation and temporary DG even when the Tsunami warning is issued.
- The hose reinstallation will be necessary due the damage to the existing hose when the large scale Tsunami hits. Thus, the following material and equipment must be procured and deployed.
 - Fire hose – The 20m x 250 spools already ordered in addition to spares presently available
 - Fire Engines – 10 fire engines are already deployed at higher elevation (by the seismically isolated emergency building
 - Water Source – Headers and others which would facilitate connection of fire hose with pipe branch flange between filtered water, pure water tank and filtered water tank
 - Temporary Pump (non-safety) and Temporary DG – Spare units are being prepared to enable existing equivalent facility after securing the power

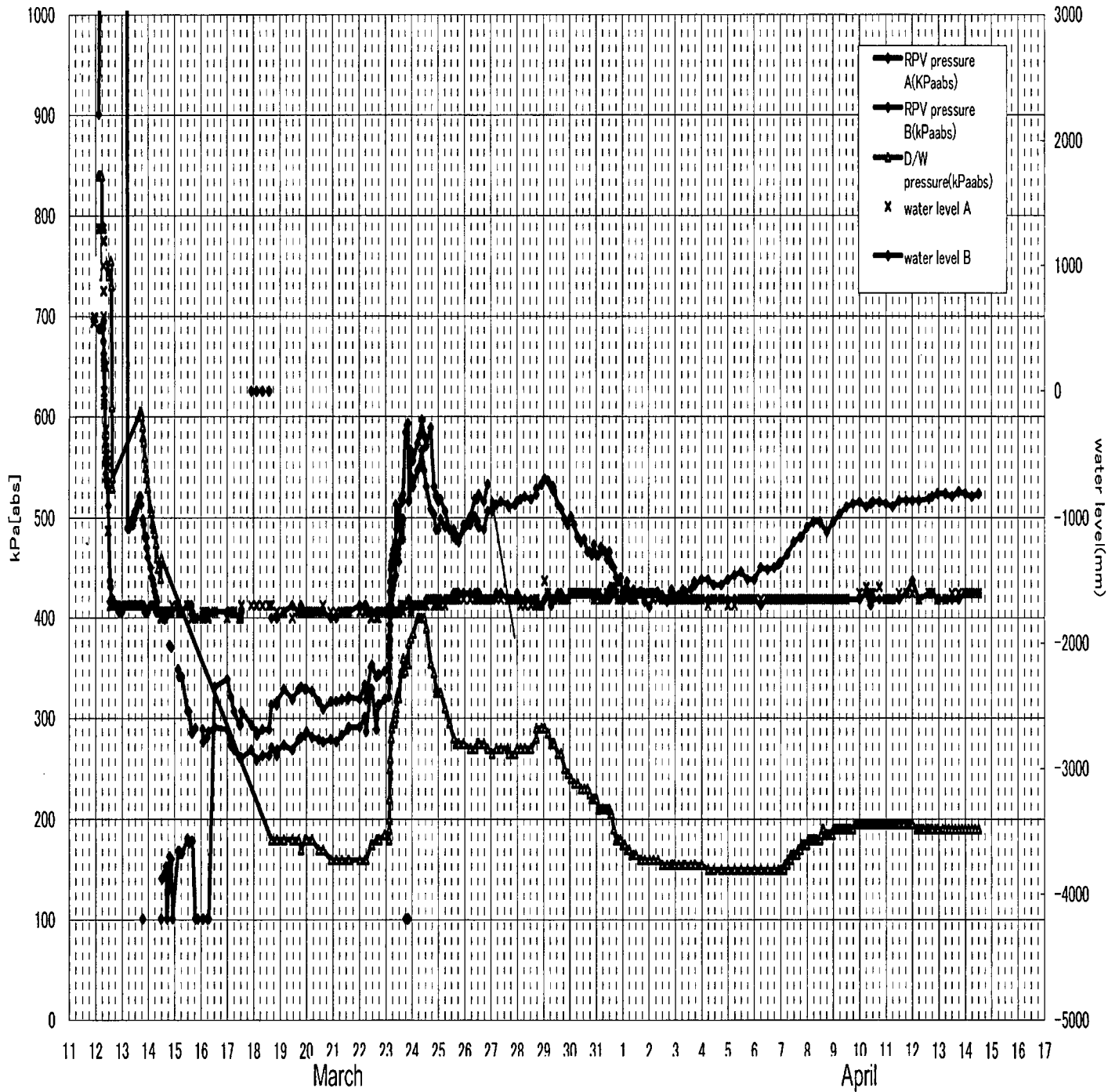
7



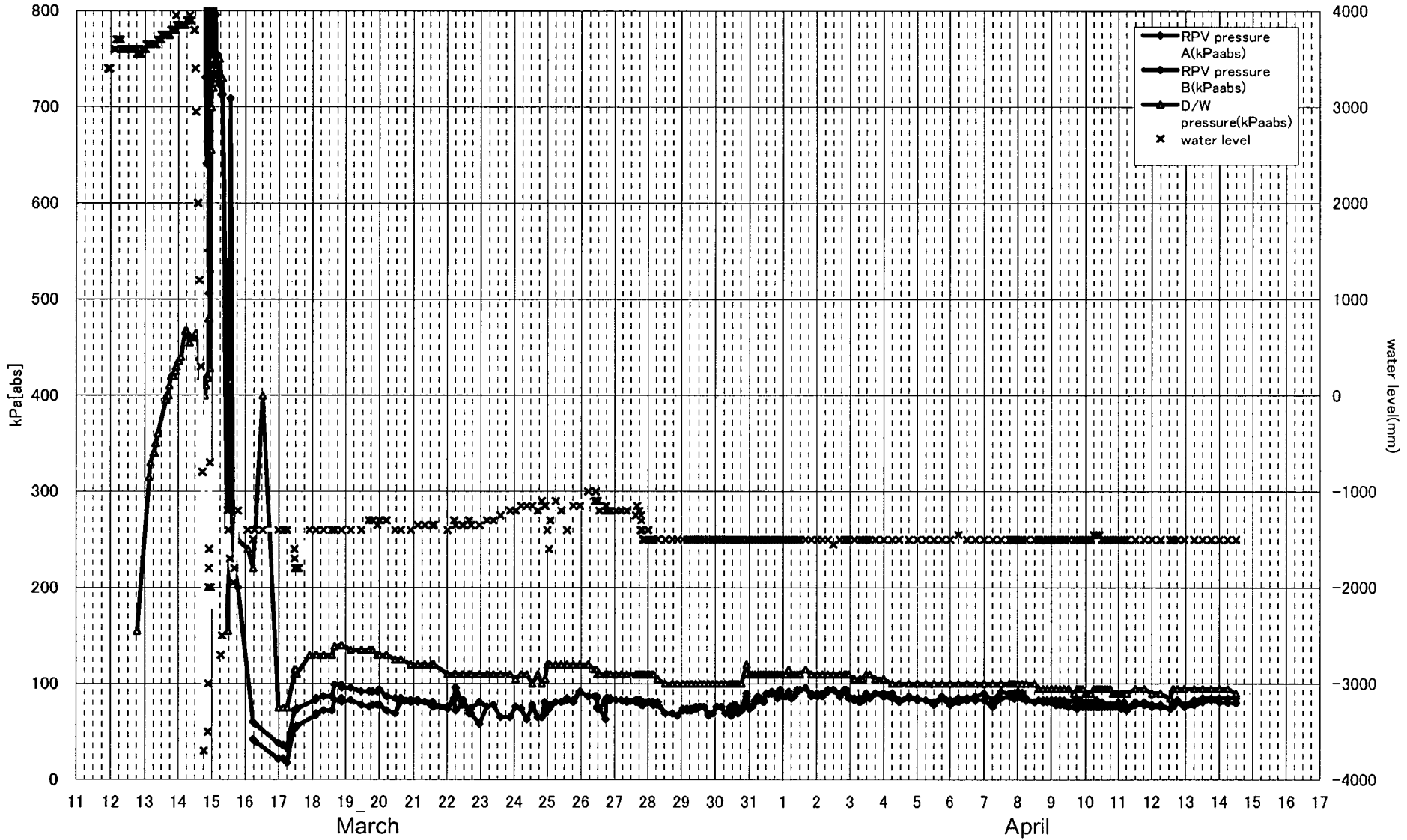
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2

1F1 RPV pressure, D/W pressure, and water level



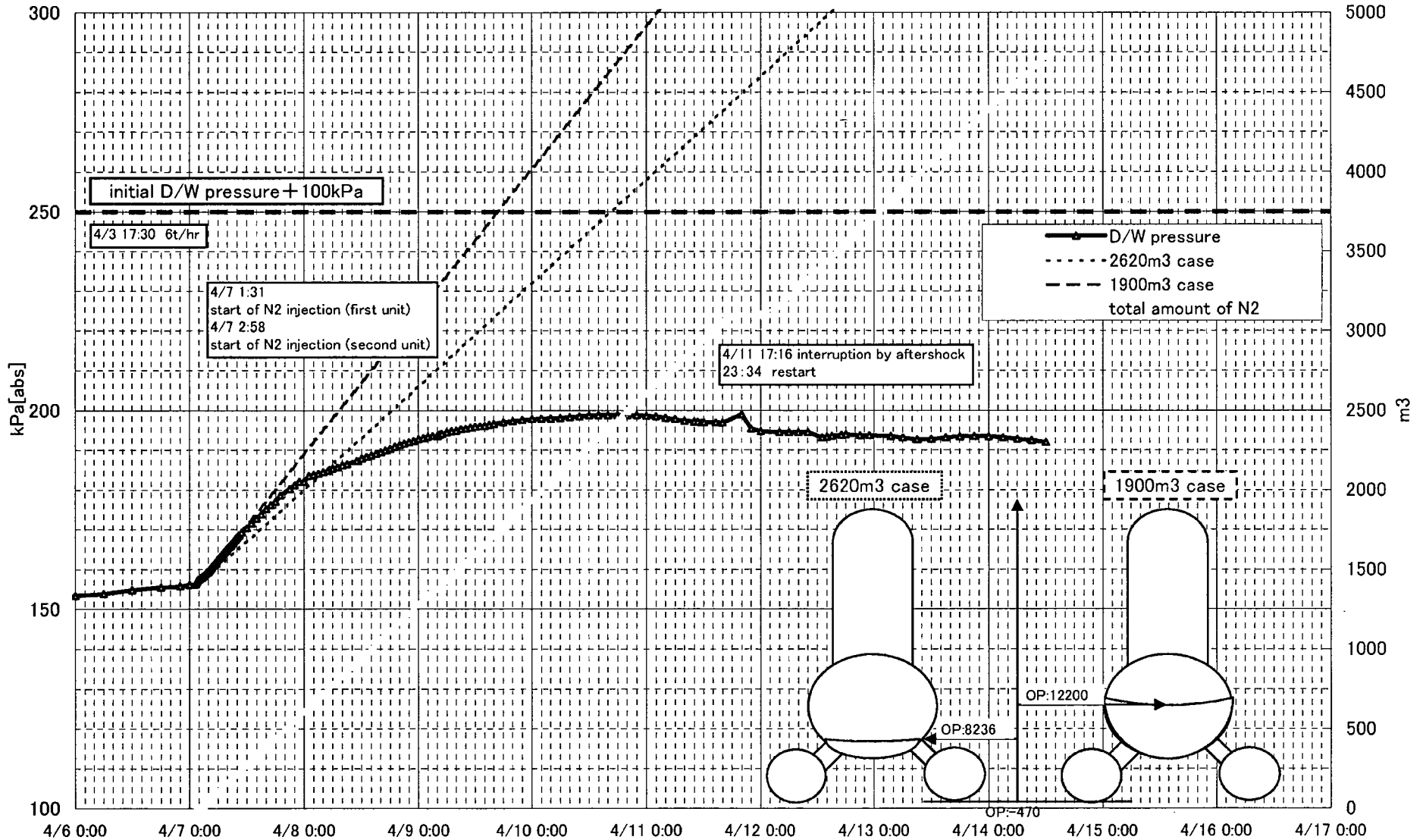
1F2 RPV pressure, D/W pressure, and water level



1F3 RPV pressure, D/W pressure, and water level



1F1 D/W pressure(since the start of N2 injection)



External PCV Cooling (example for 1F-1)

(b)(5)

Assessment of External PCV Water Cooling

Target for Long-term Cooling: Achieve stable core cooling while mitigating release of radioactivity to the environment (atmosphere and ocean)

Assessment for 1F-1 (1F-3 would be similar)

- **Current assumption:** 6ton/hr of water injected in the core is evaporated; some portion of which is released to the atmosphere or T/B with radioactivity.
- **Due to external PCV cooling,** steam released to the atmosphere accompanying radioactivity will decrease in 3 months, but will not become zero. (PCV temp.: 112 °C)
- **On the other hand,** water cooling requires 40ton/hr of injection compared to the current injection rate of 6ton/hr, leading to increased leakage to T/B.
- **Access to R/B is necessary** in order to conduct work on injection line for external PCV cooling.
- **Thus, we will increase water level up to TAF,** maintain current water injection and, if possible, prevent external release by early construction of upper roof. **Target external PCV water cooling in 6 to 7 months** when PCV temperature can be maintained below 100 °C by injection rate of 10ton/hr.

Assessment for 1F-2

- **Focus on closure of suppression pool leakage location by grout or alternative material.**
- **After closure of leakage location,** basically same as for 1F-1, 3.

(b)(4),(b)(5)

(b)(4),(b)(5)

From: RST01 Hoc
Sent: Monday, April 18, 2011 11:36 AM
To:

(b)(6)

Subject: DOE Dose rates from ground contamination
Attachments: Mathcad - dose rate from ground contamination.pdf

From: Versluis, Rob [mailto:ROB.VERSLUIS@nuclear.energy.gov]
Sent: Monday, April 18, 2011 9:20 AM
To: RST01 Hoc
Subject: FW: QUERY - please respond

fyi

Robert Versluis, PhD - tel: 301-903-1890 mob: (b)(6)

From: Gauntt, Randal
Sent: Sunday, April 17, 2011 11:08 PM
To: Versluis, Rob; DL-NERT-All
Cc: chuck.casto@nrc.gov
Subject: RE: QUERY - please respond

Regarding the anticipated dose rate at the floor level of the Unit 4 SFP - I did a point source approximation with varying levels of overlying water. With 2 meters (see graph in attachment) of water shielding and a standoff distance of 10 feet, the dose rate is about 8 R/hr. The main effect is from shielding.

The sheet also has a crude estimate of ground contamination versus observed dose rate - that's for free here.

Randy

From: Versluis, Rob [mailto:ROB.VERSLUIS@nuclear.energy.gov]
Sent: Sunday, April 17, 2011 8:58 PM
To: DL-NERT-All
Subject: Fw: QUERY - please respond

Questions looking for answers.

Rob Versluis +1-301-903-1890(o) + (b)(6) (m)

From: RST01 Hoc <RST01.Hoc@nrc.gov>

To: (b)(6)

(b)(6)

Sent: Sun Apr 17 21:59:53 2011

Subject: FW: QUERY - please respond

Mike Brown has provided the source of the 7 questions to be discussed on the 1100 call Monday April 18

Chuck Norton
RST BWR Analyst

From: Brown, Michael

Sent: Sunday, April 17, 2011 9:42 PM

To: RST01 Hoc

Subject: RE: QUERY - please respond

See below

From: RST01 Hoc

Sent: Saturday, April 16, 2011 8:54 PM

To: Brown, Michael

Subject: RE: QUERY - please respond

Mike,

These are the questions.

Chuck Norton
RST

Questions/Comments from the 1100 Call

1.

a.

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This question came from the Japan site team

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Hope this helps.

Mike

Comments

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(b)(5)

- 1.
- 2.

From: Brown, Michael
Sent: Saturday, April 16, 2011 7:18 PM
To: RST01 Hoc
Subject: RE: QUERY - please respond

I'm not sure what 7 questions you are talking about. Could you email me the questions and I'll let you know.

Or give me a call at 302-438-1507.

Mike

From: RST09 Hoc
Sent: Saturday, April 16, 2011 11:37 AM
To: Brown, Michael
Subject: QUERY - please respond
Importance: High

Mike,

We have a question about the source of the 7 questions you sent out to the consortium after the 11am meeting on Thursday. Could you please give us a call when you get this message? We are trying to clear up a potential misunderstanding.

Thanks so much,
Tina/RST
301-816-5502

Analysis of SPent Fuel Pool Dose Rate with Water Loss
and
Ground Contamination Around Fukushima Power Plant
R.O. Gauntt - Sandia National Laboratories - April 14, 2011

Order of Magnitude Estimation of Dose Rate for an Accident

$$\text{Curies} := 3.7 \cdot 10^{10} \text{ sec}^{-1} \quad \text{MeV} := 3.83 \cdot 10^{-14} \text{ cal} \quad \text{Rad} := 100 \frac{\text{erg}}{\text{gm}} \quad \text{mR} := 10^{-3} \frac{\text{Rad}}{\text{hr}}$$

In order to calculate attenuation of materials such as air, sand or water, use the following attenuation coefficient together with the material density.

$$\begin{aligned} \mu_a &:= 0.06 \frac{\text{cm}^2}{\text{gm}} & \rho_{\text{air}} &:= 1.2 \frac{\text{gm}}{1000 \text{cm}^3} & \rho_{\text{steel}} &:= 8 \cdot \frac{\text{gm}}{\text{cm}^3} \\ \rho_{\text{concrete}} &:= 2.5 \frac{\text{gm}}{\text{cm}^3} & \rho_{\text{sand}} &:= 1 \frac{\text{gm}}{\text{cm}^3} & \rho_{\text{water}} &:= 1 \frac{\text{gm}}{\text{cm}^3} \end{aligned}$$

$$A_{\text{total}} := (0.7 \cdot 10)^9 \text{ Curies} \quad \text{For point source of activity A.....}$$

Following is the flux of isotropic gamma emissions, attenuated by air distance r-squared geometry factor and attenuation through shielding of concrete and/or water.

$$\phi(r, \delta z_{\text{water}}, \delta z_{\text{conc}}) := \left(\frac{A_{\text{total}}}{4 \cdot \pi \cdot r^2} \right) \cdot \left(e^{-\mu_a \cdot \rho_{\text{air}} \cdot r} \right) \cdot \left(e^{-\mu_a \cdot \rho_{\text{water}} \cdot \delta z_{\text{water}}} \right) \cdot \left(e^{-\mu_a \cdot \rho_{\text{concrete}} \cdot \delta z_{\text{conc}}} \right)$$

$$E_{\gamma} := .5 \text{ MeV} \quad \text{assumed energy of gamma}$$

$$\mu := 0.03 \cdot \frac{\text{cm}^2}{\text{gm}}$$

$$\text{Dose_Rate}(r, \delta z_{\text{water}}, \delta z_{\text{conc}}) := \phi(r, \delta z_{\text{water}}, \delta z_{\text{conc}}) \cdot E_{\gamma} \cdot \mu$$

$i := 1, 2 \dots 1000$

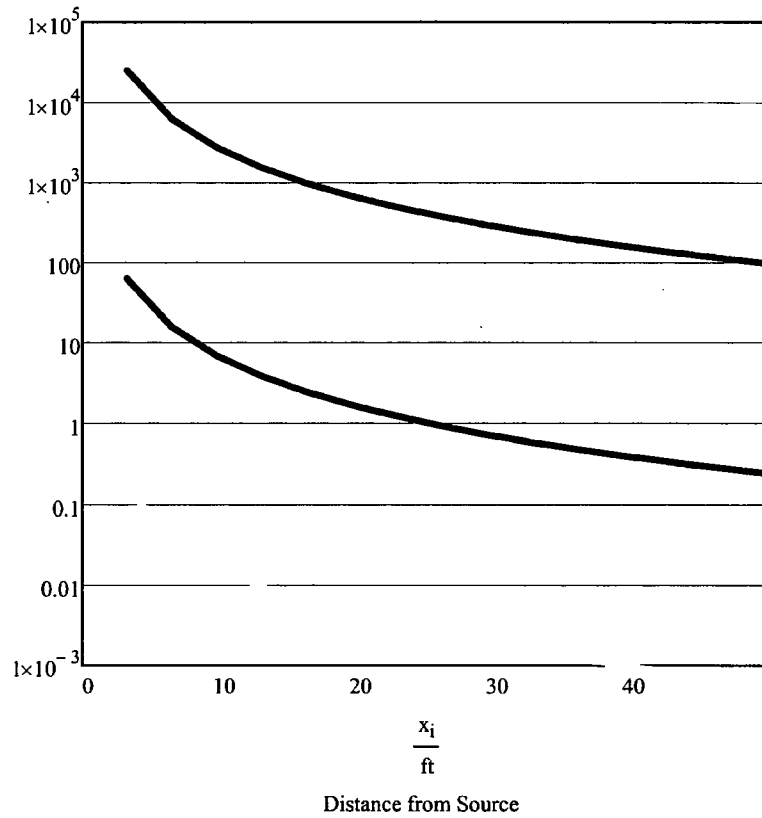
$x_i := i \cdot m$

Dose rate attenuation by thicknesses of water and concrete and distance x from point source

$\frac{\text{Dose_Rate}(x_i, 1m, 0m)}{\frac{\text{Rad}}{\text{hr}}}$

$\frac{\text{Dose_Rate}(x_i, 2m, 0ft)}{\frac{\text{Rad}}{\text{hr}}}$

$\frac{\text{Dose_Rate}(x_i, 3m, 0ft)}{\frac{\text{Rad}}{\text{hr}}}$



$$\frac{30000\text{Curies} \cdot 0.01}{600000\text{L}} = 1.85 \times 10^4 \frac{1}{\text{s}} \cdot \frac{1}{\text{cm}^3}$$

An order of magnitude estimate of deposited activity can be made knowing the ground shine dose rate by assuming that:

- 1) deposited emitters are all shining up as opposed to isotropic since we are dealing with a large area, (an integral over an infinite plane is the right way to do it)
- 2) that half the radiation is pointed downward (factor of 2 greater)
- 3) gamma energy is 666keV (dose assumed dominated by Cs-137)

$$C_{\text{cs}}(\text{dose_rate, area}) := \left(\frac{\text{area} \cdot \text{dose_rate}}{E_{\gamma} \cdot \mu} \right) \cdot 2 \quad \text{Activity that produces ground-level dose rate}$$

So there appears to be land contamination at 10kmx40km at about 0.7mR/hr and about 5kmx20km at 5 mR/hr.

$$\text{Activity} := C_{\text{cs}}\left(0.7 \cdot 10^{-3} \frac{\text{Rad}}{\text{hr}}, 10\text{km} \cdot 40\text{km}\right) + C_{\text{cs}}\left(5 \cdot 10^{-3} \frac{\text{Rad}}{\text{hr}}, 5\text{km} \cdot 20\text{km}\right)$$

$$\text{Activity} = 1.802 \times 10^{16} \frac{1}{\text{s}}$$

$$\text{Activity} = 4.869 \times 10^5 \cdot \text{Curies}$$

$$\frac{400\text{sec}^{-1}}{\text{cm}^3} = 0.011 \cdot \frac{\text{Curies}}{\text{m}^3}$$

$$\text{volume} := 12 \cdot 12\text{m}^2 \cdot 7\text{m} \cdot 0,6 = 6.048 \times 10^5 \text{ L}$$

$$\text{volume} \cdot \frac{400\text{sec}^{-1}}{\text{cm}^3} = 2.419 \times 10^{11} \frac{1}{\text{s}}$$

From: Garchow, Steve
Sent: Monday, April 18, 2011 6:04 PM
To: Mitman, Jeffrey; Lupold, Timothy; Moore, Carl; Norwood, Donald
Subject: FW: 1100 EST 4-18 Consortium Call - Please update contact information
Attachments: April 18 1100 rev1 Agendaitems.doc

From: RST01 Hoc
Sent: Monday, April 18, 2011 10:02 AM

To: [redacted] (b)(6)

[redacted] (b)(6)

Cc: Garchow, Steve
Subject: 1100 EST 4-18 Consortium Call - Please update contact information

If you were supposed to receive this email, I don't need to hear back from you (unless you have comments on the agenda).

If you have no need for this email, please REPLY and let me know so I can update our consortium email distribution list.

If there is someone in your organization who should also be on the consortium distribution, please let me know.

See the attached agenda for the 1100 EST consortium call.

[redacted] (b)(5)

Larry Criscione
NRC Reactor Safety Team

Agenda: Technical Consortium Call

Date/Time: April 18, 2011/11:00 AM

Old Business:

- **N2 injection into a containment with a high steam generation rate:**

The Japan team provided answer to the following questions on today's 3:00 AM call.

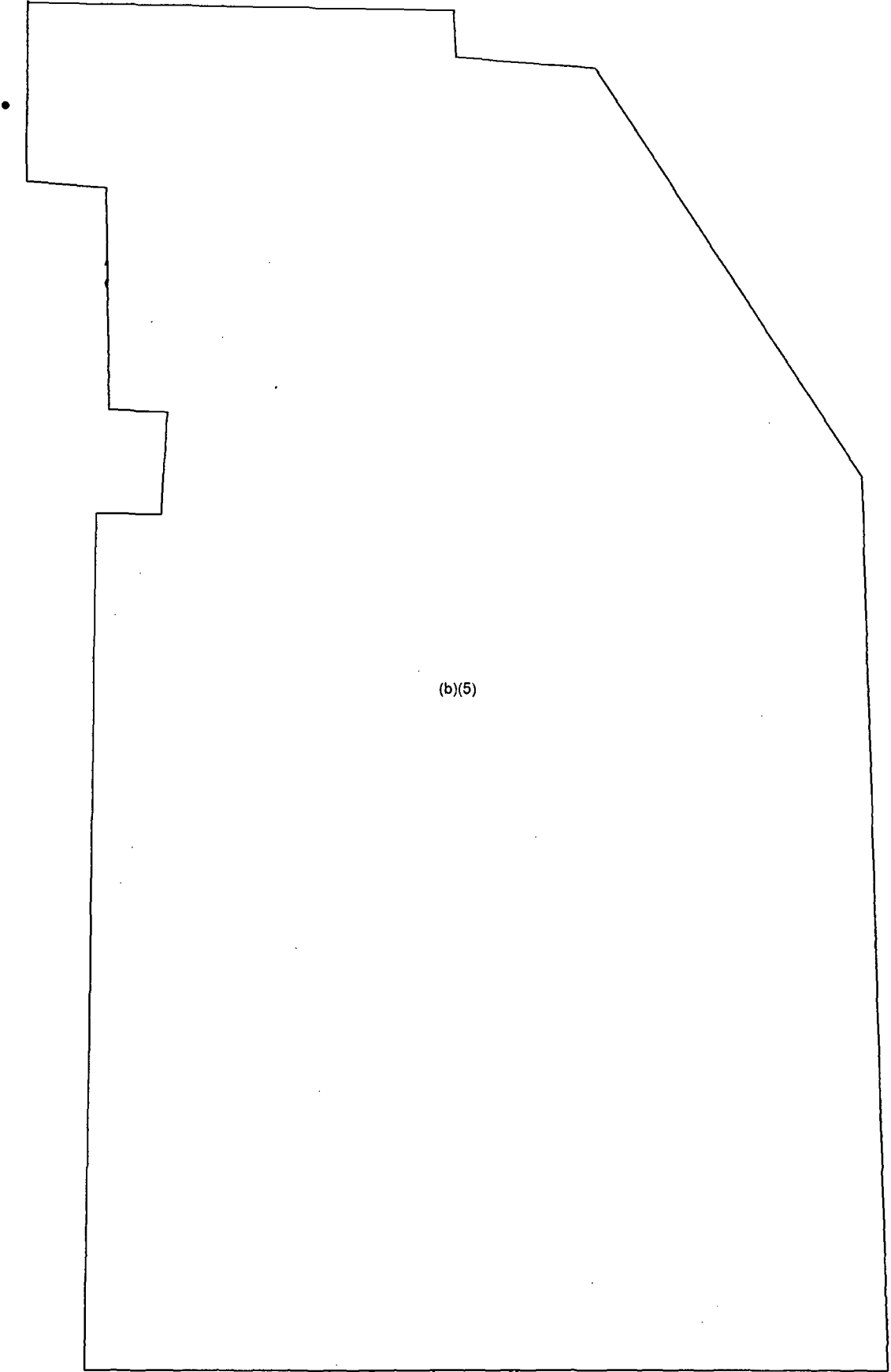
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completion time:



(b)(5)

Ans - No, the plan is to continue to inert Unit 1.

This question came from our international regulators since they were initially only going to inert for 4 days and it's been > 4 days that they have been injecting N2

6. Any concerns that may have more instrument failures due to operating in a high radiation / high temperature environment?

Yes, Team has shared a TMI lessons learned document on predicting Instrument failures and there have been personnel offers to help with this issue through the INPO connections.

This question came from Chuck Casto during the 8:30 phone call

7. Received report today that TEPCO thinks they have 4' of water in DW, I thought we believed they had 10-12' any effort to reconcile differences?

Ans - Understand that they have 4' of water in containment not more.

This question came from Chuck Casto's comment during the 8:30 phone call that a DW switch changed state indicating that water level was > 4' in the DW and our previous calculation from GEH indicating that water level was 10-12' in the DW.

New Business:

- Discuss gaps in TEPCO Road Map.

Make an initial high level assessment (are the major elements for success included in the roadmap)

The Japan team relayed to us that Tepco would be interested in any further ideas to ensure the immediate actions which include cooling the Rx and the SFP could be enhanced with redundant and diverse injection systems.

What are the end states (Step 1 & Step 2 of Road Map) and how they would know that they have completed Step 1 and Step 2?

Take assignments to perform detailed assessments of the Road Map.

- INPO – Said they review the Road Map
- GEH?
- Naval Reactors?
- DOE?

From: Versluis, Rob <ROB.VERSLUIS@nuclear.energy.gov>
Sent: Monday, April 11, 2011 5:49 PM
To:

(b)(6)

Cc: Ali, Syed; Blamey, Alan; Call, Michel; Casto, Chuck; Collins, Elmo; Emche, Danielle; Jackson, Todd; Bernhard, Rudolph; Salay, Michael; Sheikh, Abdul; Stahl, Eric; Ulses, Anthony
Subject: RE: RESENT: OUO - Latest Draft of RST Assessment Rev. 2

As some of you have noted, I neglected to attach the document. However, my edits are included in the comments that Alice Caponiti sent out a little while ago.

Robert Versluis, PhD - tel: 301-903-1890 mob: (b)(6)

From: Versluis, Rob
Sent: Monday, April 11, 2011 3:10 PM
To:

(b)(6)

(b)(6)

Cc: Ali, Syed; Blamey, Alan; Call, Michel; Casto, Chuck; Collins, Elmo; Emche, Danielle; Jackson, Todd; Bernhard, Rudolph; Salay, Michael; Sheikh, Abdul; Stahl, Eric; Ulses, Anthony
Subject: RE: RESENT: OUO - Latest Draft of RST Assessment Rev. 2

Edits on p 21, 23, 24. Note especially comment on p 23.

Robert Versluis, PhD - tel: 301-903-1890 mob: (b)(6)

From: RST01 Hoc [mailto:RST01.Hoc@nrc.gov]
Sent: Monday, April 11, 2011 5:46 AM
To:

(b)(6)

(b)(6)

Cc: Ali, Syed; Blamey, Alan; Call, Michel; Casto, Chuck; Collins, Elmo; Emche, Danielle; Jackson, Todd; Bernhard, Rudolph; Salay, Michael; Sheikh, Abdul; Stahl, Eric; Ulses, Anthony
Subject: RESENT: OUO - Latest Draft of RST Assessment Rev. 2

Please use the attached version of RST Assessment Rev. 2. It corrects an error related to stability that was contained in the earlier version.

From: RST01 Hoc

Sent: Monday, April 11, 2011 4:32 AM

To: [Redacted] (b)(6)

[Redacted] (b)(6)

Cc: RST01 Hoc; Ali, Syed; Blamey, Alan; Call, Michel; Casto, Chuck; Collins, Elmo; Emche, Danielle; Jackson, Todd; Bernhard, Rudolph; Salay, Michael; Sheikh, Abdul; Stahl, Eric; Ulses, Anthony

Subject: OOU - Latest Draft of RST Assessment Rev. 2

Attached is the latest version of the draft RST Assessment document. It reflects the work done over the weekend and includes changes from the SFP assessment and the stability documents which have been incorporated herein (and no longer exist as stand-alone documents).

Thank you for your review of the document. We look forward to receiving your initial comments later today (Monday). Once all initial comments are received, a new draft, for final comment, will be distributed.

"This document is for Official Use Only and is not intended to be shared with other stakeholders without NRC approval."

From: Versluis, Rob <ROB.VERSLUIS@nuclear.energy.gov>
Sent: Monday, April 11, 2011 3:03 PM
To:

(b)(6)

Cc: RST06 Hoc
Subject: RE: OUO - Option B Paper - Final

Page 2, II.1.second bullet is a duplicate of bullet on the first page; II.1.first bullet is close to duplicate.

Robert Versluis, PhD - tel: 301-903-1890 mob:

(b)(6)

From: RST01 Hoc [mailto:RST01.Hoc@nrc.gov]
Sent: Sunday, April 10, 2011 6:00 AM
To:

(b)(6)

(b)(6)

Cc: RST01 Hoc; RST06 Hoc
Subject: OUO - Option B Paper - Final

Please find the attached final version of the Option B paper. This paper will be transmitted to NISA this evening.

Note that this document is for Official Use Only and is not intended to be shared with other stakeholders without NRC approval.

RST

From: RST09 Hoc
Sent: Sunday, April 10, 2011 11:08 AM
To: RST01 Hoc; RST01B Hoc
Subject: Criterion to Establish Stable Conditions - NRC DRAFT5_10_1100.docx
Attachments: Criterion to Establish Stable Conditions - NRC DRAFT5_10_1100.docx

From: RST03 Hoc
Sent: Saturday, April 09, 2011 3:05 PM
To: RST01 Hoc
Cc:

(b)(6)

Subject: RE: FINAL - 04-09-11 1200 RST Assessment Spent Fuel Pool Document
Attachments: RE: Final SFP Assessment Document

Most of the NR comments sent Thursday morning (see attached email) were not addressed in this "final" document. Accordingly, I request that the RST either revise the paper to address the comments or inform NR how the comments were resolved.

Tom Roberts sends.

From: RST01 Hoc
Sent: Saturday, April 09, 2011 12:11 PM
To: Ali, Syed; Blamey, Alan; Call, Michel; Casto, Chuck; Collins, Elmo; Emche, Danielle; Giessner, John; Jackson, Todd; Monninger, John; NRC Team at USAID; Bernhard, Rudolph; Salay, Michael; Scott, Michael; Sheikh, Abdul; Stahl, Eric; Taylor, Robert; Way, Ralph

Cc: (b)(6)

(b)(6)

Subject: FW: FINAL - 04-09-11 1200 RST Assessment Spent Fuel Pool Document

For your information and comment.

From: RST08 Hoc
Sent: Saturday, April 09, 2011 12:06 PM
To: RST01 Hoc
Subject: FINAL - 04-09-11 1200 RST Assessment Spent Fuel Pool Document

Here is the final version of the RST assessment of the Fukushima Spent Fuel Pools.

The insights and information from this document will be included in the latest revision of the RST Assessment document that is being revised and hopefully issued early next week.

Let me know if you have any questions.

Thanks,

Mike

Mike Brown
Reactor Safety Team

From: RST01B Hoc
Sent: Friday, April 08, 2011 2:22 PM
To: RST09 Hoc; RST08 Hoc
Subject: FW: TEPCO Earthquake Information Update on April 8: Plant Status of Fukushima Daiichi NPS

Rob Versluis, PhD, DOE NE-71, 301-903-1890 (o) (b)(6) (m)

From: RST01B Hoc
Sent: Friday, April 08, 2011 12:34 PM
To: RST01B Hoc
Subject: FW: TEPCO Earthquake Information Update on April 8: Plant Status of Fukushima Daiichi NPS

Rob Versluis, PhD, DOE NE-71, 301-903-1890 (o) (b)(6) (m)

Dear Friends,

Here are updates on Plant Status of Fukushima Daiichi NPS as of April 8.

<Draining water from underground floor of turbine building>

✓ For Units 1 to 3, we are planning to discharge water to the H/W. Unit 4 is under consideration.

	T/B underground	Hot well (H/W)	Condensate storage tank (CST)
Unit 1	Waiting for discharge of H/W	4/3 13:55 Started transfer to CST	4/2 Completed transfer to SP surge tank
Unit 2	Waiting for discharge of H/W	4/2 17:10 Started transfer to CST	4/1 Completed transfer to SP surge tank
Unit 3	Waiting for discharge of H/W	Planning to transfer to CST	3/31 Completed transfer to SP surge tank

SP : suppression pool

< Outflow of fluid containing radioactive materials to the ocean from areas near intake channel of Unit

2>

- At around 5:38 am on April 6th, we have confirmed the outflow from the storing power cable pit.

- A leak prevention using rubber plate and fixer was implemented. We will continue the leak prevention work and monitor further leakage.
- ✓ Other measures taken since April 5th
- Piling large sandbags around the port on the south side to the ocean is in the process.
- Preparing spillage prevention fences in order to mitigate the outflow to the ocean.

< Injection of nitrogen gas to the primary containment vessel of Unit 1 >

- ✓ Nitrogen gas injection using temporarily nitrogen generator is planned to the pressure at Initial pressure + 100 kPa, about 6,000 m³.
- At 10:30 pm on April 6th, the operation started (System configuration, leak check etc).
- At 1:31 am on April 7th, injection was initiated (1st nitrogen-generator). At 2:58 am, 2nd nitrogen-generator was added.
- The pressure of D/W before the injection of nitrogen gas (at 1:20 am on April 7th) was 156.3 kPaabs. → At 1:00 pm on April 8th, the pressure was increased to 185 kPaabs.

<Low Level Radioactive Water discharge in the sea from Central Waste Treatment Facility and Sub Drain at Units 5 and 6 >

【Central Waste Treatment facility】

- From 10:30 pm on April 4th to 6:30 am on April 6th, approximately 5,800t was discharged from the water discharge canal of Unit 1 to 4.
- From 6:00 pm on April 6th to 4:00 pm on April 7th, approximately 1,600t was discharged from the water discharge canal of Unit 1 to 4.
- ✓ We are confirming residual water volume.

【Sub drain of Unit 5 and 6】

- From 9:00 pm on April 4th, discharge from the water discharge canal of Units 5/6 4 have been underway (approximately 1,250t, as of 1:45 pm on April 8th). Residual water of 250t is scheduled to finish discharging by April 9th.

<Monitoring of radioactive materials >

- ✓ Density of Iodine 131 in the sea

Sampling location (seacoast)	Date/Time	Density	Ratio to the criteria
Water discharge of Unit 5~6 of Fukushima Daiichi. Approx. 30m north	4/7 8:50am	110 Bq/cm ³	Approx. 2800 times
	4/7 2:20pm	32 Bq/cm ³	Approx. 800 times
Water discharge of Unit 1~4 of Fukushima Daiichi. Approx. 330m south	4/7 8:30am	2.2 Bq/cm ³	Approx. 55 times
	4/7 2:00pm	1.7 Bq/cm ³	Approx. 43 times

Sampling location (offshore)	Date/Time	Density	Ratio to the criteria
Around the north water discharge of Fukushima Daini (approx. 10km from Fukushima Daiichi)	4/7 9:55am	1.8 Bq/cm ³	Approx. 45 times

Around Iwasawa seashore (approx. 16km from Fukushima Daiichi)	4/7 9:10am	2.0 Bq/cm ³	Approx. 50 times
Approx. 15km from the offshore of Minamisoma City	4/7 10:30am	0.37 Bq/cm ³	Approx. 9.3 times
Approx. 15km from the offshore of Ukedo River	4/7 10:02am	0.16 Bq/cm ³	Approx. 4.0 times
Approx. 15km from the offshore of Fukushima Daiichi	4/7 9:36am	0.099 Bq/cm ³	Approx. 2.5 times
Approx. 15km from the offshore of Fukushima Daini	4/7 9:08am 4/7 10:24am	0.04 Bq/cm ³ 0.046 Bq/cm ³	Approx. 1 times Approx. 1.2 times
Approx. 15km from the offshore of Iwasawa seashore	4/7 8:43am 4/7 9:52am	0.053 Bq/cm ³ 0.056 Bq/cm ³	Approx. 1.3 times Approx. 1.4 times
Approx. 15km from the offshore of Hirono town	4/7 8:14am 4/7 9:15am	0.03 Bq/cm ³ 0.048 Bq/cm ³	Approx. 0.75 times Approx. 1.2 times

<Water injection and spraying to spent fuel pool>

✓ Results on April 7th

【Unit 2】 1:29pm~2:34pm Injected fresh water using spent fuel cleanup water system.

【Unit 3】 6:53am~8:53am Sprayed fresh water by the concrete pump vehicle (approximately 70t).

【Unit 4】 6:23pm~7:40pm Sprayed fresh water by the concrete pump vehicle (approximately 38t).

✓ Results and plans for April 8th

【Unit 3】 Spraying fresh water by the concrete pump vehicle.

<Water injection to the reactor>

【Unit 1】 Injecting fresh water to reactor pressure vessel.

Reactor pressure vessel Temperature:

April 8th 1:00pm <Water feed nozzle> 246.6C

<Bottom of reactor pressure vessel> 119.4C

【Unit 2】 Injecting fresh water using concrete pump vehicle.

Reactor pressure vessel Temperature:

April 8th 12:00pm <Water feed nozzle> 141.2°C

【Unit 3】 Injecting fresh water to reactor pressure vessel.

Reactor pressure vessel Temperature:

April 8th 12:00pm <Bottom of reactor pressure vessel> 110.7°C

【Unit 4】 No particular changes on parameters.

【Unit 5/6】 Reactor cold shutdown. No particular changes on parameters.

【Common spent fuel pool】 No particular changes on parameters.

<Restoration of power source>

【Unit 1 to 6】 Continuing to confirm the soundness of equipment.

<Fresh water supply using US forces' Barge (capacity of approximately 1,300 tons)>

- April 3rd, 9:52am~11:15am Started transferring water from the second barge to the first barge.

- April 4th, 11:54am The second barge replenished with fresh water reentered the port and stand by.

<Others>

- April 7th, approximately 12:00pm Mega Float entered into the Yokohama Port.

- April 7th, approximately 11:32pm an earthquake occurred in the offshore of Miyagi Prefecture.

We conducted inspection of each plant of Fukushima Daiichi and Daini NPS after the earthquake and no trouble was detected.

- No injured
- Continuing the injection of fresh water to the reactor pressure vessel of Unit 1~3
- No apparent changes in water level of trench are confirmed for Unit 1~3
- Continuing the injection of nitrogen gas to the primary containment vessel of Unit 1.

- April 8th, 11:00~14:00 Conducted test spray of anti-scattering agents. (spraying approximately 1000 liters of anti-scattering agents to the area of 500m² of mountain side of the common fuel pool)

- April 7th, approximately 14:33, one of the workers in charge of stuffing sandbags at the soil disposal situated at the northern part of the site felt sick and was brought to J-Village. We confirmed that the worker was not contaminated, and was brought to Iwaki City Kyoritsu Hospital by an ambulance. On April 8th, he is diagnosed as dehydration and transient unconsciousness. He left the hospital afterward.

From: Wagner, Katie
Sent: Friday, April 08, 2011 12:18 PM
To: Gibson, Kathy
Cc: RST01B Hoc; Lee, Richard
Subject: RE: Another request for info from Sharepoint
Attachments: Sand reaction

Good Afternoon Kathy,

The attached email is probably not what was sent in the past, however it looks relevant to what the RST is looking for. I will continue to look for the original email.

Thanks,
Katie

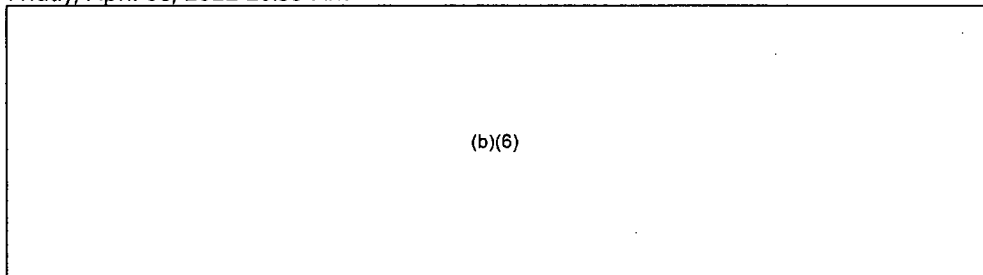
From: PMT09 Hoc
Sent: Friday, April 08, 2011 4:07 AM
To: Lee, Richard; Wagner, Katie
Subject: Another request for info from Sharepoint
Importance: High

Richard, Katie,
RES provided information to the RST regarding exothermic reaction with silicon from sand slurry, and it cannot be found. RST would like us to provide that information again.

Please find the information and resend to RST.

Thanks,
Kathy G.

From: RST01 Hoc
Sent: Friday, April 08, 2011 10:59 AM
To:



(b)(6)

Subject: FW: ERC 1100 Daily Call 4-8-11.docx
Attachments: ERC 1100 Daily Call 4-8-11.docx

From: Reandeau, Michael A. (INPO) [mailto:ReandeauMA@inpo.org]
Sent: Friday, April 08, 2011 9:42 AM
To: RST01 Hoc
Cc: INPOERCTech; Paley, Robert M. (INPO)
Subject: ERC 1100 Daily Call 4-8-11.docx

Mike Brown,

Attached is the agenda for today's 1100 EST conference call. I have removed the bottom section that had action items from previous calls as it contributed to confusion from some parties.

Mike Reandeau
INPO ERC Technical Lead

4/8/2011

1100 – Technical Refocus Meeting – Led by INPO Tech Lead

1. Review agenda for the call:
2. Discuss the Status of Open Actions
 - a. RST Assessment proposed Rev.2 (NRC RST lead)
 - b. Status of structural integrity of U4 SFP (GEH lead)
3. Review new action items discussed during the call.
4. Adjourn

Action Items from 4/8/2011 1100 EST Conference Call:

From: Versluis, Rob <ROB.VERSLUIS@nuclear.energy.gov>
Sent: Friday, April 08, 2011 9:16 AM
To: RST01B Hoc
Subject: FW: Suggestions on filling reactor cavity

Rob Versluis, PhD, DOE NE-71, 301-903-1890 (o) (b)(6) (m)

From: Kelly, John E (NE)
Sent: Thursday, April 07, 2011 9:28 PM
To: DL-NERT-All; DL-NITSolutions
Subject: FW: Suggestions on filling reactor cavity

From: Gambone, Robert L (INPO) [mailto:GamboneRL@INPO.org]
Sent: Thursday, April 07, 2011 6:11 PM
To: Kelly, John E (NE)
Cc: Ellis, Jim; Webster, Bill E (INPO); Purcell, Richard T. (INPO)
Subject: Suggestions on filling reactor cavity

John, below are some options that the industry has developed to possibly fill the reactor cavity and remove energy from the drywell head.

The reactor cavity may be able to be flooded with the fuel pool gates and cavity blocks installed to provide cooling water to the drywell head using the following methods. These methods do not take into account the availability of some of the systems or how to provide the water source to the system or the feeder system itself.

1. Cavity Sparger System (Drywell Cavity Return Diffuser): If the station has the ability, and they have cavity spargers, they can flood the cavity through the sparger system. Condensate piping can be used to provide a water source to complete flooding of the cavity in a very short period of time. The cavity sparger system is direct method to flooding up around the Drywell head. The cavity sparger system likely has lines that feeds the header and can be fed from a number of systems.
2. Back flow skimmer surge through cavity weirs: By dramatically increasing skimmer surge level the spent fuel pool level would rise causing the water to flow into the vents along the spent fuel pool. These vents have proven to communicate with the reactor cavity as well as the equipment storage pit. Both which could prove an effective path to flooding up around drywell head. The assumption is that the equipment storage pit shield blocks are not sealed and therefore as the water rises in the equipment pit it would flow through the gaps in the shield blocks. This assumption is again made based on the ability to have fuel pool cooling in service or a alternate method of make-up level to flood into the duct work and into the adjacent cavity. There is OE that shows inadvertent water entry into spent fuel pool ventilation duct communicates directly with the equipment pit or cavity ducts.
3. Cavity Wall ventilation duct: Majority of the reactor cavities contain ventilation ducts within the top 10'. The ducts communicate with those in the spent fuel pool, equipment storage pit and normally, the elevation's below. If the HVAC were able to be used as a communication path between the cavity and the ducts below, the water would be able to

migrate around the head. The only caveat would be if during a normal run cycle, these ventilation ducts were blanked off. At some plants the ventilation ducts are blanked during normal operations, however, there is an 8" round ventilation duct that remains open to provide general air flow into the cavity while the shield blocks are installed.

4. An additional thought about the HVAC system... if the system has unit coolers providing air movement in the cavity, the cooling coil may be a weak link in that system. It might be feasible to connect a higher pressure water source and try to pop the coil tubes, thus providing another flow path into the cavity.

5. Flood-up through inner & outer bellows drain line: A drain exists that supports cavity drain down. This may be a viable option to provide a cooling source of water to the Drywell head and seal plate area. Additionally, the inner bellows drain line may communicate with the seal plate. By opening Fuel Pool Drain to radwaste it may be able to assist in the flooding of the seal plate/cavity while also providing cooling water to the mirror insulation and reactor head, but, using inner bellows drains would also flood the drywell as there are normally ventilation hatches which are not installed during run cycle.

Rob Gambone
VP, Plant Operations Division
INPO
770-644-8713 work
(b)(6) cell
GamboneRL@inpo.org

From: Versluis, Rob <ROB.VERSLUIS@nuclear.energy.gov>
Sent: Thursday, April 07, 2011 6:41 PM
To: RST01B Hoc
Subject: FW: Spent Fuel Pool Assessment Markup for 1100
Attachments: DOE_COMMENTS - 04-05-11 0400 RST Assessment Spent Fuel Pool Document [1]
[3].docx; SFP Conduction Analysis[3]_jlb[1].pptx

Rob Versluis, PhD, DOE NE-71, 301-903-1890 (o) (b)(6) (m)

From: Caponiti, Alice
Sent: Tuesday, April 05, 2011 8:41 PM
To: 'RST01 Hoc'
Cc: Versluis, Rob; Kelly, John E (NE); Golub, Sal
Subject: RE: Spent Fuel Pool Assessment Markup for 1100

Attached are DOE comments on the spent fuel pool assessment. (b)(5)
(b)(5)

Thanks,

Alice Caponiti

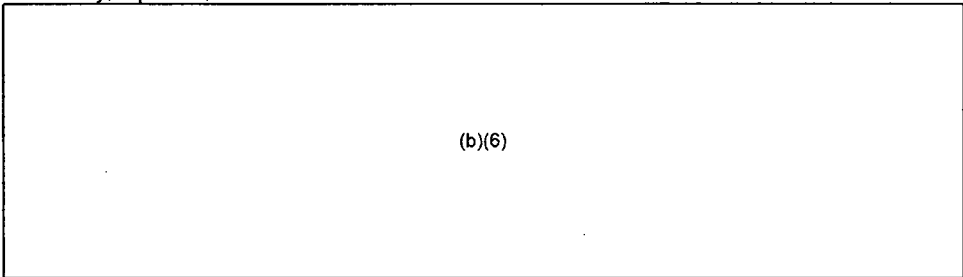
From: RST01 Hoc [mailto:RST01.Hoc@nrc.gov]
Sent: Tuesday, April 05, 2011 9:50 AM
To: (b)(6)
(b)(6)

Cc: FOIA Response.hoc Resource
Subject: FW: Spent Fuel Pool Assessment Markup for 1100

From: RST08 Hoc
Sent: Tuesday, April 05, 2011 9:47 AM
To: RST01 Hoc
Subject: Spent Fuel Pool Assessment Markup for 1100

Please Forward to Technical Industry Consortium for 1100 Call.

From: RST01 Hoc
Sent: Thursday, April 07, 2011 3:07 PM
To:



Subject: FW: Rev 2 to RST Assessment Document

After discussions with GEH Engineering and due to changing plant conditions, we have decided to re-visit our current assessment of Fukushima Daiichi Units to see if a Rev. 2 to this document is warranted, particularly nitrogen injection.

We suggest discussion during the 11:00 call on 4/8/11. If possible, pls send comments prior to the call to RST01.hoc@nrc.gov.

Thanks,

Mike

Mike Brown
Reactor Safety Team

From: Versluis, Rob <ROB.VERSLUIS@nuclear.energy.gov>
Sent: Thursday, April 07, 2011 1:04 PM
To: RST01 Hoc; RST09 Hoc; RST08 Hoc
Cc: RST01B Hoc
Subject: FW: Fukushima Daiichi Nuclear Plant Hi-Res Photos
Attachments: ATT00002..txt

Photos of site from drone

Rob Versluis, PhD, DOE NE-71, 301-903-1890 (o) (b)(6) (m)

A MIME attachment of type <application/octet-stream> was removed here by a drop-attachments-by-name filter rule on the host <mail2.nrc.gov>.

From: RST01 Hoc
Sent: Thursday, April 07, 2011 11:46 AM
To: RST06 Hoc; RST01B Hoc; RST09 Hoc; RST08 Hoc
Subject: FW: [METI Japan](Apr_7)Update on Seismic and Tsunami Damage Information
Attachments: [METI] Apr 5 0800_Tohoku-Pacific Ocean Earthquake and the Seismic Damages to the NPSs.pdf; Apr_7_Radioactivity Level Map [Chart].pdf

FYI

-----Original Message-----

From: LIA02 Hoc
Sent: Thursday, April 07, 2011 11:42 AM
To: RST01 Hoc; Hoc, PMT12; PMT02 Hoc
Subject: FW: [METI Japan](Apr_7)Update on Seismic and Tsunami Damage Information

-----Original Message-----

From: meti-info@meti.go.jp [mailto:meti-info@meti.go.jp]
Sent: Thursday, April 07, 2011 11:14 AM
To: meti-info@meti.go.jp
Subject: [METI Japan](Apr_7)Update on Seismic and Tsunami Damage Information

For your reference, Ministry of Economy, Trade and Industry of Japan (METI) is providing latest information on the seismic and tsunami damages to the nuclear power stations (NPSs) in Japan, including those caused to Fukushima Dai-ichi NPS.

This Thursday, the following information has been updated.

---- Today's news ----

1. As it is suspected that hydrogen gas may be accumulated inside reactor containment vessel of Unit 1, the injection of nitrogen to the reactor was started at 1:31AM, April 7th. [Please refer to 9. below]

---- Updates from METI ----

2. [METI] Apr 5_0800_Tohoku-Pacific Ocean Earthquake and the Seismic Damages to the NPSs [Please refer to the attached file]

3. [METI] Apr 7_Radioactivity Level Map Chart [Please refer to the attached file]

---- Updates from NISA ----

4. [NISA] Apr 7 1530_Current Situation of Onagawa, Fukushima Dai-ichi, Fukushima Dai-ni, Tokai Dai-ni NPSs (only Japanese version is available) <http://www.meti.go.jp/press/2011/04/20110407006/20110407006-1.pdf>

5. [NISA] Apr 7 1200_Fukushima Dai-ichi Major Parameters of the Plant (only Japanese version is available)
<http://www.meti.go.jp/press/2011/04/20110407006/20110407006-3.pdf>

---- Major Updates from other agencies of Japanese Government --- 6.[MLIT] Apr 7 PM_Measurement of Radiation Doses in the Ports around Tokyo Bay http://www.mlit.go.jp/kowan/kowan_fr1_000041.html
Currently, the level of radiation in Tokyo City, Yokohama City, Kawaski City and Ichikawa City (Chiba) were as shown in the attachment at very safe level to health.

7. [MLIT] Apr 7 PM_Measurement of radiation doses around the Metropolitan Airports
http://www.mlit.go.jp/koku/koku_tk7_000003.html
The current level of radiation does not have any effects on human health.

8. [NSC] Apr 5 1645_Assessment of the result of environment monitoring (only Japanese version is available)
http://www.nsc.go.jp/nsc_mnt/110407_1.pdf

---- Other Updates ----

9. [TEPCO] Apr 7 1600_As it is suspected that hydrogen gas may be accumulated inside reactor containment vessel of Unit 1, at 10:30 pm, April 6th, TEPCO started the operation of the valve for the injection of nitrogen to the reactor in order to prevent the increase of oxygen density.
Following this, the injection of nitrogen to the reactor was started at 1:31AM, April 7th.
<http://www.tepco.co.jp/en/press/corp-com/release/11040706-e.html>

If you need to add other e-mail address to this mailing list or do not need our information mail any more, please contact at meti-info@meti.go.jp

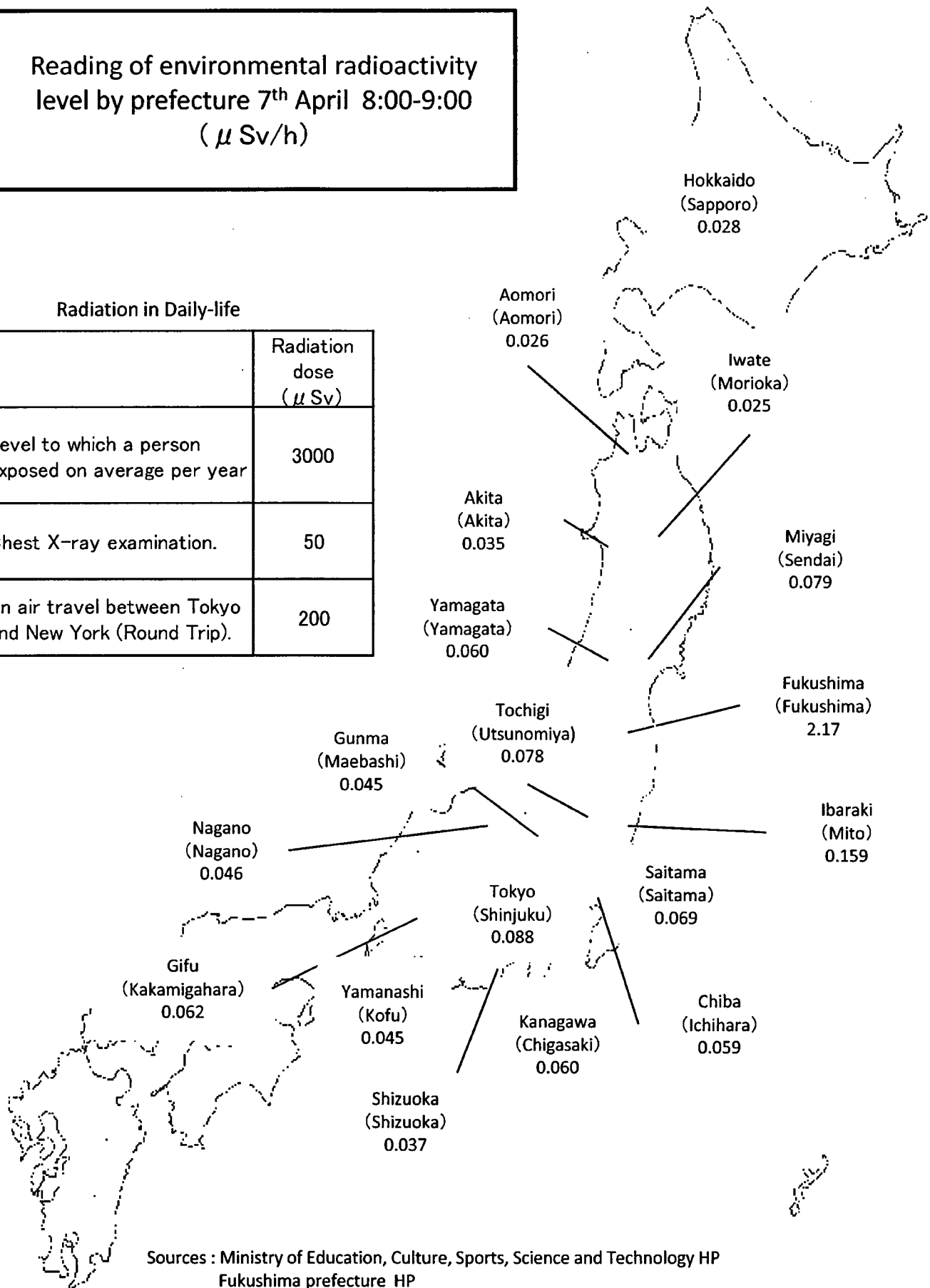
=====
International Public Relations Team
Ministry of Economy, Trade and Industry (METI)
1-3-1 Kasumigaseki, Chiyoda-ku, Tokyo 100-8901, Japan E-mail : meti-info@meti.go.jp
=====

(See attached file: [METI] Apr 5 0800_Tohoku-Pacific Ocean Earthquake and the Seismic Damages to the NPSs.pdf) (See attached file: Apr_7_Radioactivity Level Map [Chart].pdf)

Reading of environmental radioactivity
level by prefecture 7th April 8:00-9:00
(μ Sv/h)

Radiation in Daily-life

	Radiation dose (μ Sv)
Level to which a person exposed on average per year	3000
Chest X-ray examination.	50
An air travel between Tokyo and New York (Round Trip).	200



Sources : Ministry of Education, Culture, Sports, Science and Technology HP
Fukushima prefecture HP

Tohoku Pacific Earthquake and the seismic damage to the NPSs

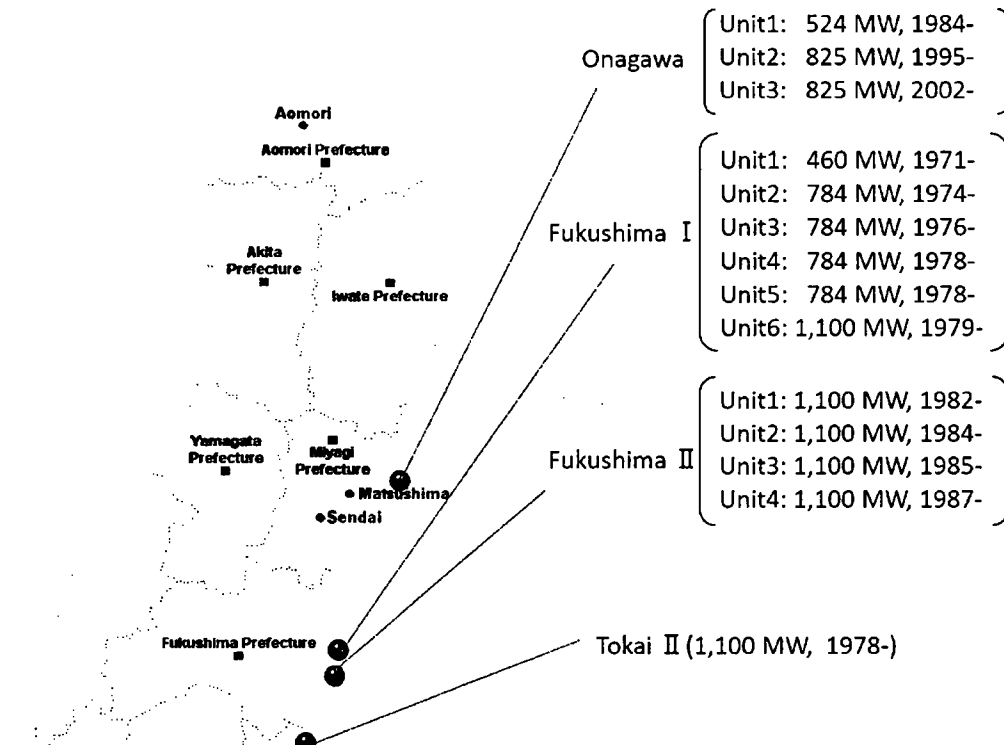
As of 8:00am April 5th, 2011 (JST)
Ministry of Economy, Trade and industry

Earthquake and automatic shut-down of nuclear reactors

The Tohoku Pacific Earthquake of historic magnitude 9.0 struck the northeastern part of Japan at 14:46 on March 11th, 2011.

At the time of the earthquake occurrence, 3 reactors (Units 4, 5 and 6 at Fukushima Dai-ichi (I) Nuclear Power Station (NPS) of Tokyo Electric Power Co. Inc.(TEPCO)) were under periodic inspection outage, and 11 reactors (Units 1, 2 and 3 at Onagawa NPS of Tohoku Electric Power Co. Ltd.; Units 1, 2 and 3 at Fukushima I NPS of TEPCO; Units 1, 2, 3 and 4 of Fukushima Dai-ni (II) NPS of TEPCO; and an unit of Tokai Dai-ni (II) NPS of Japan Atomic Power Co. Ltd.) were automatically shut-down.

After the automatic shut-down, Units 1, 2 and 3 at Onagawa, Unit 3 at Fukushima II, and the Unit at Tokai II have been cold shut down safely. As for the Units 1, 2 and 4 at Fukushima II, TEPCO operator of the station reported the nuclear emergency situation to Nuclear and Industrial Safety Agency (NISA), but afterward the three units have been cold shut down.



Tsunami damaged the cooling systems at the Fukushima Dai-ichi (I)

Since the external power supply was cut off upon the earthquake occurrence at 14:46 on March 11th, the emergency diesel power generators at Fukushima I automatically started generating electricity and the cooling systems began their operation. Then, the massive earthquake triggered the devastating Tsunami wiping away houses, buildings, cars along the widespread areas of the northeast coast.

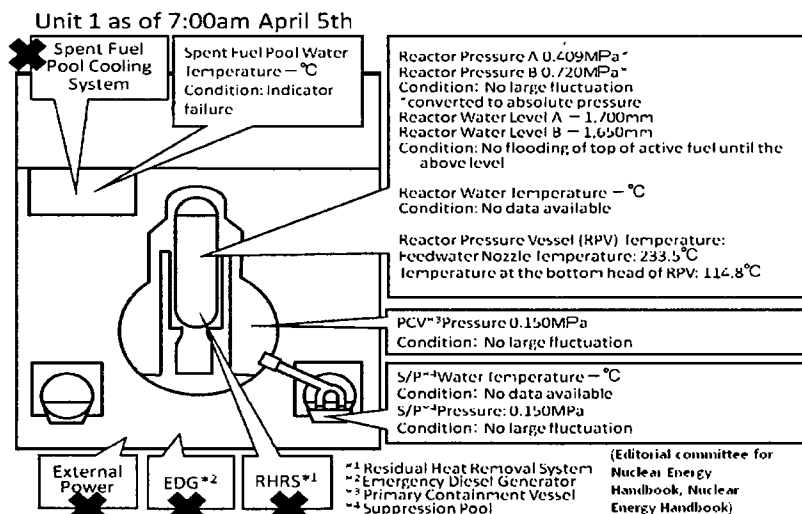
The emergency diesel power generators and the pumps supplying seawater to the cooling system were halted at 15:41 on March 11th due to the Tsunami estimated more than 10 meters high from the seawater level. Fukushima I lost the AC power sources for Unit 1, 2, 3 and 4 and lost function necessary for cooling down the reactor cores (Unit 1, 2 and 3) and spent fuel kept in the pools (Unit 1, 2, 3 and 4) inside reactor buildings. Consequently, the pressure and temperature of reactor cores and the water temperature of spent fuel pools went up.

For counter measures, water is being injected into the reactor pressure vessels of Units 1, 2 and 3. At the same time, police, fire brigade and the Self Defense Forces are attempting to pour water into the spent fuel pool of Units 3 and 4 by spraying seawater from helicopters, water cannon trucks and fire engine. Further, TEPCO engineers are working to restore external power supply to Units 1, 2, 3 and 4 (power supply to Units 5 and 6 was completed) by installing the electricity cable connecting to the transmission line of Tohoku Electric Power Co. Ltd. and other transmission route.

Report concerning incidents at the Fukushima Dai-ichi (I)

Unit 1 Fresh water is being injected to the spent fuel pool and the reactor pressure vessel.

- After the reactor was automatically shut-down and the Tsunami disabled the equipments, the temperature of the reactor core went up and the water level inside the pressure vessel dropped and the reaction of cladding metal of fuel and water generated hydrogen. Vent of the primary containment vessel was operated at 10:17am on March 12th. The hydrogen leaked outside of the containment vessel and caused the explosion at the upper-part of a concrete building housing at 15:36 on March 12th.
- Seawater was being injected into the reactor pressure vessel; thereafter, fresh water is being injected as of 8:00am April 5th, instead of seawater. At 8:32am on March 29th, the pump for the fresh water injection was switched from the fire pump truck to the temporary motor-driven pump.
- From 13:03 till 16:04 March 31st, spray of fresh water over the spent fuel pool of Unit 1 using the concrete pump truck was carried out. From 17:16 till 17:19 April 2nd, a test water spray over the spent fuel pool was carried out in order to confirm the appropriate position for water spray.
- Lighting in the main control room was recovered at 11:30am on March 24th. On April 2nd, lighting in the turbine building was partially turned on. And the power supply for the fresh water injection to the reactor pressure vessel was switched to the external power supply at 12:02 on April 3rd.
- White smoke was confirmed to generate continuously as of 6:30am April 5th.
- As the result of concentration measurement in the stagnant water on the basement floor of the turbine building, $2.1 \times 10^3 \text{ Bq/cm}^3$ of ^{131}I (Iodine) and $1.8 \times 10^6 \text{ Bq/cm}^3$ of ^{137}Cs (Caesium) were detected as major radioactive nuclides. Since around 17:00 March 24th, the stagnant water has been transferred to the condenser. As the condenser was confirmed to be almost filled with water, pumping out the water to the condenser was stopped at 7:30am on March 29th.
- In order to prepare to transfer the stagnant water on the basement floor of the turbine building to the condenser, the water in the condensate storage tank was transferred to the surge tank of suppression pool water (A) (12:00 March 31th). After switching the place where the water was to be transferred to the surge tank of suppression pool water (B) (15:25 March 31th), the transfer was restarted and finished. (15:26 April 2nd) Thereafter, the water in the condenser was transferred to the condensate storage tank at 13:55 on April 3rd.



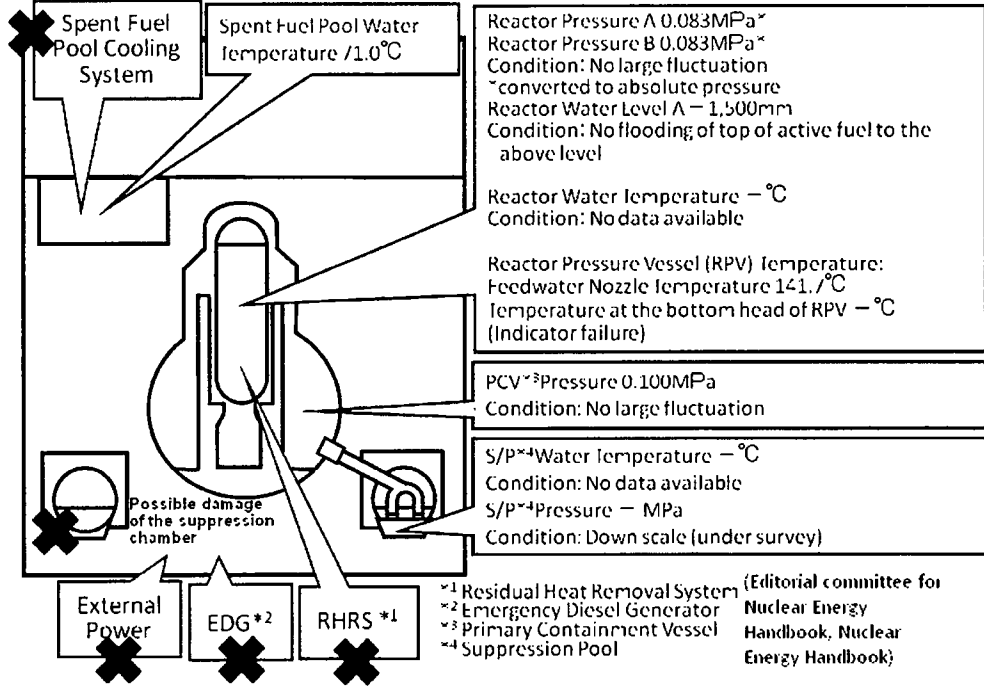
Unit 2 Fresh water is being injected to the spent fuel pool and the reactor pressure vessel.

- After the automatic shut-down of the reactor, the water injection function was sustained, but the reactor water level tended to decrease. And vent of the primary containment vessel was operated at 11:00am on March 13th and at 0:02am on March 15th.
- At 6:10am on March 15th, TEPCO reported that there was an explosion sound at Unit 2. Given the fact that the pressure in the suppression chamber decreased, it is presumed that there is possibility of certain damage on the suppression chamber.
- Seawater was being injected into the reactor pressure vessel; thereafter, fresh water is being injected as of 8:00am April 5th, instead of seawater. At 18:31 on March 27th, the pump for the fresh water injection was switched from the fire pump truck to the temporary motor-driven pump.
- The seawater injection to the spent fuel pool of Unit 2 using the fire pump truck was switched to the fresh water injection using the temporary motor-driven pump (From 16:30 till 18:25 March 29th). From 19:05 till 23:50 March 30th and from 11:05am till 13:37 April 4th, the injection of fresh water was resumed. From 14:56 till 17:05 April 1st, fresh water injection to the spent fuel pool via the spent fuel cooling line using the temporary pump was carried out. At 6:00am on April 5th, the temperature in the spent fuel pool was 71.0 degree centigrade.
- The power center of Unit 2 received electricity at 15:46 on March 20th. At 16:46 on March 26th, lighting of the main control room was recovered. On April 2nd, lighting in the turbine building was partially turned on. And the power supply for the fresh water injection to the reactor pressure vessel was switched to the external power supply at 12:12 on April 3rd.
- White smoke was confirmed to generate continuously as of 06:30 April 5th.
- In order to prepare for transferring the stagnant water on the basement floor of turbine building to the condenser, the water in the condensate storage tank was transferred to the surge tank of suppression pool water from 16:45 March 29th till 11:50am April 1st. Thereafter, the water in the condenser was transferred to the condensate storage tank at 17:10 on April 2nd, and 13:55 on April 3rd.
- The water, of which the dose rate was at the level of more than 1,000 mSv/h, was confirmed to be collected in the pit (a vertical portion of an underground structure) for laying electric cables, located near the intake channel of Unit 2. In addition, the outflow from the crack with a length of around 20 cm in the concrete portion of the lateral surface of the pit into the sea was confirmed. (as of around 9:30 April 2nd) In order to stop the outflow, concrete was started to be poured into the pit. (16:25 and 19:02 April 2nd)
- As the measure to prevent the outflow of the water accumulated in the pits for conduit in the area around the inlet bar screen of Unit 2, the upper part of the power cable trench for power source at the intake channel was crushed and sawdust, high polymer absorbent and cutting-processed newspaper were put inside. (From 13:47 till 14:30 April 3rd)
- Approximately 13kg of tracer (milk white bath agent) was put in from the pit for the duct for seawater pipe. (From 07:08 till 07:11 April 4th)

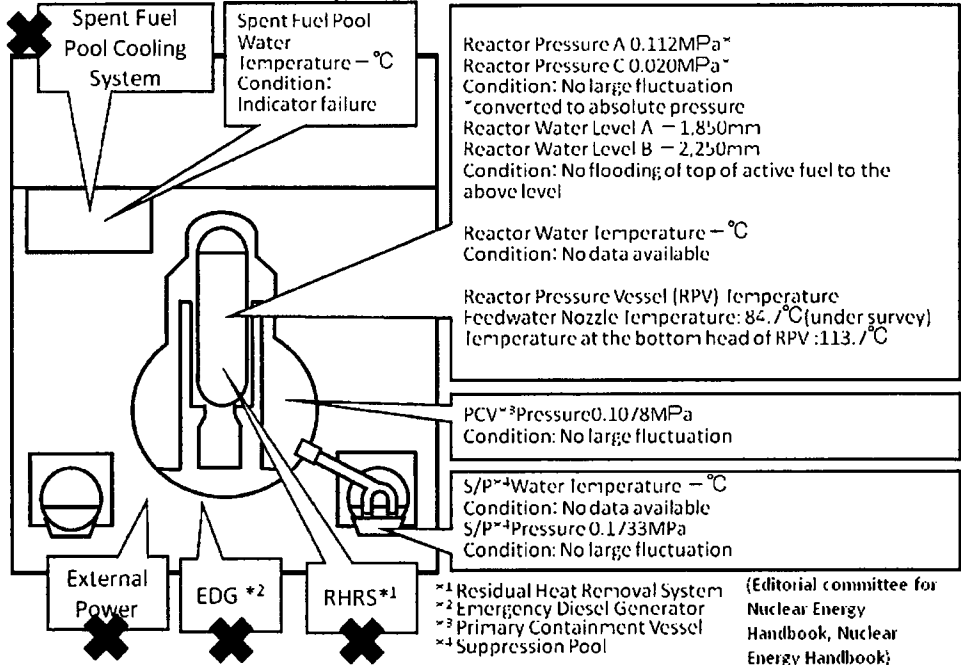
Unit 3 Fresh water is being injected to the spent fuel pool and the reactor pressure vessel.

- After the automatic shut-down of the reactor, fresh water and subsequently seawater were injected into the reactor pressure vessel through the fire extinguishing system line. And vent of the primary containment vessel was operated at 20:41 on March 12th, at 8:41am on March 13th and at 5:20am on March 14th. However, the pressure in the primary containment vessel rose up unusually and the explosion took place around the reactor building at 11:01am on March 14th.
- On March 16th, 21st and 23rd, the smoke (sometimes whitish, grayish or slightly blackish one) was generated from Unit 3 and died down. As of 6:30am April 5th, white smoke was confirmed to generate continuously.
- For counter measures, seawater was being injected into the reactor pressure vessel, thereafter; fresh water is being injected as of 8:00am April 5th, instead of seawater. At the same time, to pour water into the spent fuel pool, helicopters, water cannon trucks, fire engines and concrete pump trucks discharged water to Unit 3 from sky and ground. From 14:17 till 18:18 March 29th, the water spray (fresh water) using the concrete pump truck was carried out.
- Injection of seawater to the spent fuel pool via the cooling and purification line was carried out from 11:03am till 13:20 March 23rd and from around 5:35am till around 16:05 March 24th. At 20:30 on March 28th, the pump for the fresh water injection was switched from the fire pump truck to the temporary motor-driven pump. From March 31st till April 4th, fresh water spray over the spent fuel pool using the concrete pump truck had been carried out three times.
- The pressure in the primary containment vessel of Unit 3 rose. (320 kPa as of 11:00 March 20th) Judging from the situation, immediate pressure relief was not required, and monitoring of the pressure continues. (107.8 kPa as of 5:40am April 5th)
- Works for the recovery of external power supply is being carried out. At 22:43 on March 22nd, lighting in the main control room was recovered. On April 2nd, lighting in the turbine building was partially turned on. And the power supply for the fresh water injection to the reactor pressure vessel was switched to the external power supply at 12:18 on April 3rd.
- In order to prepare for transferring the stagnant water on the basement floor of turbine building to the condenser, the water in the condensate storage tank is being transferred to the surge tank of suppression pool water from 17:40 March 28th till around 8:40am March 31st.

Unit 2 as of 7:00am April 5th

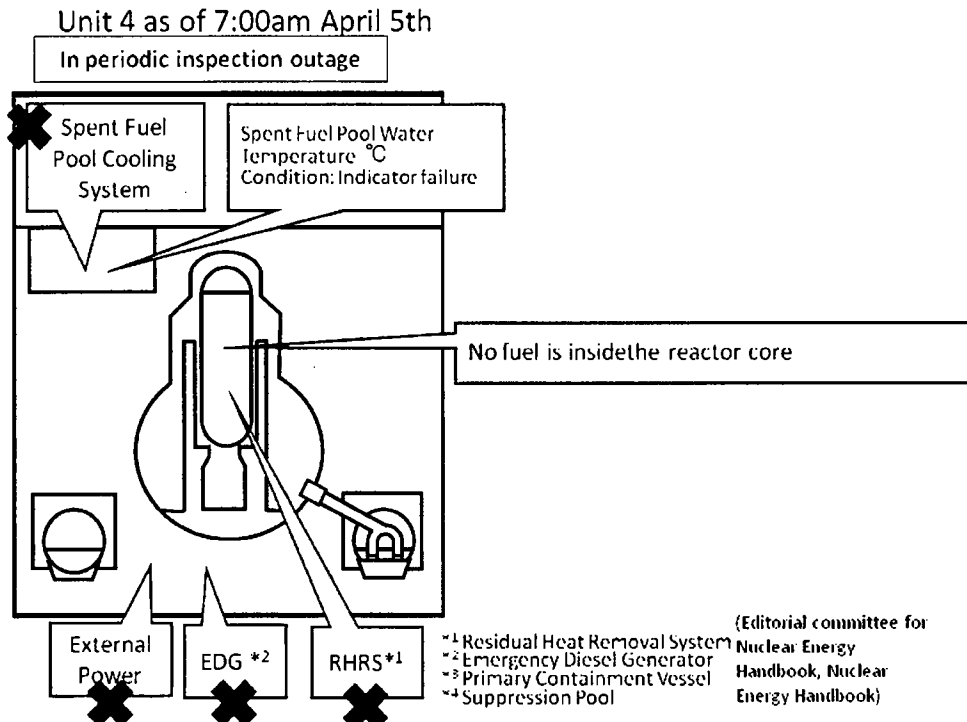


Unit 3 as of 7:00am April 5th



Unit 4 No fuel is in the reactor pressure vessel. Fresh water is being injected to the spent fuel pool.

- There is no fuel in the reactor pressure vessel due to replacement work of the shroud.
- The temperature of water in the spent fuel pool went up. At 4:08am on March 14th, the temperature in the spent fuel pool of Unit 4 was 84 degree centigrade.
- It was confirmed that a part of wall of the operation floor of the reactor building of Unit 4 was damaged at 6:14am on March 15th. A fire took place at Unit 4 at 9:38am, but the fire was extinguished spontaneously as of 11:00am. And at 5:45am on March 16th, it was reported that a fire occurred at Unit 4; however, no fire was confirmed by TEPCO staff on the ground at 6:15am.
- White smoke was confirmed to generate continuously as of 6:30am April 5th.
- Water spray over the spent fuel pool of Unit 4 by Self-Defense Force was carried out three times from March 20th till March 21st. And water spray using a concrete pump truck had been carried out eight times from March 22nd till April 3rd. Injection of seawater to the spent fuel pool via the fuel pool cooling line was carried out on March 25th.
- The power center received electricity as of 10:35am March 22nd. At 11:50 on March 29th, lighting in the main control room was recovered. On April 2nd, lighting in the turbine building was partially turned on.
- From April 2nd, the stagnant water in the main building of radioactive waste treatment facilities was being transferred to the turbine building of Unit 4. As the water level in the vertical portion of the trench for Unit 3 rose from 3 April, by way of precaution, the transfer was suspended notwithstanding that the path of the water was not clear.(09:22 April 4th)



Unit 5&6 Unit 5 & 6 is under cold shut down.

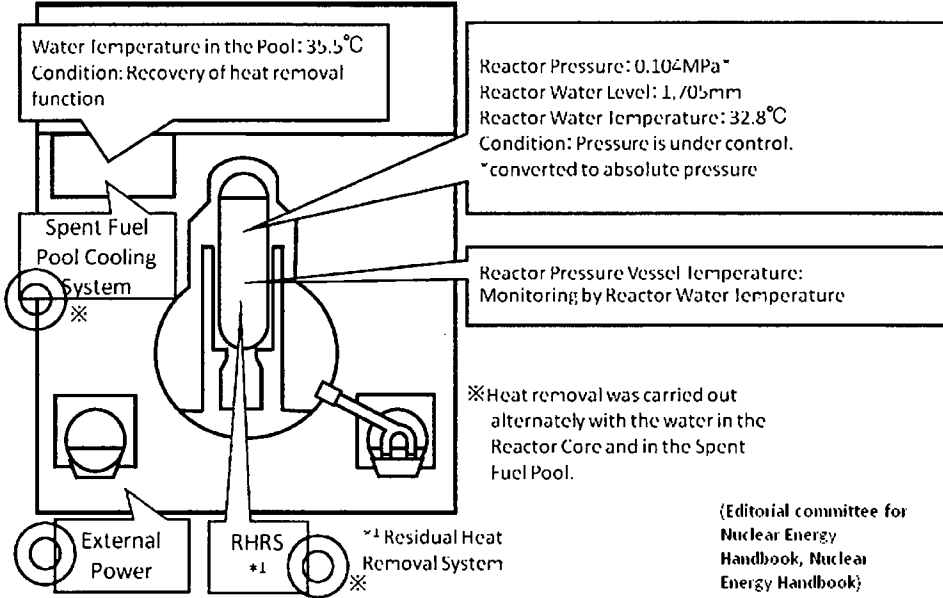
- The emergency generator (B) for Unit 6 was operating and supplying electricity to Unit 5 and Unit 6. Fresh water was being injected into the reactor pressure vessels and the spent fuel pools by make-up water condensate system.
- The pump for residual heat removal system (RHR) (C) for Unit 5 and RHR (B) for Unit 6 started up at 5:00am and 22:14 March 19th and recovered heat removal function. (power supply: emergency diesel generators for Unit 6)
- Unit 5 was under cold shut down at 14:30 and Unit 6 was under cold shut down at 19:27 on March 20th.
- Unit 5 and Unit 6 received electricity reached to the starting transformer at 19:52 March 20th. The power supply of Unit 5 and Unit 6 was switched from the emergency diesel generator to the external power supply at 11:36am on March 21st and 19:17 on March 22nd.
- The temporary pump of RHR seawater system (RHRS) for Unit 5 was automatically stopped at 17:24 on March 23rd when the power supply was switched from the temporary to the permanent. Thereafter, repair of the temporary pump of RHRS was completed at 16:14 and cooling was started again at 16:35 on March 24th.
- Power supply for the temporary pumps for RHRS of Unit 6 was switched from the temporary to the permanent at 15:38 and 15:42 on March 25th.
- The temperature of water in the spent fuel pool of Unit 5 and Unit 6 were 35.5 degree centigrade and 28.5 degree centigrade, respectively as of 7:00am April 5th.
- The groundwater with low-level radioactivity in the sub drain pits of Units 5 and 6 (around 1,500t) was started to be discharged through the water discharge canal to the sea at 21:00 April 4th.

Common Spent Fuel Pool

- The power supply was started at 15:37 and cooling was also started at 18:05 on March 24th. As of 8:10am April 4th, the water temperature of the pool was around 28 degree centigrade.

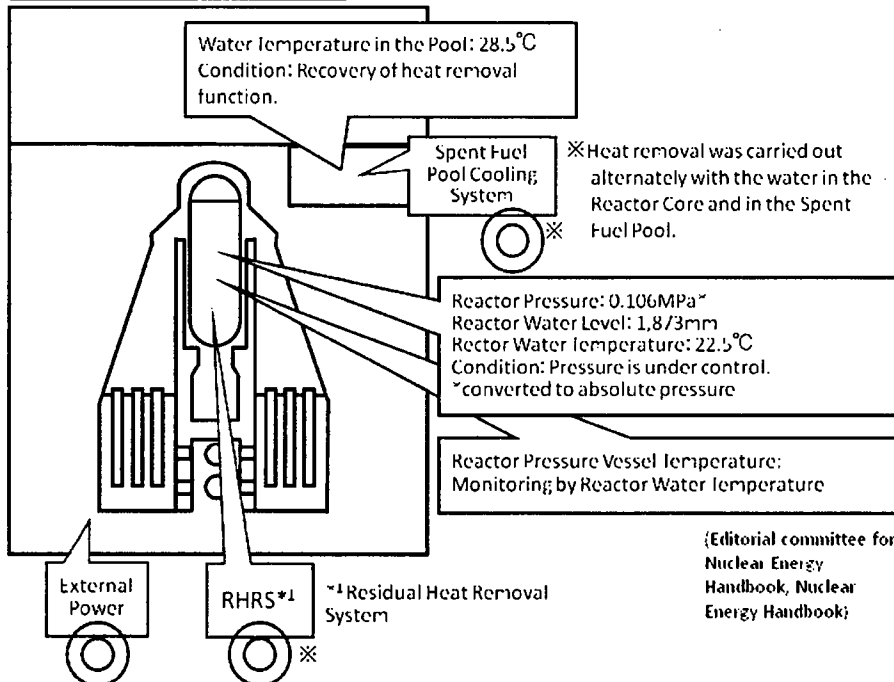
Unit 5 as of 7:00am April 5th

In periodic inspection outage



Unit 6 as of 7:00am April 5th

In periodic inspection outage



Other

- As the result of nuclide analysis at around the southern water discharge canal, $7.4 \times 10^1 \text{ Bq/cm}^3$ of ^{131}I (1850.5 times higher than the limit of concentration of water outside the Environmental Monitoring Area) was detected as of 14:30 March 26th. (As the result of measurement on March 29th, it was detected as 3355.0 times higher than the limit in water.)
- As the result of the analysis at the northern water discharge canal, $4.6 \times 10^1 \text{ Bq/cm}^3$ of ^{131}I (1262.5 times higher than the limit) was detected as of 14:10 March 29th.
- The water was confirmed to be collected in the vertical parts of the trenches (an underground structure for laying pipes, shaped like a tunnel) outside of the turbine building of Units 1 to 3. The dose rates on the water surface were 0.4 mSv/h of the Unit 1's trench and 1,000 mSv/h of the Unit 2's trench. The rate of the Unit 3's trench could not measure because of the rubble. (Around 15:30 March 27th) The water of the Unit 1's was transferred to the storage tank in the main building of radioactive waste treatment facilities by the temporary pump. Thereafter the water level from the top of the vertical part went down from approximately -0.14m to approximately -1.14m. (From 9:20am till 11:25 March 31st)
- In the samples of soil collected on March 21st and 22nd on the site (at 5 points) of Fukushima I, plutonium 238, 239 and 240 were detected (23:45 March 28th announced by TEPCO). The concentration of the detected plutonium was at the equivalent level of the fallout (radioactive fallout) that was observed in Japan concerning the past atmospheric nuclear testing, i.e. at the equivalent level of the normal condition of environment, and was not at the level of having harmful influence on human body.
- On March 28th, the stagnant water was confirmed in the main building of radioactive waste treatment facilities. As the result of analysis of radioactivity, the total amount of the radioactivity $1.2 \times 10^1 \text{ Bq/cm}^3$ in the controlled area and that of $2.2 \times 10^1 \text{ Bq/cm}^3$ in the non-controlled area were detected in March 29th.
- The barge (the first ship) of the US armed forces carrying fresh water for cooling reactors, etc. landed in the exclusive port of the power station, being towed by the ships of Japan Maritime Self-Defense Force. (15:42 March 31st) The transfer of fresh water from the barge to the filtrate tank was started. (15:58 April 1st) Thereafter it was suspended due to the malfunction of the hose (16:25 April 1st), but was carried out from 10:20am till 16:40 April 2nd.
- The barge (the second ship) of the US armed forces carrying fresh water for cooling reactors, etc. landed in the exclusive port of the power station, being towed by the ships of Japan Maritime Self-Defense Force. (9:10am April 2nd)
- The spraying for test scattering of anti-scattering agent was carried out in the area of about 500 m² on the mountain-side of the Common Pool. (From 15:00 till 16:05 April 1st)
- The freshwater was transferred from the barge (the second ship) of the US armed force to the other barge (the first ship). (From 09:52 till 11:15 April 3rd)
- The stagnant water with low-level radioactivity in the main building of radioactive waste treatment facilities (Around 10,000t) was started to be discharged from the southern side of the water discharge canal to the sea, using the first pump at 19:03 April 4th. Further, at 19:07 on the same day, the discharge using 10 pumps in total was carried out.

Current Situation

- Evacuation as far as 20 kilometers from Fukushima I NPS and 10 kilometers from Fukushima II NPS was almost completed (see the diagram “Fukushima prefecture”). The residents in the areas from 20 kilometers to 30 kilometers radius from Fukushima I NPS are directed to stay in-house.
- On March 16th, the Local Emergency Response Headquarter issued “the direction to administer the stable Iodine during evacuation from the evacuation area (20 km radius)” to the Prefecture Governors and the heads of cities, towns and villages.

Monitoring Data

1) The data of Monitoring Post out of 20 kilometers zone of Fukushima I NPS is available on the following website:

http://www.mext.go.jp/a_menu/saigaijohou/syousai/1303726.htm

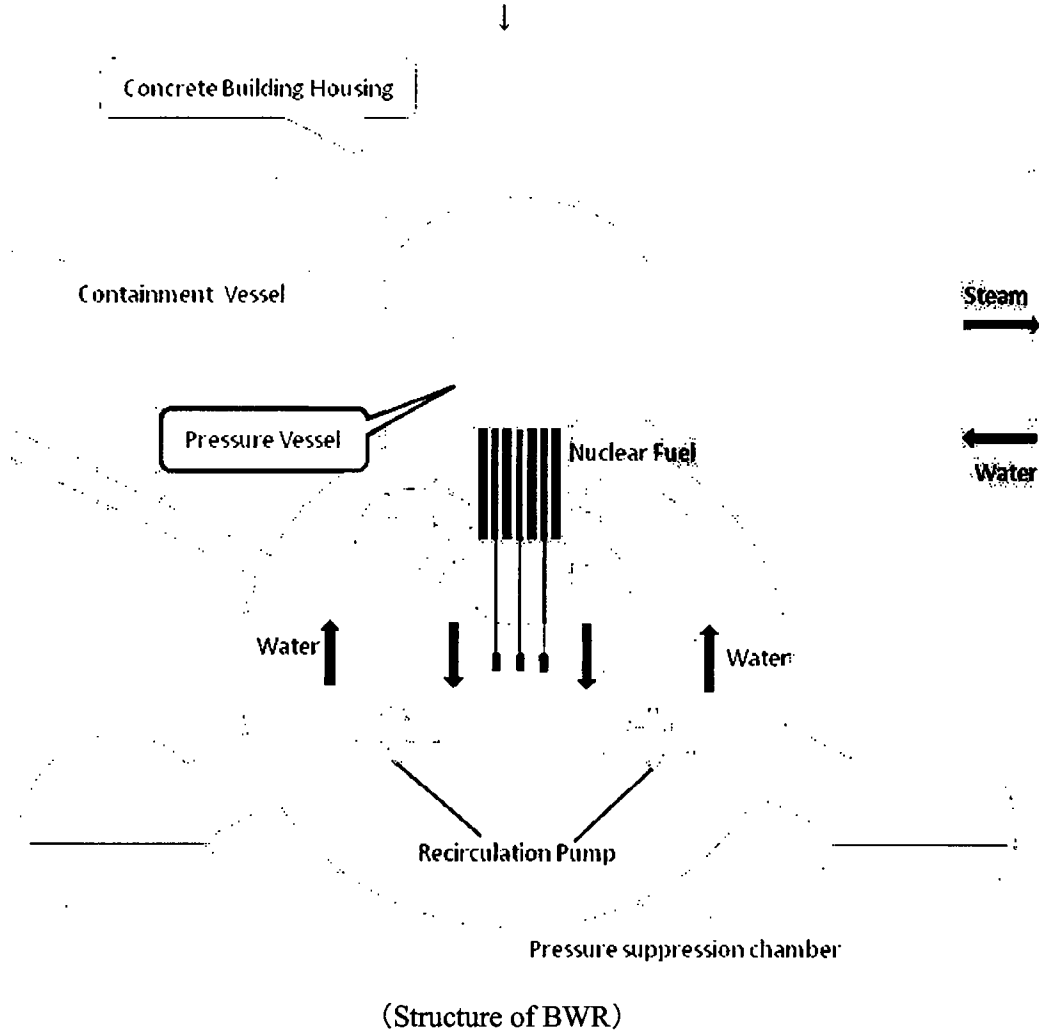
2) The real-time radiation data collected via the System for Prediction of Environment Emergency Dose Information (SPEEDI) is available on the following website:

<http://www.bousai.ne.jp/eng/>

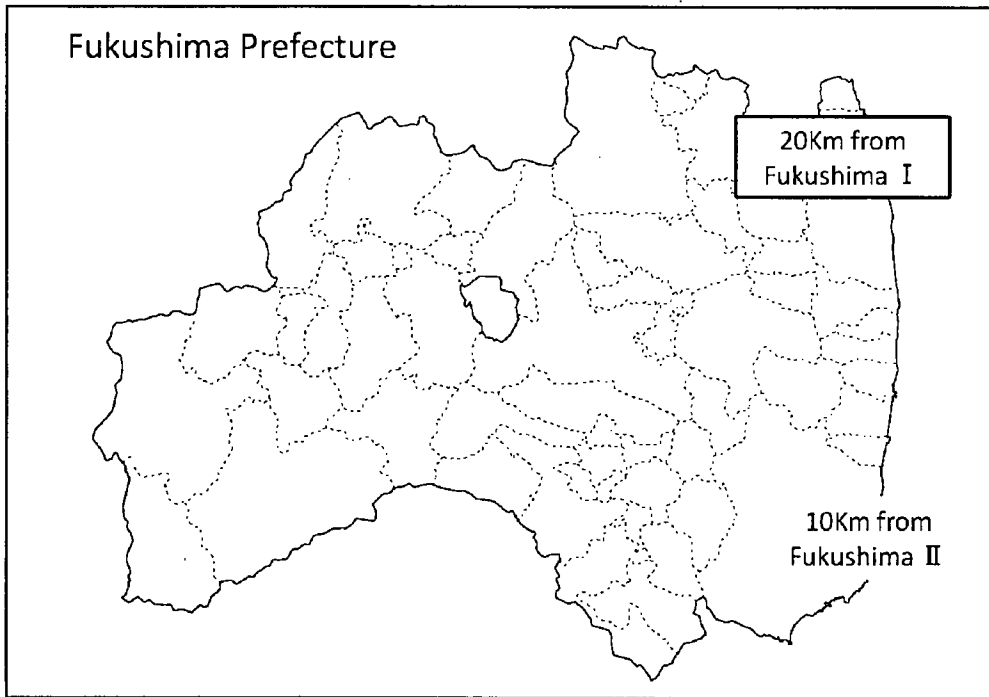
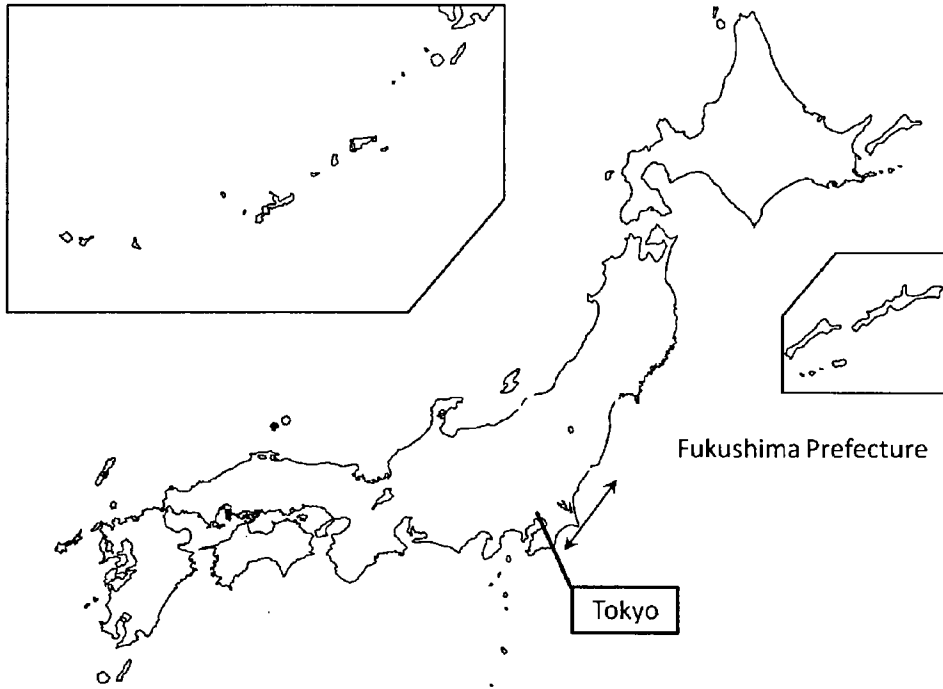
Outline of the Fukushima I Nuclear Power Station



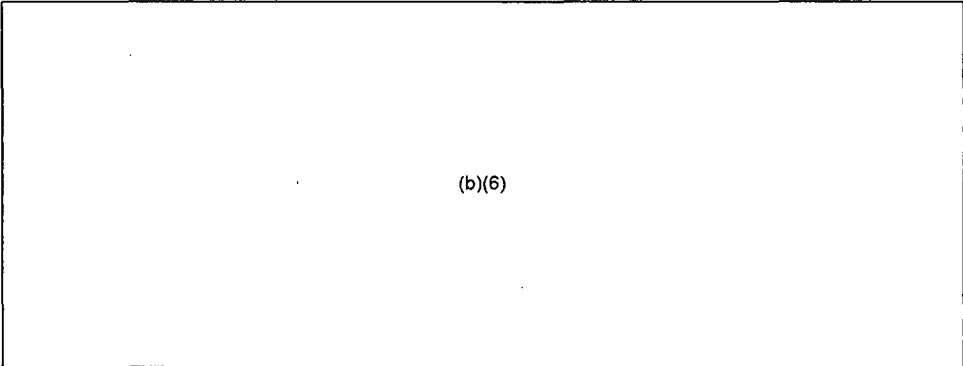
(Fukushima Dai-ichi nuclear power station)



Location of Fukushima I and II in Japan



From: RST01 Hoc
Sent: Wednesday, April 06, 2011 9:00 PM
To: INPOERCTech
Cc:



Subject: FW: 04-06 2000 final One Pagers RPV Injection Cntmt Fill.docx
Attachments: 04-06 2000 final One Pagers RPV Injection Cntmt Fill.docx
Importance: High

FYI.

Thanks,

Greg
RST Coordinator

From: RST07 Hoc
Sent: Wednesday, April 06, 2011 8:56 PM
To: RST01 Hoc
Subject: 04-06 2000 final One Pagers RPV Injection Cntmt Fill.docx

All,

The final comments have been incorporated into these one page documents.

This document is released to INPO for distribution to the TEPCO embedded INPO representative.

Chuck Norton
RST BWR Analyst

Considerations on Reactor Pressure Vessel (RPV) Injection Rate

Known Information (NISA press release 0700 4/5)

Unit 1 - Freshwater injection through Feedwater system	Rate 6m ³ /hr (26.4 gpm)
Unit 2 - Freshwater injection through Fire Water and LPCI	Rate 8m ³ /hr (35.2 gpm)
Unit 3 - Freshwater injection through Fire Water and LPCI	Rate 7m ³ /hr (30.8 gpm)

Assumptions

We believe Japan is lowering RPV injection to minimize steam condensation, and to minimize eventual leakage into the environment. Is this assumption correct?

Considerations

Minimum Debris Retention Injection Rate (MDRIR) is the lowest RPV injection rate at which it is expected that core debris will be retained in the RPV when RPV water level cannot be determined to be above the bottom of active fuel. It is utilized to ensure that injection into the RPV is sufficient to remove decay heat from core debris.

1. US industry considers that maximizing injection flow would enhance steam inerting by increasing the steam generation rate, and that the increase steam generation rate would create more steam than is condensed by the increased flow. Have you considered increasing RPV injection rate and trending available parameters to ensure that sufficient steam is generated to maintain a steam blanketed atmosphere in the drywell?
2. It is difficult to determine when core cooling is adequate considering core configuration, salt buildup issues, indirect instrumentation and instrumentation time lag. What criteria are you using to determine adequacy of core cooling ?
3. The addition of nitrogen purge allows RPV injection flow to be maximized without concern of hydrogen combustion. Is it your plan to increase RPV injection at that time?
4. Use of core spray would enhance decay heat removal:
 - a. Have you considered re-starting injecting via Core Spray on Unit 1 to cool the core inside shroud? (Any Freshwater flow may also dissolve the salt clogging.)
 - b. Have you considered injecting via Core Spray on Unit 2 & 3 to cool Core inside shroud?
5. Core geometry changes may lead to localized criticalities, which could result in uncontrolled temperature and radiation Levels. Have you considered maintaining boron injection capability to preclude criticality?
6. What assistance would be helpful to develop a long-term cooling system for the RPV and core (e.g. an external pump and heat exchanger setup)?

Considerations on Primary Containment Fill Possibilities

Known Information

Unit 1 Possibly Damaged (holding some pressure)	0.150 MPa (7.0 psig) D/W 0.150 MPa (7.0 psig) Torus
Unit 2 Assumed Damaged (at Atmospheric Pressure)	0.100 MPa (0.2 psig) D/W Unknown Torus
Unit 3 Assumed Damaged (at Atmospheric Pressure)	0.108 MPa (0.9 psig) D/W 0.173 MPa (10.4 psig) Torus

Assumptions

TEPCO prefers to not fill containments. Is it because containments may be damaged and not able to hold water? OR Are there other reasons?

Considerations

The generic boiling water reactor (BWR) severe accident management guidelines (SAMGs) provide definitions related to the removal of decay heat from the core and core debris.

Minimum Debris Submergence Level (MDSL) is the lowest primary containment water level at which it is expected that ex-vessel core debris on the drywell floor will be adequately submerged. It is utilized to preserve primary containment integrity following RPV breach by core debris.

1. The severe accident management guides (SAMGs) state:
 - a. It is important to ensure that a minimum of 4 feet of water on the drywell floor is provided such that any ex-vessel core material will adequately quench.
 - b. It is important to flood Primary Containment up to bottom of the RPV lower head to cool the RPV bottom head and reduce the chance of core debris breaching the Bottom of the RPV. This is important if all of the cores remain within the vessel. This may also be important if there is increased corrosion from the previous saltwater injection on RPV lower head welds and penetrations.
 - c. It is important to eventually raise Primary Containment water level to the Top of Active Fuel region to provide direct vessel cooling up to that level.

How is vessel cooling accomplished to keep the fuel from going ex-vessel?

If fuel penetrates the reactor vessel, how will the material be adequately quenched and submerged to protect the containment?

2. What assistance would be helpful to develop a long-term cooling system for the Primary Containment flooded volume (e.g. an external pump and heat exchanger setup)?
3. Could corrosion degrade the RPV and/or the containment pressure retention capacity? If so to what extent.
4. Could releases to the turbine building come from leakage pathways originating in the containment? If so from where?

From: RST01 Hoc
Sent: Tuesday, April 05, 2011 5:20 PM
To:

(b)(6)

Cc: Ali, Syed; Blamey, Alan; Casto, Chuck; Collins, Elmo; Emche, Danielle; Giessner, John; Jackson, Todd; Miller, Marie; Monninger, John; NRC Team at USAID; Scott, Michael; Sheikh, Abdul; Stahl, Eric; Taylor, Robert; Way, Ralph
Subject: FW: 04-05 1700 One Pagers RPV Injection & Cntmt Fill.docx
Attachments: 04-05 1700 One Pagers RPV Injection & Cntmt Fill.docx

The attached file are both one pagers for comment. Comments are requested to the RST by 0400 April 6, 2011.

From: RST07 Hoc
Sent: Tuesday, April 05, 2011 5:11 PM
To: RST01 Hoc
Subject: 04-05 1700 One Pagers RPV Injection & Cntmt Fill.docx

Please distribute the attached document to the consortium for comment.

Comments need to be back to the RST by 0400 April 6, 2011.

Chuck Norton
RST BWR Analyst

Consortium Please Review
One Page Question Documents for Site Team
Please return comments to RST By 0400 April 6

Considerations on Reactor Pressure Vessel (RPV) Injection Rate

Known Information (NISA press release 0700 4/5)

Unit 1 - Freshwater injection through Feedwater system	Rate 6m ³ /hr (26.4 gpm)
Unit 2 - Freshwater injection through Fire Water and LPCI	Rate 8m ³ /hr (35.2 gpm)
Unit 3 - Freshwater injection through Fire Water and LPCI	Rate 7m ³ /hr (30.8 gpm)

Assumptions

We believe Japan is lowering RPV injection to minimize steam generation, and minimize eventual leakage into the environment. Is this assumption correct?

Considerations

1. Have you considered increasing RPV injection flow and trending available parameters?
2. Does current RPV injection effectively cool the cores considering core configuration, salt buildup issues, indirect instrumentation and instrumentation time lag?
3. Following the addition of nitrogen purge, is it your plan to increase RPV injection?
4. Have you considered re-starting injecting via Core Spray on Unit 1 to cool Core inside shroud? (Any Freshwater flow may also dissolve the salt clogging.)
5. Have you considered injecting via Core Spray on Unit 2 & 3 to cool Core inside shroud?
6. Are you able to resume Boron injection if unexplained Temperature and Radiation Levels are attributed to localized Criticalities due to Core geometry changes?
7. Are you limited by available freshwater flow through current pathway? If so, what is the limiting freshwater flowrate?
8. Are you working towards establishing a long-term cooling system for the RPV (e.g. an external pump and heat exchanger setup)?
9. Do you think that the risk of increased release to the environment from increased RPV flow outweighs the benefits of increasing flow? If so, why?

Considerations on Primary Containment Fill Possibilities

Known Information

Unit 1 Possibly Damaged (holding some pressure)	0.150 MPa (7.0 psig) D/W 0.150 MPa (7.0 psig) Torus
Unit 2 Assumed Damaged (at Atmospheric Pressure)	0.100 MPa (0.2 psig) D/W Unknown Torus
Unit 3 Assumed Damaged (at Atmospheric Pressure)	0.108 MPa (0.9 psig) D/W 0.173 MPa (10.4 psig) Torus

Assumptions

We believe Japan is reluctant to fill containments because they may be damaged and not able to hold water OR because of the increase seismic risk due to the added weight of water. Are these assumptions correct?

Considerations

1. If you believe that core debris has breached the bottom of the RPV, do you agree that it is important to ensure that a minimum of 4 feet of water on the drywell floor will adequately quench any exvessel material?
2. If you believe that all of the cores remain within the vessel, do you agree it is important to flood Primary Containment up to bottom of the RPV lower head to cool the RPV bottom head and reduce the chance of core debris breaching the Bottom of the RPV?
3. If you believe that there is increased corrosion from the previous saltwater injection on RPV lower head welds and penetrations, do you agree that raising Primary Containment water level to the bottom head should be started as soon as practical?
4. Do you agree with the importance of eventually raising Primary Containment water level to the Top of Active Fuel region to provide direct vessel cooling up to that level?
5. Are you working towards establishing a long-term cooling system for the Primary Containment flooded volume (e.g. an external pump and heat exchanger setup)?
6. Do you think that the containment pressure retention capacity may have been degraded either by corrosion or penetration failure?
7. Do you think that releases to the turbine building could come from leakage pathways from the containment?

From: RST01B Hoc
Sent: Tuesday, April 05, 2011 4:15 PM
To: Versluis, Rob
Subject: FW: ERC Daily Call Agenda.docx
Attachments: ERC Daily Call Agenda.docx

Rob Versluis, PhD, DOE NE-71, 301-903-1890 (o) (b)(6) (m)

From: RST01 Hoc
Sent: Tuesday, April 05, 2011 4:11 PM
To: RST07 Hoc; RST03 Hoc; RST01B Hoc
Subject: FW: ERC Daily Call Agenda.docx

FYI

From: Jaquin, Michael C. (INPO) [mailto:JaquinMC@inpo.org] **On Behalf Of** INPOERCTech
Sent: Tuesday, April 05, 2011 4:09 PM
To: RST01 Hoc
Subject: FW: ERC Daily Call Agenda.docx

Brian, I believe this is the action item list you referenced. Please let me know.
Mike Jaquin
INPO ERC Technical Lead

From: Reandeau, Michael A. (INPO)
Sent: Tuesday, April 05, 2011 12:40 PM
To: rst01.hoc@nrc.gov
Cc: INPOERCTech
Subject: ERC Daily Call Agenda.docx

Brian, the attached agenda from today's call has action items from the call ready for distribution to parties on the call.

Mike Reandeau
INPO ERC Technical Lead

4/5/2011

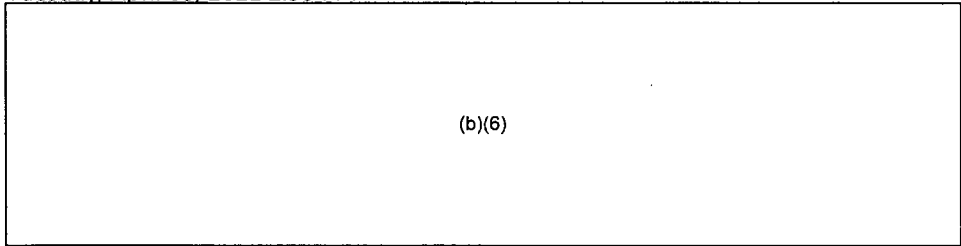
1100 – Technical Refocus Meeting – Led by INPO Tech Lead

1. Review agenda for the call:
2. Discuss the Status of Open Actions
 - a. Discussion of Stable Conditions Document (RST lead)
 - b. Update on alternate methods to inject N2 to containment (INPO lead)
 - c. SFP Strategy Document (NRC lead)
 - d. Hydrogen Assumptions (GEH lead)
 - e. Discussion on whether two new 1-page documents are needed: basis for increasing injection to Unit 1 RPV and basis for flooding containment (RST lead)
3. Deliver any responses for new actions that have been completed from the daily task alignment meeting
4. Adjourn

Action Items from 4/5/2011 1100 EST Conference Call:

1. NRC RST sent out the **Stable Plant Conditions** document on 4/5 at 1108 EST. Comments due back to the NRC RST by 4/5/2011 2000 EST.
2. NRC RST sent out the **General Discussion of the Desired End State of all Spent Fuel Pools** document on 4/5/2011 at 0950 EST.
 - Comments due to NRC RST by 4/5 at 2000 EST.
 - NRC RST incorporate comments and provide updated document to INPO ERC Technical to support 4/6/0500 EST call with TEPCO.
3. GEH to provide updated containment H2/O2 calculations to RST for inclusion in the **Additional Measures in Light of TEPCO Current Strategy** document by 4/5 2000 EST.
 - RST to distribute updated document by 0200 to INPO ERC Technical for potential discussion with TEPCO on 4/6 at 0500 EST.
 - All other comments due to NRC RST by 4/6 1000 EST to support 4/6 1100 Conference Call
4. NRC RST to provide to INPO ERC Technical strawman papers on: basis for MDRIR and MDSL by 4/5 1700 EDT to support 4/6 0500 EST call with TEPCO.

From: RST01 Hoc
Sent: Tuesday, April 05, 2011 2:38 PM
To:



Cc: FOIA Response.hoc Resource
Subject: FW: 04-05-11 0400 RST Assessment Spent Fuel Pool Markup Copy for 1100 (2).docx
Attachments: 04-05-11 0400 RST Assessment Spent Fuel Pool Markup Copy for 1100 (2).docx

From: Reandeau, Michael A. (INPO) [mailto:ReandeauMA@inpo.org]
Sent: Tuesday, April 05, 2011 2:33 PM
To: RST01 Hoc
Cc: INPOERCTech
Subject: FW: 04-05-11 0400 RST Assessment Spent Fuel Pool Markup Copy for 1100 (2).docx

Brian, attached are INPO ERC Technical comments on the General Discussion of Desired End State of all Spent Fuel Pools.

Mike Reandeau
INPO ERC Technical Lead

From: Hawn, Randall S. (INPO)
Sent: Tuesday, April 05, 2011 1:57 PM
To: Reandeau, Michael A. (INPO)
Subject: 04-05-11 0400 RST Assessment Spent Fuel Pool Markup Copy for 1100 (2).docx

See attached-

From: RST01 Hoc
Sent: Tuesday, April 05, 2011 2:37 PM
To:

(b)(6)

Cc: FOIA Response.hoc Resource
Subject: FW: Criterion to Establish Stable Conditions - 0115 04-05.docx
Attachments: Criterion to Establish Stable Conditions - 0115 04-05.docx

fyi

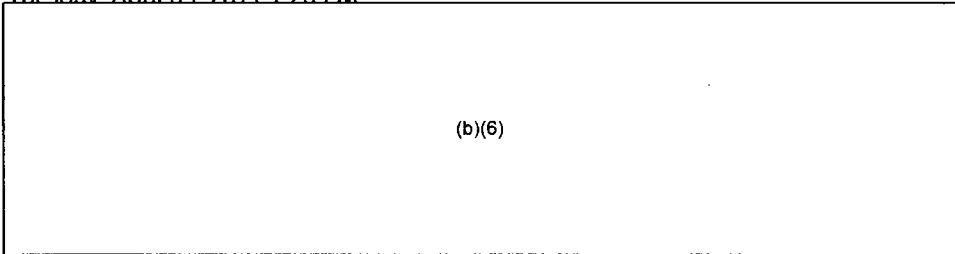
From: Reandeau, Michael A. (INPO) [mailto:ReandeauMA@inpo.org]
Sent: Tuesday, April 05, 2011 2:31 PM
To: RST01 Hoc
Cc: INPOERCTech
Subject: FW: Criterion to Establish Stable Conditions - 0115 04-05.docx

Brian, attached are INPO ERC Technical team comments on the Criterion to Establish Stable Plant Conditions.

From: Hawn, Randall S. (INPO)
Sent: Tuesday, April 05, 2011 2:22 PM
To: Reandeau, Michael A. (INPO)
Subject: Criterion to Establish Stable Conditions - 0115 04-05.docx

Comments....

From: RST01 Hoc
Sent: Tuesday, April 05, 2011 1:26 PM
To:



Cc: FOIA Response.hoc Resource
Subject: FW: Q408 1F1 Combustible Gas Calculations
Attachments: Q408 Combustible Gas Calculations for 1F1.pdf

From: GE Hitachi Nuclear Response Team (GE Power & Water) [mailto:GE.HitachiNuclearResponseTeam@ge.com]
Sent: Tuesday, April 05, 2011 1:09 PM
To: kenichi.sato.sz@hitachi.com
Cc: RST01 Hoc; naoki.akane.jj@hitachi.com
Subject: Q408 1F1 Combustible Gas Calculations

<<Q408 Combustible Gas Calculations for 1F1.pdf>>

Kenichi-san

Good Morning

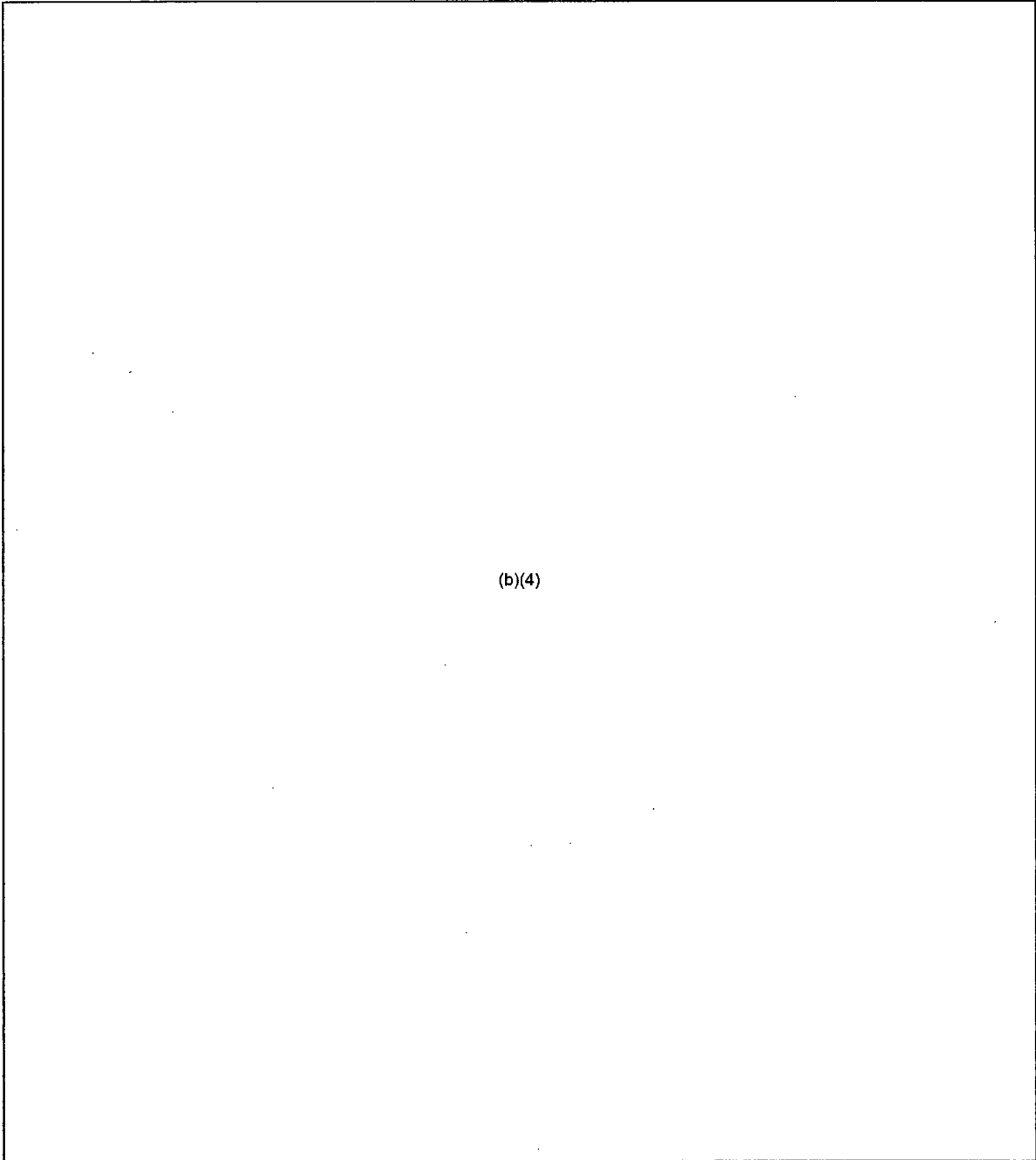
Attached is the write-up from GEH engineering regarding the phone call that was held with HGNE, GEH, INPO, and TEPCO. Please confirm that these thoughts are accurate.

Thanks,

Larry Beese

GEH Incident Command Center (ICC)

Q408 Combustible Gas Calculations for 1F1



(b)(4)

(b)(4)

From: RST01B Hoc
Sent: Tuesday, April 05, 2011 12:18 PM
To: RST01 Hoc
Cc: RST01B Hoc
Subject: Read-out of INPO meeting w TEPCO on SFPs at 4/6/11 0500

DOE would be interested in a read-out of subject meeting on SPFs, as Im sure RST is.

Rob Versluis, PhD, DOE NE-71, 301-903-1890 (o) (b)(6) (m)

From: RST01 Hoc
Sent: Tuesday, April 05, 2011 11:07 AM
To:

(b)(6)

Cc: FOIA Response.hoc Resource
Subject: FW: sent to Industry Team
Attachments: Criterion to Establish Stable Conditions - 0115 04-05.docx

From: RST08 Hoc
Sent: Tuesday, April 05, 2011 11:07 AM
To: RST01 Hoc
Subject: sent to Industry Team

From: RST01B Hoc
Sent: Tuesday, April 05, 2011 8:56 AM
To: Versluis, Rob
Subject: FW: GEH Response to 398 and 399
Attachments: Q398 Supplement 1.pdf; Q399 GE_Comment_Criterion to Establish Stable Conditions - 1300 4_4_11 INPO.pdf

Rob Versluis, PhD, DOE NE-71, 301-903-1890 (o) (b)(6) (m)

From: RST01 Hoc
Sent: Monday, April 04, 2011 10:05 PM
To: RST07 Hoc; RST08 Hoc; RST09 Hoc; Hoc, RST16; RST03 Hoc; RST01B Hoc; RST06 Hoc
Subject: FW: GEH Response to 398 and 399

From: GE Hitachi Nuclear Response Team (GE Power & Water) [mailto:GE.HitachiNuclearResponseTeam@ge.com]
Sent: Monday, April 04, 2011 9:56 PM
To: RST01 Hoc
Cc: ENERGY GEH ICC Engineering (GE Power & Water)
Subject: GEH Response to 398 and 399

Team,

GEH Response to items 398 and 399.

Thanks,
Jeff

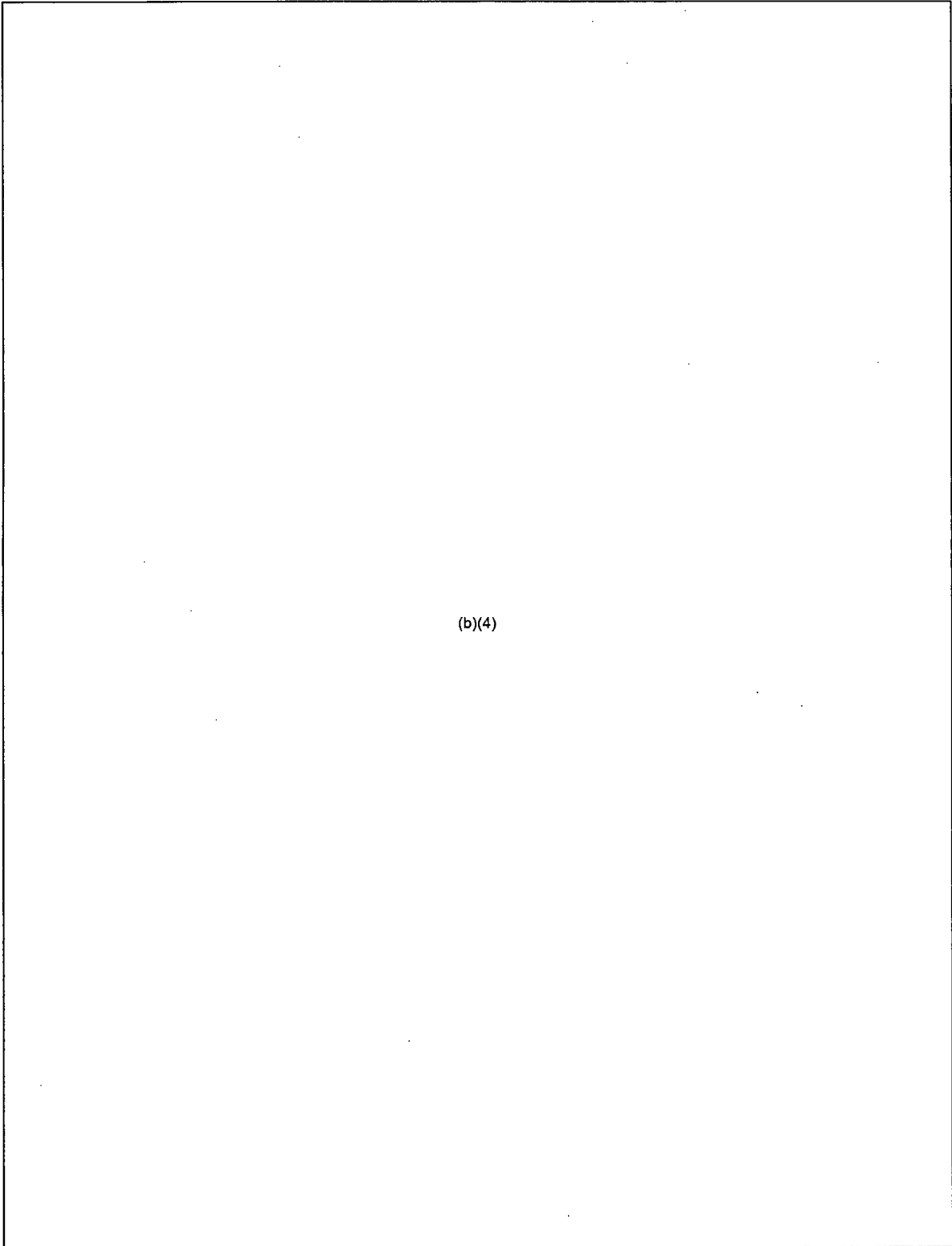
Jeff A. Hren
Technical Project Manager
GE Hitachi Nuclear Energy

T 910 819 4729
M (b)(6)
F 910 362 4729

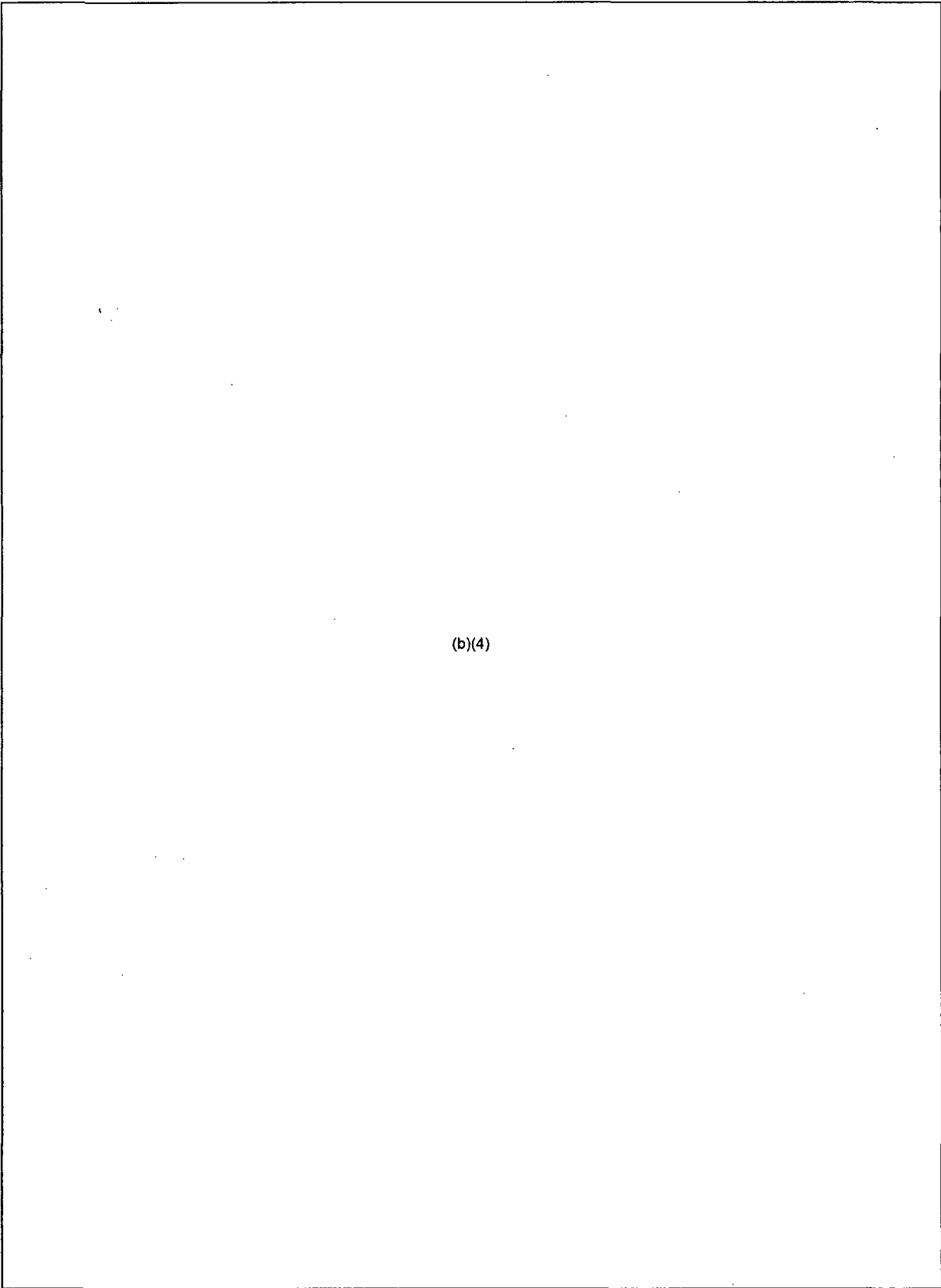
E Jeffa.Hren@ge.com

3901 Castle Hayne Road, M/C F-12
P.O. Box 780
Wilmington, NC 28402, USA

Item 398 Response To TEPCO Questions Regarding Q385 H2



(b)(4)

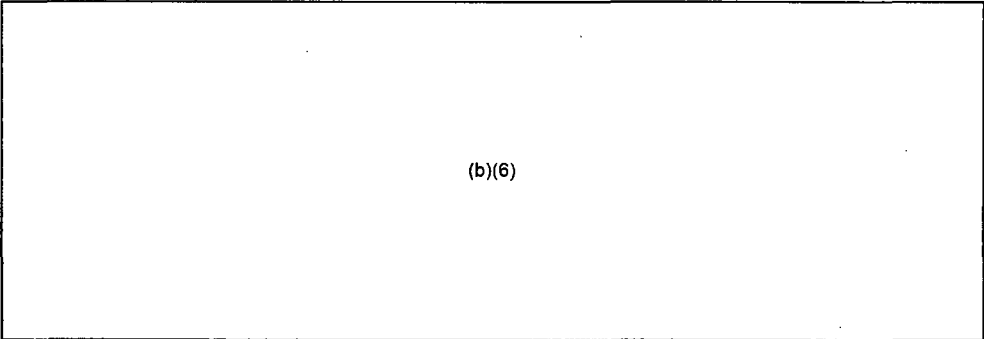


(b)(4)

(b)(4)

(b)(4)

From: RST01 Hoc
Sent: Tuesday, April 05, 2011 6:36 AM
To:



Subject: FW: RST Spent Fuel Pool Assessment Document 4/05 0400
Attachments: 04-05-11 0400 RST Assessment Spent Fuel Pool Document .docx

From: RST08 Hoc
Sent: Tuesday, April 05, 2011 6:34 AM
To: RST01 Hoc
Subject: RST Spent Fuel Pool Assessment Document 4/05 0400

Please take a look at the attached. Updated to include common pool and other information provided.

Proposed for discussion at the 2000 call.

Eva Brown, BWR Systems and Ops Analyst
Reactor Safety Team
Nuclear Regulatory Commission
(301) 816-5100

From: RST01 Hoc
Sent: Monday, April 04, 2011 2:20 PM
To:

(b)(6)

Cc: RST08 Hoc; RST09 Hoc
Subject: FW: Release of contaminated water
Attachments: Discharge of low level contaminated water 4Apr2011[1].pdf

More info on the release of contaminated water.

RST Coordinator

From: RST01B Hoc
Sent: Monday, April 04, 2011 11:48 AM
To: RST01 Hoc; RST01B Hoc
Cc: Alice Caponiti DOE; Rob Versluis DOE; Sal Golub, DOE
Subject: FW: DOE for Consortium Call
Attachments: DOE for Consortium Call

DOE distribution list attached for your use with 1100 and 2000 industry consortium call. Please use for distributing materials for these telecons.

Thanks,

Rob Versluis, PhD, DOE NE-71, 301-903-1890 (o)

(b)(6)

(m)

From: RST01B Hoc
Sent: Monday, April 04, 2011 11:13 AM
To: Caponiti, Alice; Golub, Sal
Subject: FW: Pathway from turbine building
Attachments: NISA Press Release 69 (eng) - Path to Trench[1].pdf

Rob Versluis, PhD, DOE NE-71, 301-903-1890 (o) (b)(6) (m)

From: RST01 Hoc
Sent: Monday, April 04, 2011 11:08 AM
To: RST03 Hoc; RST01B Hoc
Subject: FW: Pathway from turbine building

From: RST01 Hoc
Sent: Monday, April 04, 2011 10:18 AM
To: RST09 Hoc; RST09 Hoc
Subject: FW: Pathway from turbine building

Better picture than shown on Page 2 of IAEA Summary.

From: El-Jaby, Ali [mailto:Ali.El-Jaby@cnscccsn.gc.ca]
Sent: Monday, April 04, 2011 10:15 AM
To: RST01 Hoc; 'NSDemergency@hse.gsi.gov.uk'
Subject: Pathway from turbine building

Colleagues,

Attached is a NISA sketch that came to us via the IAEA about the path from the turbine building to the sea.

Kind regards,

Ali El-Jaby
CNSC

The information contained in this e-mail is intended solely for the use of the named addressee. Access, copying, or re-use of the e-mail or any information contained therein by any other person is not authorized. If you are not the intended recipient, please notify us immediately by returning the e-mail to the originator.

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message immédiatement.

Current estimated path to the Power Cable Trench for power source at Intake Channel of Unit 2

Turbine Building

Power Cable Trench for power source at Intake Channel

Duct for Seawater Pipe

Bottom Level
O.P. -12,010mm

Pit for Duct

Bottom Level
O.P. 0.100mm

Bottom Level O.P. 1,985mm

Conduit
Bottom Level
O.P. 2,500mm

Pits for Conduit
Bottom Level O.P. 2,200mm

O.P. Height measured from the basis of Onahama Point

Cross-sectional view of conduit

Pipe for electric cables

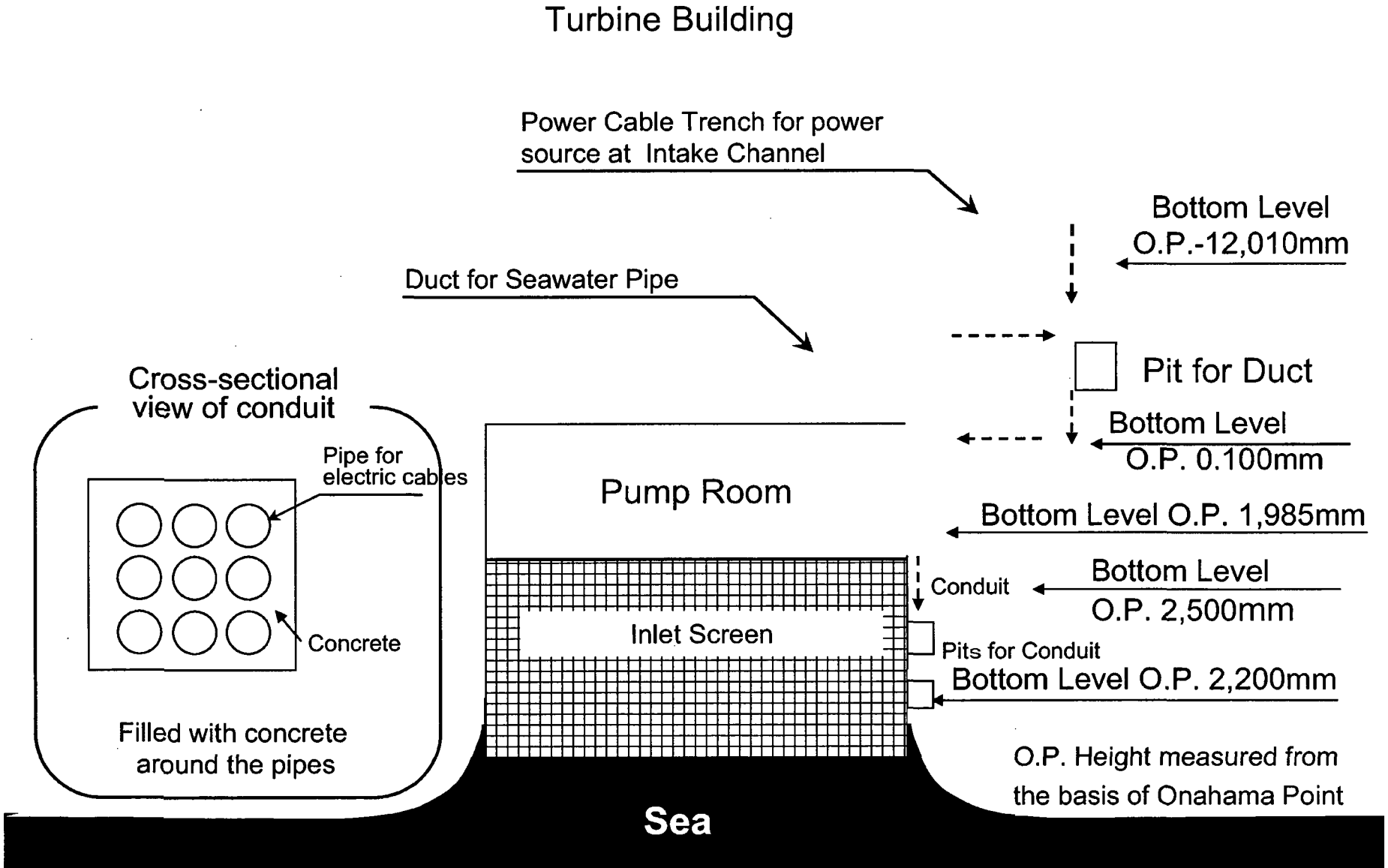
Concrete

Filled with concrete around the pipes

Pump Room

Inlet Screen

Sea



From: RST01B Hoc
Sent: Monday, April 04, 2011 11:10 AM
To: Caponiti, Alice; Golub, Sal
Subject: FW: Agenda 4/4/2011 1100 conference call
Attachments: 1100 Agenda Items-april 4,2011.docx; Q364 GEH Response.pdf

Rob Versluis, PhD, DOE NE-71, 301-903-1890 (o) (b)(6) (m)

From: RST01 Hoc
Sent: Monday, April 04, 2011 10:47 AM
To: RST09 Hoc; RST08 Hoc; RST03 Hoc; RST01B Hoc
Subject: FW: Agenda 4/4/2011 1100 conference call

From: Ruppert, Gregory F. (INPO) [mailto:RuppertGF@inpo.org]
Sent: Monday, April 04, 2011 10:46 AM
To: 'ENERGY GEH ICC Engineering (GE Power & Water)'; 'GE.Hitachinuclearresponseteam@GE.com'; 'Modeen, David'; RST01 Hoc; Gambone, Robert L (INPO); Garchow, David F.(INPO); Kerns, Matthew T. (INPO); Berko, David E (INPO)
Cc: INPOERCTech
Subject: Agenda 4/4/2011 1100 conference call

Attached is the agenda for the 1100 conference call

Greg Ruppert
INPO ERC Technical Support Coordinator
770-644-8022
Cell phone (b)(6)

4/4/2011

1100 – Technical Refocus Meeting – Led by INPO Tech Lead

- 1) Status Open Actions
 - a) Discussion of TEPCO Differing Views on-
 - i) Flooding Containment-INPO Lead
 - ii) Hydrogen Assumptions-GEH Lead
 - b) Feed and Bleed Approach-NRC Lead
 - c) RST Assessment of Spent Fuel Pools-NRC Lead
 - d) Alternate stable Reactor conditions-NRC Lead
 - i) RST draft document underdevelopment
 - e) Impact on containment pressure during flooding-GEH Lead
 - i) Q364 Unit 2 flooding with torus leak attached
 - f) Impact of spraying anti dispersants on spent fuel pools-INPO Lead
 - i) Heat Transfer Capabilities
- 2) Deliver any responses for new actions that have been completed from the daily task alignment meeting
- 3) If actions are not complete:
 - a) Go around to the various parties that have worked on the request to present a brief status.
 - b) Conduct a brief brainstorming/additional helpful technical input from all attendees: 5-10 minutes (this is valuable to NRC and participants)
 - c) Rescope problem if needed
 - d) Determine new actions and responsible parties if applicable
 - e) Determine what the completion time should be; if possible deliver to NRC by 1530
 - f) Determine what the product will be (email, paper, etc.)
 - g) Is a 1600 phone call necessary? If so Identify:
 - i) who needs to participate?
 - ii) who is the lead of the call and will set it up?
 - iii) what is desired outcome of the call?
 - h) Adjourn

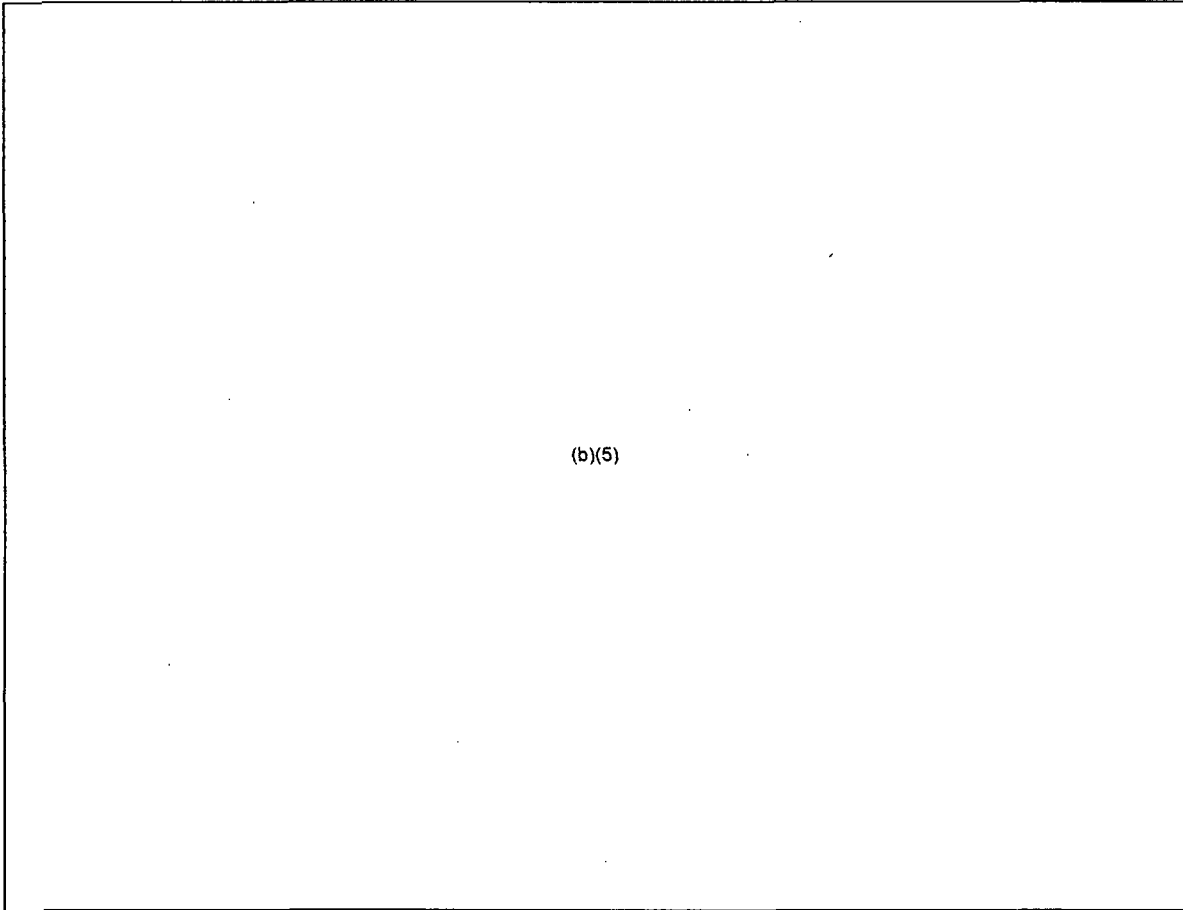
The purpose of this document is to provide the NRC Reactor Safety Team's assessment and recommendations for the Fukushima-Daiichi reactors to the USNRC team in Japan. Our assessments and recommendations are based on the best available technical information. We acknowledge that the information is subject to change and refinement.

Working draft as of 4/4/11 - 1100

(b)(5)

M:\RST\Japanese Earthquake & Tsunami Response\RST Assessment of Fukushima Daiichi\Criterion to Establish Stable Conditions-1.docx

Q364 Brainstorm of Possible Containment Fill Options



From: RST01 Hoc
Sent: Monday, April 04, 2011 11:00 AM
To: RST01B Hoc; RST01B Hoc
Subject: FW: Q397 GEH Option B Recommendations
Attachments: Question 397 - Option B Recommendations Comments by GEH.pdf

Comments from GEH on Option B

From: Beese, Larry (GE Power & Water) [mailto:larry.beese@ge.com]
Sent: Monday, April 04, 2011 10:00 AM
To: RST01 Hoc
Cc: INPOERCTech; ENERGY GEH ICC Engineering (GE Power & Water)
Subject: Q397 GEH Option B Recommendations

Additional GEH Comments for Option B

Contact Group Name:

DOE for Consortium Call

Members:

Alice Caponiti DOE
Rob Versluis DOE
RST01B Hoc
Sal Golub, DOE

alice.caponiti@nuclear.energy.gov
ROB.VERSLUIS@nuclear.energy.gov
RST01B.Hoc@nrc.gov
sal.golub@nuclear.energy.gov

From: RST01 Hoc
Sent: Monday, April 04, 2011 10:49 AM
To: RST03 Hoc; RST01B Hoc
Subject: FW: Q377 RST Assessment Spent Fuel Pool Document REV 0 GEH Markup with INPO Comments Added.
Attachments: Q377 RST Assessment Spent Fuel Pool Document REV 0 GEH Markup.docx

From: Ruppert, Gregory F. (INPO) [mailto:RuppertGF@inpo.org] **On Behalf Of** INPOERCTech
Sent: Monday, April 04, 2011 8:52 AM
To: RST01 Hoc; 'ENERGY GEH ICC Engineering (GE Power & Water)'; 'GE.Hitachinuclearresponseteam@GE.com'; 'Modeen, David'
Cc: Garchow, David F.(INPO)
Subject: FW: Q377 RST Assessment Spent Fuel Pool Document REV 0 GEH Markup with INPO Comments Added.

Attached are the Industry consortium comments

Greg Ruppert

INPO ERC Technical Support Coordinator

Cell phone [redacted] (b)(6)

[redacted] (b)(6)

From: Soper, Scott H. (INPO)
Sent: Monday, April 04, 2011 8:48 AM
To: INPOERCTech
Subject: Q377 RST Assessment Spent Fuel Pool Document REV 0 GEH Markup with INPO Comments Added.

Greg,

We have completed our input on the Spent Fuel Pool Document. We added our comments on top of the GE comments and annotated the comments which are INPO comments. We understand the format change will require a complete review of this document again.

Thank you.
Scott

From: Versluis, Rob <ROB.VERSLUIS@nuclear.energy.gov>
Sent: Monday, April 04, 2011 9:01 AM
To: RST01B Hoc; RST01 Hoc
Subject: FW: Q307 RE: Document search DOE doc EGG-M-09386 CONF-860724-14
Attachments: Q307 1F2 drawing.pdf; Q307 GEH Final Response.pdf; Q307 1F1 drawing.pdf

Fyi, in case you don't have this info yet.

Rob Versluis, PhD, DOE NE-71, 301-903-1890 (o) (b)(6) (m)

-----Original Message-----

From: Miller, Tom
Sent: Monday, April 04, 2011 8:26 AM
To: DL-NERT-All
Subject: FW: Q307 RE: Document search DOE doc EGG-M-09386 CONF-860724-14

FYI

-----Original Message-----

From: GE Hitachi Nuclear Response Team (GE Power & Water) [mailto:GE.HitachiNuclearResponseTeam@ge.com]
Sent: Sunday, April 03, 2011 3:42 PM
To: Miller, Tom
Subject: Q307 RE: Document search DOE doc EGG-M-09386 CONF-860724-14

Tom

Good Afternoon

Attached is the GEH response Q307 to your inquiry.

Regards,
Larry Beese

GEH ICC

-----Original Message-----

From: Miller, Tom [mailto:TOM.MILLER@nuclear.energy.gov]
Sent: Sunday, March 27, 2011 5:21 PM
To: Abelairas, Victor (GE Power & Water)
Cc: Binder, Jeff
Subject: Re: Document search DOE doc EGG-M-09386 CONF-860724-14

Victor,

We have gotten dwg. requests from labs and NRC in several different areas:
1)Dwgs showing torus cooling and vent paths,

- 2) Drywell sump/water discharge path,
- 3) Drywell venting
- 4) NRC has requested drawings of all four spent fuel pools. Assume this is bldg dwgs as well as reactor bldg. We are sending over the spent fuel cooling and reactor bldg dwgs you sent previously. Would there be any other spent fuel dwgs.
- 5) Dwgs showing where/what systems Condensate storage Tank supplies.

Appreciate your help.

Regards,

Tom Miller

----- Original Message -----

From: Abelairas, Victor (GE Power & Water) <victor.abelairas@ge.com>

To: Miller, Tom

Sent: Sun Mar 27 14:47:20 2011

Subject: Document search DOE doc EGG-M-09386 CONF-860724-14

Hi Tom,

We were searching online and came across a reference to DOE document EGG-M-09386 CONF-860724-14 about Three Mile Island. Would you be able to provide us with a copy of this document?

Thank you,

Victor

Victor M. Abelairas
Manager, Technical Services
GE Hitachi Nuclear Energy

3901 Castle Hayne Road
Wilmington, NC 28402
USA

Office: (910) 819-5179

Cell: (b)(6)

Email: victor.abelairas@ge.com

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From: Versluis, Rob <ROB.VERSLUIS@nuclear.energy.gov>
Sent: Sunday, April 03, 2011 6:26 PM
To: RST01B Hoc; RST01 Hoc
Subject: FW: NE EOC Watchstander Report
Attachments: NEGTN02-#205028-v25Q-STATUS_OF_FUKUSHIMA_DAIICHI_REACTORS.docx

Rob Versluis, PhD, DOE NE-71, 301-903-1890 (o) (b)(6) (m)

-----Original Message-----

From: Beville, Tim
Sent: Sunday, April 03, 2011 5:50 PM
To: DL-NERT-All
Subject: NE EOC Watchstander Report

Attached is the updated NE EOC watchstander status report for April 3, 2011 -1800.

Status of Fukushima Daiichi Reactors
03 April 2011
As of 1800 (EDT)

Yellow highlighted text indicates updates to this version. Older items will be deleted as necessary to minimize the size of this report and facilitate quick reading.

- **General**

- Per IAEA on April 3 at 1715 UTC, for Units 1, 2 and 3, external power supply is now being used to power the pumps that are injecting fresh water into the reactors, thus replacing temporary electrical pumps. The switch to external power supply occurred on 3 April at:
 - 1202 JST for Unit 1
 - 1212 JST for Unit 2
 - 1218 JST for Unit 3
- Per NHK World report on April 3, 0900 JST, Japan's Nuclear and Industrial Safety Agency says there has been no change in the amount of radioactive water seeping from the Fukushima nuclear plant after a polymer absorbent was injected into the 20-centimeter crack in the concrete pit. On Sunday, the utility firm used a polymer absorbent to try to stop the leak of radioactive water. NISA said the injection of the chemical began shortly after 1:40 PM, but it cannot confirm if there has been a decline in the amount of contaminated water leaking into the ocean. The agency added that sawdust and newspapers were also used, but the absorbent did not reach the pipe. Engineers are now trying to mix the substance with the water. The agency plans to continue monitoring the situation until Monday to see if there is a positive result.
- Per a TEPCO press release, on April 2 at around 0930 Japan time (JST), TEPCO employees detected water containing radiation dose over 1,000 mSv/h in a concrete pit where supply cables are stored near the intake channel of the Unit 2 reactor. A 20 cm crack was discovered on the concrete lateral of the pit. (Follow this link for a useful graphic [Unit 2:Outline drawing of the out flow to ocean near dischargechannel\(PDF 10.8KB\)](#))
- From 3 April Kyodo news, TEPCO said that two workers in their 20s who have been missing were found dead in the basement of the Unit 4 turbine building last Wednesday, March 30. They died of bleeding from multiple injuries resulting from the tsunami. This is the first time that TEPCO workers have been confirmed to have died at the plant.
- NISA reported that among the workers at the Fukushima-Daiichi plant, 21 have received doses exceeding the 100-mSv (10 Rem) limit. No worker has received a dose above 250 mSv (25 Rem), which is the dose limit for urgent emergency work according to international recommendations. (from NucNet News in Brief / No. 88 / 2nd April 2011)
- Per the JAIF, TEPCO is obtaining a "massive, hollow floating platform" from Shizuoka City and will use it to store contaminated water from the Fukushima site. The float can store up to 18,000 tons of water. Meanwhile TEPCO and the Japanese government are working to identify safe methods for transporting and storing contaminated water.
- Per IAEA, transfer of fresh water from the US Navy barge to the 'filtered water tank' near reactor No.1 started on April 1 at 1538, and was suspended on April 1 around 1700

due to a connection failure. JAIF reports that a second US Navy barge carrying 13000 tons of fresh water arrived at the site as of April 3 at 0900 JST.

- Per NEI, TEPCO is evaluating the use of a synthetic resin that would be sprayed over debris at the site to prevent the spread of radioactive dust. On April 1, TEPCO started spraying inhibitor on a trial basis at the mountain side area of the common spent fuel pool.
- Per NEI, additional equipment, including the biggest concrete pump in the world, is being provided by U.S. companies. The pump's 70-meter boom can be controlled remotely. It has been in use at the Savannah River Site, helping build a U.S. government mixed oxide nuclear fuel plant. Concrete pumps are already in use at the site to assist with spraying water into the used fuel pools.
- Per TEPCO, monitoring posts (no.1 to no.8) which were installed around the site boundary have been restored. They will continue monitoring the measured value and make announcements on those values accordingly.
- World Nuclear News reports Tepco plans to construct a 6000 tonne water tank as well as a 4000 tonne pond. These will work in conjunction with a 20 tonne per hour treatment facility to handle water from drainage canals around all six reactors at the plant. The tank and pond should be complete around the middle of this month, with the treatment facility following about two weeks later. The set-up should let the company mitigate the discharges to sea by safely storing and sampling the water and only discharging it after treatment.
- The IAEA has announced that it will hold a high-level conference on preliminary lessons learned from Fukushima on June 20-24, 2011.
- Less frequent information updates are available from Japanese agencies. This is particularly the case for NISA.
- **Radiation Levels**
 - Per JAIF as of 1800 JST on April 3, Radiation levels were 0.83mSv/h at the south side of the office building, 127 μSv/h at the Main gate (a slight reduction over the previous day), and 59μSv/h at the West gate,
 - It was also discovered on April 2 that there is highly radioactive (more than 1000mSv/hr) water in the concrete structure housing electrical cable and this water is leaking into the sea (see detail in General item)
 - Per NHK World on April 3, 0900 JST, Radiation levels on the ground have gradually decreased or have stabilized in many locations around the Fukushima Daiichi nuclear plant. Experts say these readings do not pose a threat to human health. The highest reading in Fukushima City, 65 kilometers northwest of the plant, was 2.56 microsieverts per hour on Sunday morning, and 2.28 microsieverts per hour in Koriyama City, to the west of the plant. These are higher figures than the normal levels of 0.04 to 0.06 microsieverts per hour. At Sendai City in Miyagi Prefecture, a reading of 0.08 microsieverts was detected on Sunday afternoon. In Ibaraki Prefecture, the highest readings were 0.52 microsieverts per hour in Kita-ibaragi City and 0.17 microsieverts per hour in Mito City.

Fukushima Daiichi Unit 1 reactor

- Per the IAEA, as of 1715 UTC April 3, fresh water continues to be injected into the reactor pressure vessel through the feed-water line at an indicated flow rate of 8 m³/h using a pump powered with offsite electric power (See above)
 - Per JAIF at 0900 JST 3 April, reactor parameters are: RPV pressure (A) 0.293 MPa Gauge (G), (B) 0.547 MPa G; water level 1.65/1.65 meters below the top of the fuel rods; containment vessel pressure 0.155 MPa absolute (abs); RPV feedwater nozzle 252.8 °C.
 - As of April 1, 1100 JST water level in trench is 1.14m below floor level.
 - No data is available for SFP pool water temperature as of this report.
 - As of March 24, the NRC estimated that Unit 1 had 70% core damage.
 - The reactor vessel and primary containment are intact. Unit #1 contains 292 elements.
- **Fukushima Daiichi Unit 2 reactor**
 - Per the IAEA, as of 1715 UTC April 3, fresh water continues to be injected into the reactor pressure vessel through the feed-water line at an indicated flow rate of 9 m³/h using a pump powered with offsite electric power (See above)
 - Per JAIF 0900 JST 3 April, RPV pressure (A) -0.016 MPa G, (B) -0.018 MPa G; water level 1.60 meters below the top of the fuel rods; containment vessel pressure 0.105 MPa abs. Per IAEA as of 1715 UTC April 3, the indicated temperature at the feed water nozzle of the RPV has decreased from 161 °C to 153 °C and bottom head is not reported. Per JAIF at 0900 JST 3 April SFP temperature is 61°C, a decrease of about 11°C from the previous measurement on April 2.
 - As of April 1, 1100 JST, water level in the trench is 1.04 meters below floor level.
 - On March 24, the NRC estimated that Unit 2 had 33% core damage.
 - Unit#2 SFP contains 587 elements.
- **Fukushima Daiichi Unit 3 reactor**
 - Per the IAEA, as of 1715 UTC April 3, fresh water continues to be injected into the reactor pressure vessel through the feed-water line at an indicated flow rate of 7 m³/h using a pump powered with offsite electric power (See above)
 - Per JAIF at 1030 JST April 3, RPV pressure is (A) 0.011 MPa G (B) -0.083 MPa G; reactor water level is (A) 1.85 m (B) 2.25m below the top of the fuel rods; containment vessel pressure 0.1062 MPa abs. Per IAEA at 1715 UTC on April 3, the indicated temperature at the feed water nozzle of the RPV is about 118 °C and at the bottom of RPV is about 92 °C.
 - As of April 1, 1100 JST, water level in trench is 1.55m below floor level.
 - No data is available for SFP pool water temperature as of this report.
 - Fresh water injection to the unit 3 Spent Fuel Pool via the Cooling and Purification Line continues.
 - On March 24, the NRC estimated that Unit 3 had 33% core damage.
 - Unit #3 SFP contains 514 elements.
- **Fukushima Daiichi Unit 4 reactor**
 - Unit 4 is shutdown with the core removed to the spent fuel pool in December for maintenance on the reactor.
 - Unit #4 SFP contains 1331 elements.

- Per NISA, freshwater spray to the Spent Fuel Pool using Concrete Pump Truck (50t/h) took place at 08:25 UTC on April 1.
- **Fukushima Daiichi Unit 5 reactor**
 - Unit 5 was in a refueling outage at the time of the earthquake.
 - Unit #5 SFP contains 946 elements.
 - Per NISA as of NISA March 30: Reactor pressure 0.108 MPa abs, reactor water level 2.161 m above the top of the fuel rods, reactor water temperature is 29.9°C .
 - Per JAIF as of 1100 JST 3 April, the SFP water temp was 29.1°C.
 - Power was switched to off-site power on March 21.
- **Fukushima Daiichi Unit 6 reactor**
 - Unit 6 was in a refueling outage at the time of the earthquake.
 - Reactor is in cold shutdown conditions (less than 100°C). Cooling of the reactor cores continues.
 - Unit #6 SFP contains 876 elements.
 - Per NISA as of 06:00 March 31: Reactor pressure 0.104 MPa, Reactor water temp 32.6°C, reactor water level 1.703 m above the top of the fuel rods.
 - Per JAIF, as of 1100 JST 3 April, SFP water temp was 29.0°C.
 - Power supply to Unit 6 was switched from to temporary power to permanent supply on March 25.
- **Fukushima Daiichi Common Spent Fuel Pool**
 - JAIF reports that, as of 0300 EDT April 1, “Steam-like substance” rose intermittently from the reactor building at Units 1, 2, 3 and 4 – spent fuel pools suspected source. Injecting and/or spraying water to the spent fuel pool has been conducted.
 - Japanese authorities have confirmed that fuel assemblies there are fully covered by water, and the temperature was 32 °C as of 2030 JST 30 March, (FEPC)
 - As of 1900 on March 30, approximately 130 tons of water in total has been injected to the spent fuel storage pool. (FEPC)
- **Fukushima Daiichi Dry Cask Storage Building**
 - At 10:00AM on March 18, it was confirmed that there was no damage by visual checking of external appearance.

Sources include:

Federation of Electric Power Companies of Japan

Nuclear Industrial Safety Agency

Links:

<http://www.jaif.or.jp/english/>

<http://www.tepco.co.jp/en/index-e.html>

<http://nei.cachefly.net/newsandevents/information-on-the-japanese-earthquake-and-reactors-in-that-region/>

<http://www.iaea.org/>

<http://www.mext.go.jp/english/>

<https://portalwc.doe.gov/>

<http://www.nisa.meti.go.jp/english/>

<http://www.fepec.or.jp/english/>

From: RST01 Hoc
Sent: Saturday, April 02, 2011 10:27 PM
To:

(b)(6)

Subject: 04-02-11 2200 RST Assessment Spent Fuel Pool Document REV 0
Attachments: 04-02-11 2200 RST Assessment Spent Fuel Pool Document REV 0 .docx

The attached document is for discussion at the 1100 EDT call on 4/3/11

From: RST07 Hoc
Sent: Saturday, April 02, 2011 10:21 PM
To: RST01 Hoc
Subject: 04-02-11 2200 RST Assessment Spent Fuel Pool Document REV 0 .docx

All,

This is a revision of the Fuel pool assessment document that more clearly defines the desired end state without prescribing any particular solution for any unit.

We have included what we believe are the parameters that should be used to make the assessments for each spent fuel pool.

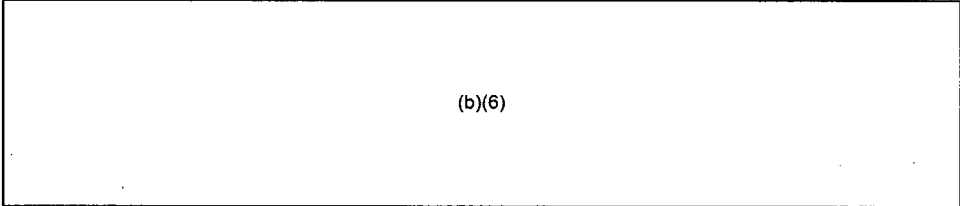
The data and work that was compiled on an early version of the document is attached at the end of the new document.

The RST has determined that SFP 5 and 6 are already at the desired end state and are not included in the Assessment.

Chuck Norton
RST BWR Analyst

From: RST01 Hoc
Sent: Saturday, April 02, 2011 10:07 PM
To: Ali, Syed; Blamey, Alan; Casto, Chuck; Collins, Elmo; Emche, Danielle; Giessner, John; Jackson, Todd; Miller, Marie; Monninger, John; Scott, Michael; Sheikh, Abdul; Stahl, Eric; Taylor, Robert; Way, Ralph

Cc:



Subject: USNRC Team at USAID
Attachments: Supplemental Information on Venting Rev 6
Supplemental Information on Venting FINAL Rev 6.pdf; Supplemental Information on Venting Rev 6 CONCURRENCE OFFICIALS 4-2-2011.docx

NRC Japan Team,

Please find attached the Supplemental Information on Venting, Rev 6 document, dated 4/2/11 @ 2200 EDT, for your use. The 2nd attachment is the list of concurring officials for the document.

Regards,

Brett Rini
RST Coordinator

From: LIA07 Hoc
Sent: Sunday, April 03, 2011 2:59 PM
To: OST04 Hoc
Subject: FW: Radiation data by MEXT
Attachments: (English)20110403_11.pdf; Unofficial(English)20110403_11.pdf; (English)20110403_12.pdf; (English)20110403_13.pdf; (English)20110403_14.pdf; (English)20110403_15.pdf

-----Original Message-----

From: HOO Hoc
Sent: Sunday, April 03, 2011 10:17 AM
To: LIA07 Hoc; OST01 HOC; OST02 HOC; OST03 HOC
Subject: FW: Radiation data by MEXT

Headquarters Operations Officer
U.S. Nuclear Regulatory Commission
Phone: (301) 816-5148
Fax: (301) 816-5151
Email: hoo.hoc@nrc.gov
Secure Email: hoo@nrc.sgov.gov

-----Original Message-----

From: saigai03@mext.go.jp [mailto:saigai03@mext.go.jp]
Sent: Sunday, April 03, 2011 9:40 AM

To: (b)(6)

(b)(6)

(b)(6)

Dear Sir,

Please see attached the document.

Sincerely yours,
Naoaki Akasaka

From: LIA02 Hoc
Sent: Friday, April 01, 2011 5:41 PM
To: RST01 Hoc; RST02 Hoc; RST Communicator; RST01B Hoc; Hoc, PMT12; PMT07 Hoc; PMT09 Hoc
Subject: FW: TEPCO Earthquake Information Update on April 1: Fukushima-Daiichi and Daini Status
Attachments: image001.jpg; image002.jpg

fyi

From: Hidehiko Yamachika [mailto:yamachika-hidehiko@jnes-usa.org]
Sent: Friday, April 01, 2011 5:34 PM
To: LIA02 Hoc
Cc: Aono, Kenjiro; Michael W. Chinworth
Subject: FW: TEPCO Earthquake Information Update on April 1: Fukushima-Daiichi and Daini Status

FYI

This is from TEPCO Washintong.

From: 松尾 建次 [mailto:matsuo.kenji@wash.tepco.com] **On Behalf Of** matsuo.kenji@tepco.co.jp
Sent: Friday, April 01, 2011 2:15 PM
To: matsuo.kenji@tepco.co.jp
Subject: TEPCO Earthquake Information Update on April 1: Fukushima-Daiichi and Daini Status

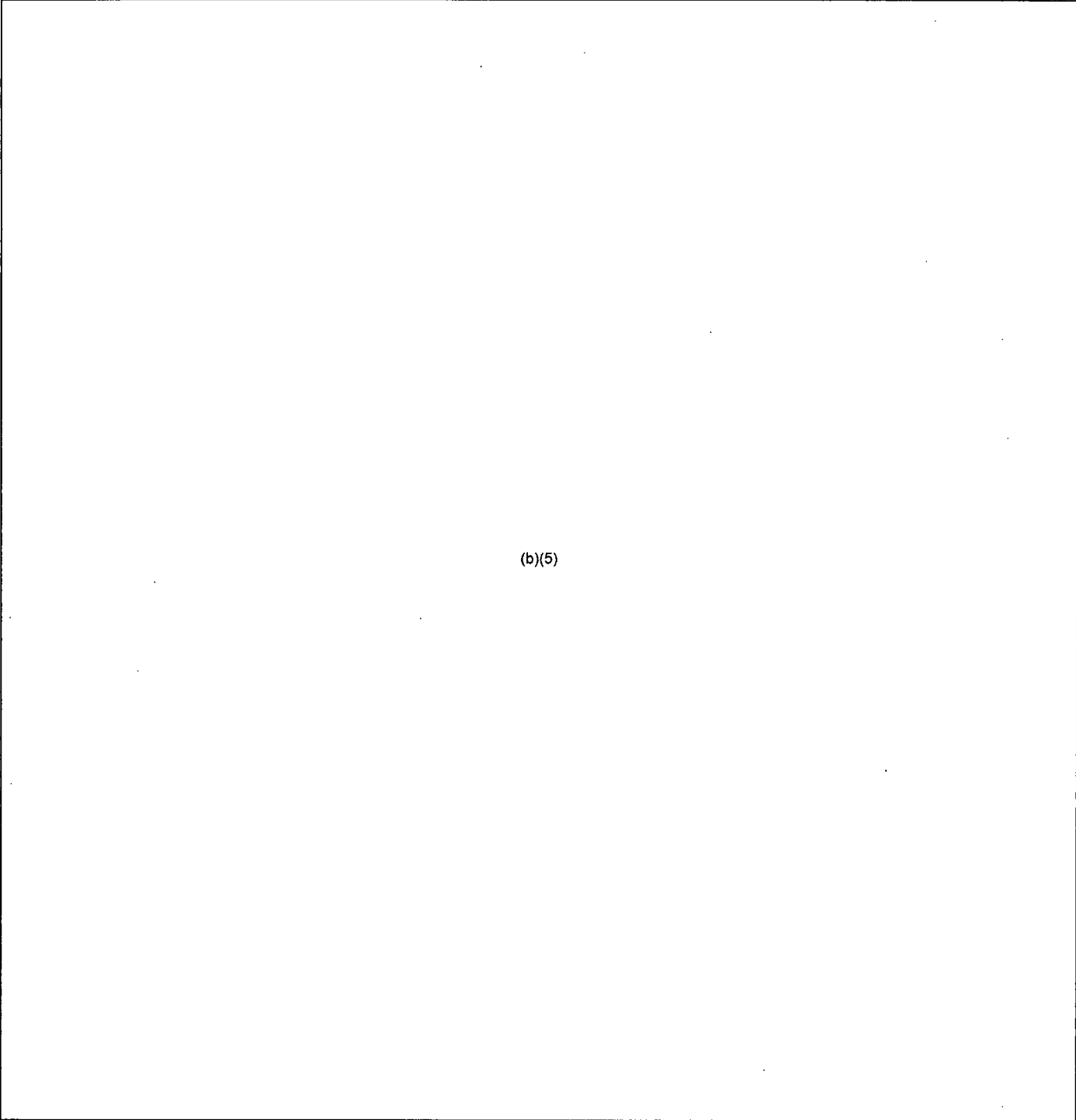
Dear Friends,

Please take a look for updates at Fukushima-Daiichi and Daini NPS.

- (1) The record of the earthquake intensity observed at Fukushima Daiichi NPS and Fukushima Daini NPS (Interim Report)
- (2) About NISA's instruction for TEPCO to address APD operation at Fukushima Daiichi NPS

Contacts:

TEPCO Washington Office 202-457-0790
Kenji Matsuo, Director and General Manager
Yuichi Nagano, Deputy General Manager,
Masayuki Yamamoto, Manager, Nuclear Power Programs



(b)(5)

(b)(5)

(b)(5)

From: Versluis, Rob <ROB.VERSLUIS@nuclear.energy.gov>
Sent: Friday, April 01, 2011 11:59 AM
To: RST01 Hoc; RST01B Hoc
Subject: Fw: Additinal information

Rob Versluis +1-301-903-1890(o) (b)(6) (m)

----- Original Message -----

From: Peltz, James
To: DL-NERT-All
Sent: Fri Apr 01 11:24:26 2011
Subject: FW: Additinal information

Camera on SFP 4.

-----Original Message-----

From: Shunsuke KONDO [mailto:(b)(6)]
Sent: Friday, April 01, 2011 11:22 AM
To: 矢作 公利
Cc: 尾本 彰; Lyons, Peter; SCHU; Binkley, Steve; Kelly, John E (NE); Aoki, Steven; Adams, Ian; Kondo Shunsuke.; ichii-naoto@meti.go.jp
Subject: Re: Additinal information

Dear All

At this site, you can see the top-down view of SFP of 1F4 taken by video camera mounted on the head of a water injector Ziraph

<http://www.nikkei.com/news/headline/archive/article/g=96958A9C93819695E1E3E2E68B8DE1E3E2E1E0E2E3E3E2E2E2E2E2E2>

--
Regards,
Shunsuke Kondo

From: RST01B Hoc
Sent: Friday, April 01, 2011 11:29 AM
To: RST01 Hoc
Subject: FW: Reactor Views
Attachments: page-0014.pdf; page-0001.pdf; page-0002.pdf; page-0003.pdf; page-0004.pdf; page-0005.pdf; page-0006.pdf; page-0007.pdf; page-0008.pdf; page-0009.pdf; page-0010.pdf; page-0011.pdf; page-0012.pdf; page-0013.pdf

Rob Versluis, PhD, DOE NE-71, 301-903-1890 (o) (b)(6) (m)

-----Original Message-----

From: Versluis, Rob [mailto:ROB.VERSLUIS@nuclear.energy.gov]
Sent: Friday, April 01, 2011 9:02 AM
To: RST01B Hoc
Subject: Fw: Reactor Views

Rob Versluis +1-301-903-1890(o) (b)(6) (m)

----- Original Message -----

From: Goldner, Frank
To: Versluis, Rob
Sent: Fri Apr 01 08:41:57 2011
Subject: FW: Reactor Views

FYI. Frank (figs 0009 and 0010 deal with Plant #4)

-----Original Message-----

From: Goldner, Frank
Sent: Wednesday, March 30, 2011 4:05 PM
To: Schwab, Patrick
Cc: McCaughey, Bill; 'Joy.Rempe@inl.gov'; Peko, Damian
Subject: FW: Reactor Views

Pt;

Attached are Reactor engineering drawings that Damian Peko and I extracted from files on the disc he has, for the 6 reactors of interest to us.

In particular 0009 and 0010 show details of reactor #4.

I already have taken the liberty of sending these to Jess Gehan to help him help us with the storage pool situation. I will now also send these to Joy Rempe as I feel they may help her in correlating source locations on the thermogram images she has.

FYI. These are all OUO, but John Kelly today authorized our sending OUO material to our lab team members as appropriate.

Hoping you get better soon.

Frank

-----Original Message-----

From: Peko, Damian

Sent: Wednesday, March 30, 2011 11:56 AM

To: Goldner, Frank

Subject: Reactor Views

Fukushima-1

to our company and our licensors.
Therefore, it shall neither be disclosed to any
third parties, be copied, nor be used for any purpose
other than that accorded by our company.

THE TOKYO ELECTRIC POWER COMPANY, INC.

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[Redacted]

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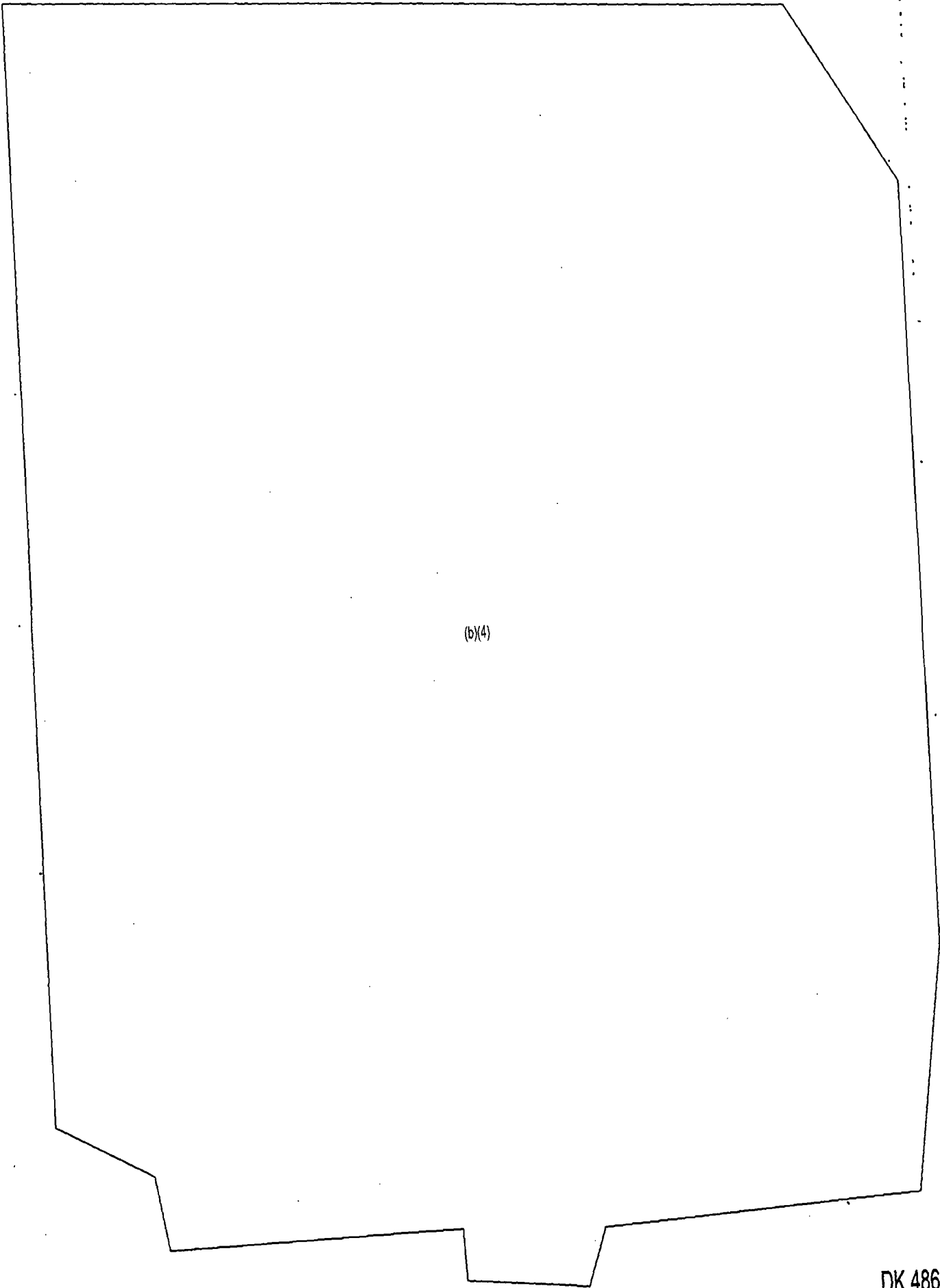
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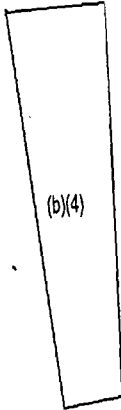
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From: Versluis, Rob <ROB.VERSLUIS@nuclear.energy.gov>
Sent: Thursday, March 31, 2011 5:43 PM
To: Hoc, RST16
Cc: RST01B Hoc
Subject: FW: RST Assessment

Rob Versluis, DOE NE-71, 301-903-1890 (o) (b)(6) (m)

-----Original Message-----

From: Golub, Sal
Sent: Thursday, March 31, 2011 5:22 PM
To: 'RST01 Hoc'
Cc: Versluis, Rob; Kelly, John E (NE); Caponiti, Alice
Subject: RST Assessment

On March 22, I was assigned by the Office of Nuclear Energy (NE) to serve as the primary NE liaison to the INPO /Industry Consortium activity being coordinated by NRC. In this capacity, I have participated in several of the group's scheduled teleconferences and reviewed and provided comments on the RST Assessment. I endorse the consensus recommendations as formulated, recognizing that there are risk trade-offs and uncertainties. As noted several times in our discussions, this is a "living document" which will be modified as appropriate to reflect changing conditions, incorporate new information or to consider longer term issues.

Sal Golub, PMP
Associate Deputy Assistant Secretary
for Nuclear Reactor Technologies (NE-7)
Tel: 301-903-1636
Cell: (b)(6)
Fax: 301-903-0180
sal.golub@hq.doe.gov

From: RST01B Hoc
Sent: Thursday, March 31, 2011 2:24 PM
To: RST01B Hoc

Rob Versluis, DOE NE-71, 301-903-1890 (o) (b)(6) (m) *****

From: RST01 Hoc
Sent: Thursday, March 31, 2011 11:44 AM
To:

(b)(6)

Subject: FW: Fax from 81355105111
Attachments: File1.PDF

TEPCO Assessment of Structural Damage to Units 1, 2, 3, & 4 Reactor Buildings.

NRC RST Coordinator

FROM: NRC JAPAN TEAM
TO: RST HQ
SUBJECT: TEPCO'S ASSESSMENT
OF STRUCTURAL
DAMAGE TO
UNITS 1, 3, AND 4
REACTOR BUILDINGS

FOR ADDITIONAL INFORMATION
OR QUESTIONS CONTACT
ABDUL SHEIKH

TOTAL NO. OF PAGES: 12
(INCLUDING COVER
SHEET)

31. MAR. 2011 11:36

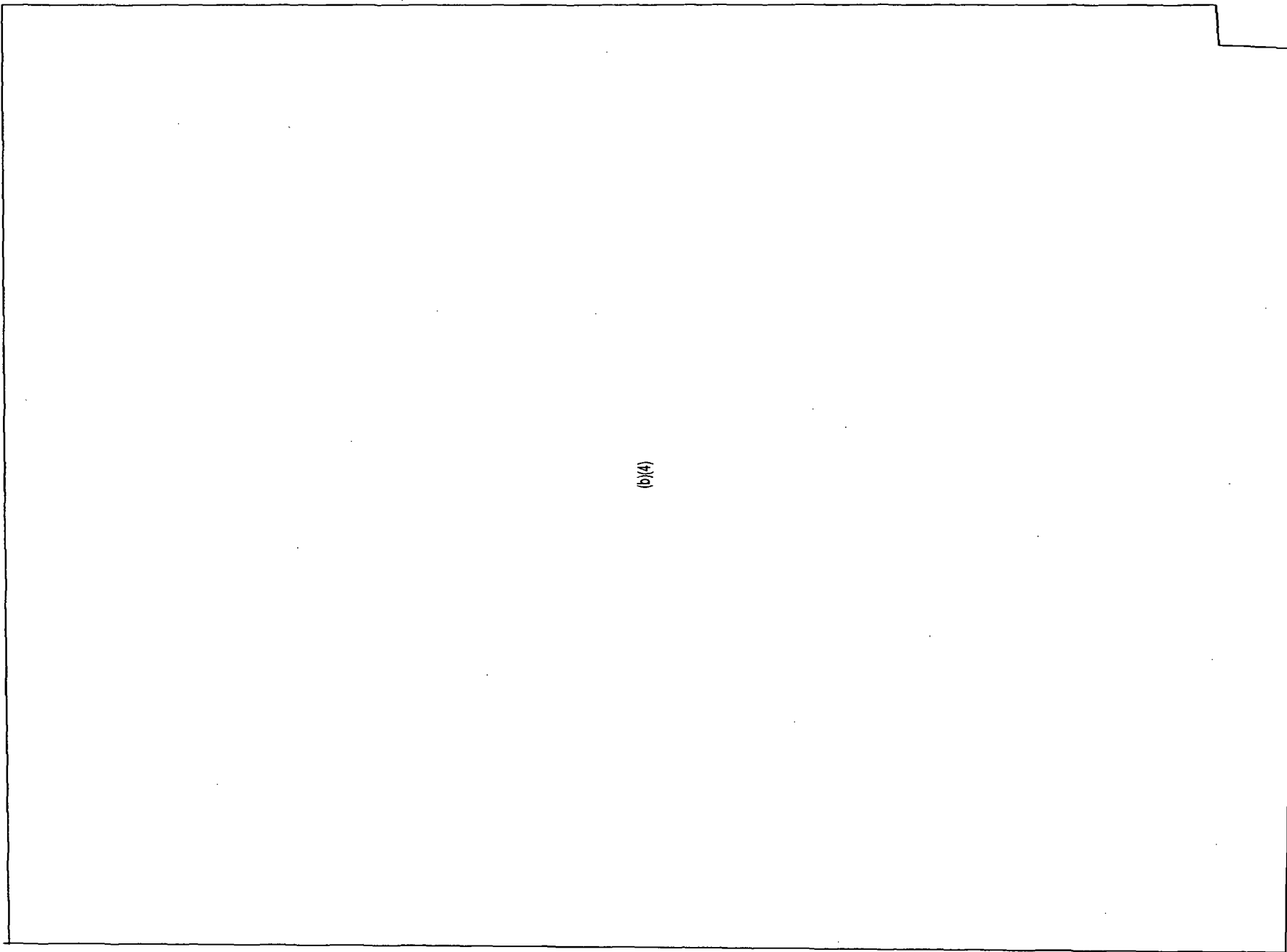
EMBASSY-CONTROL-ROOM

NO. 218

P. 2

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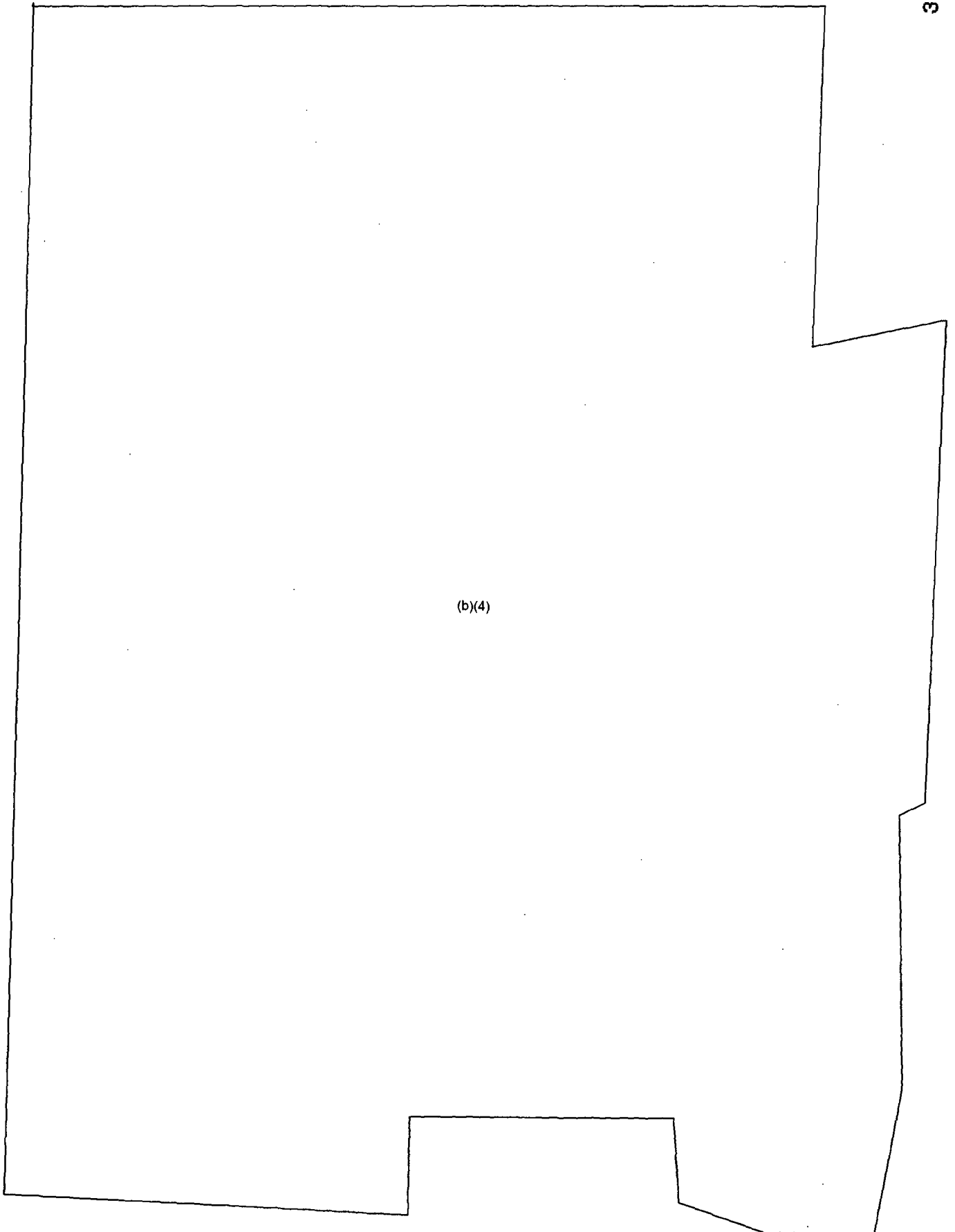
1
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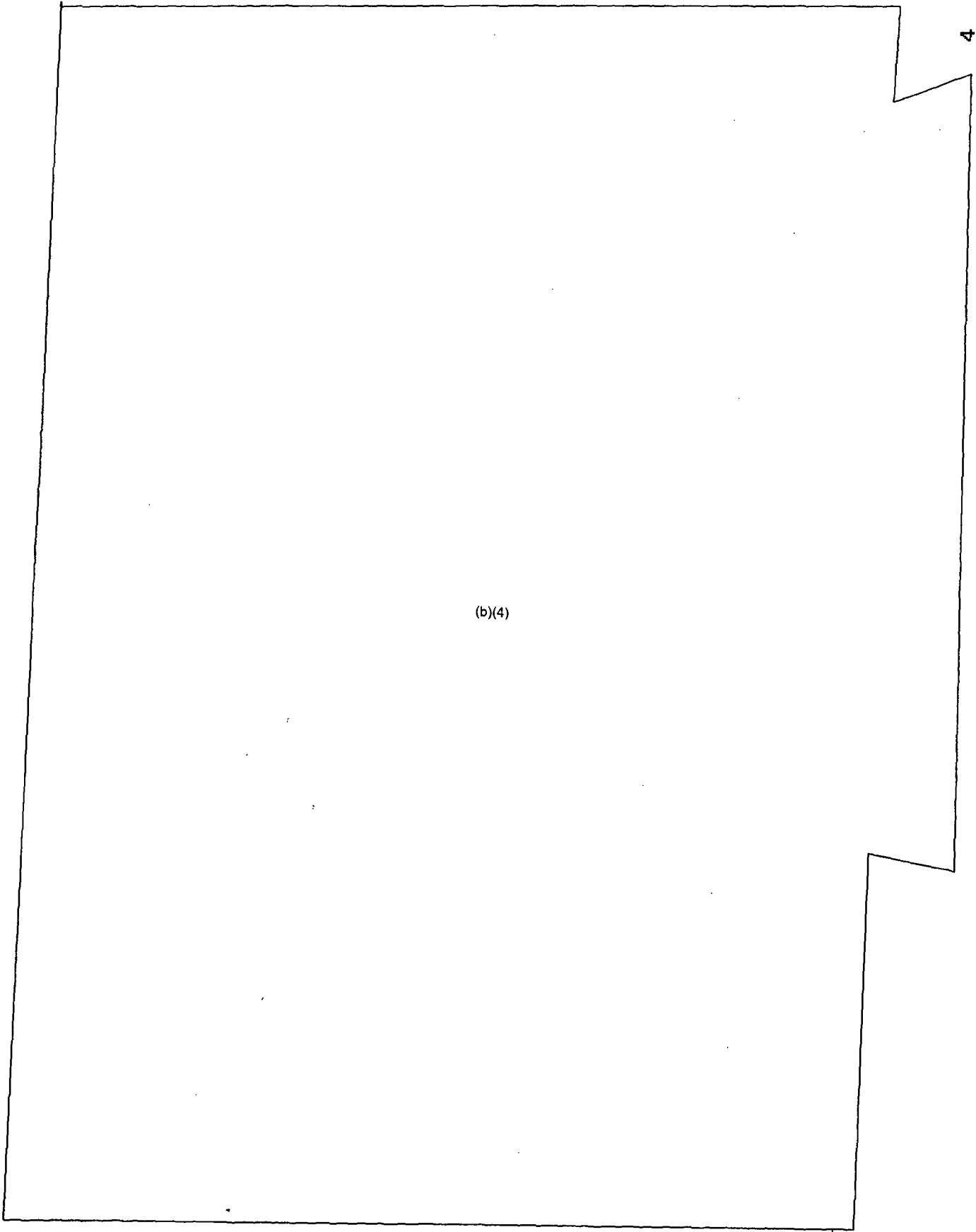
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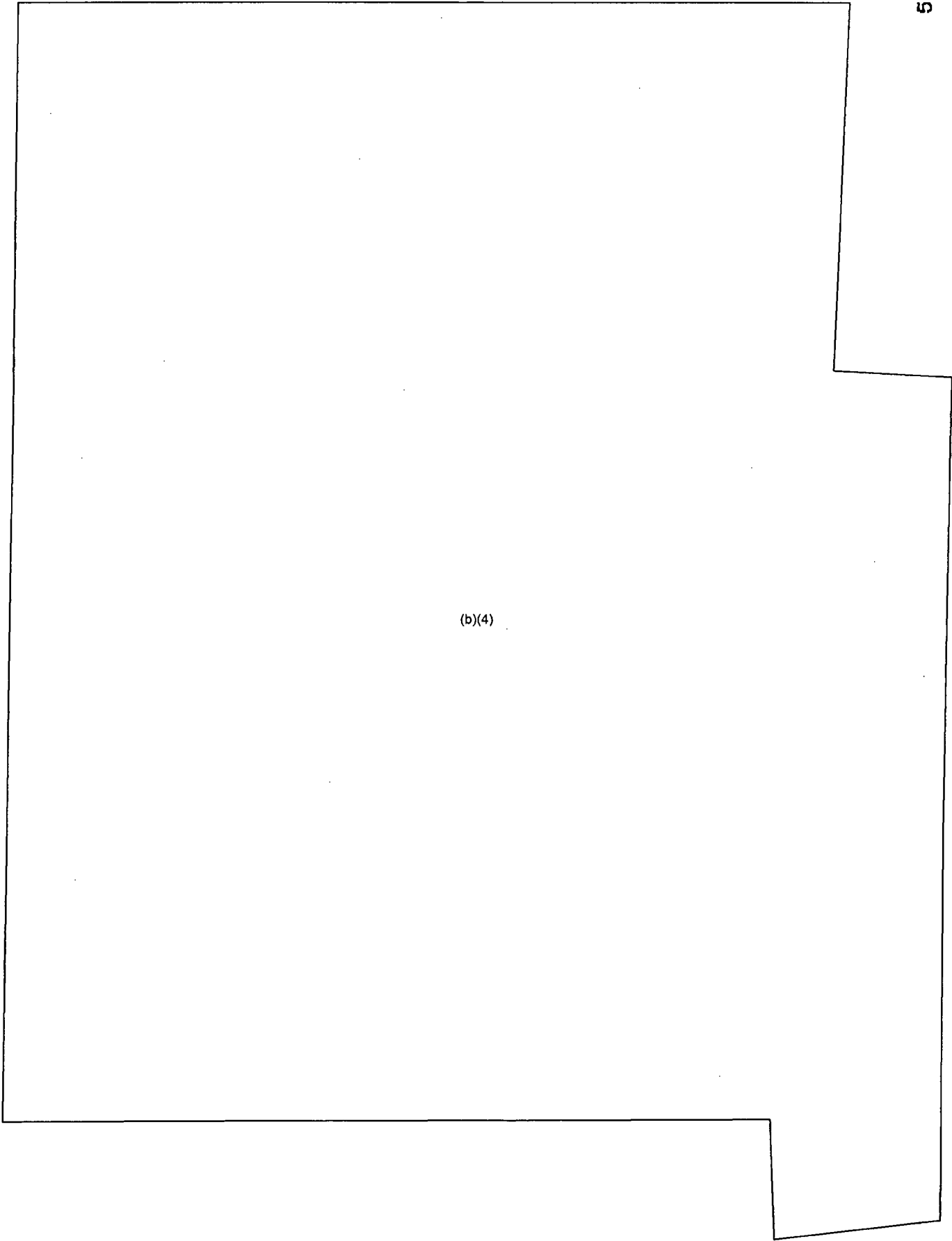
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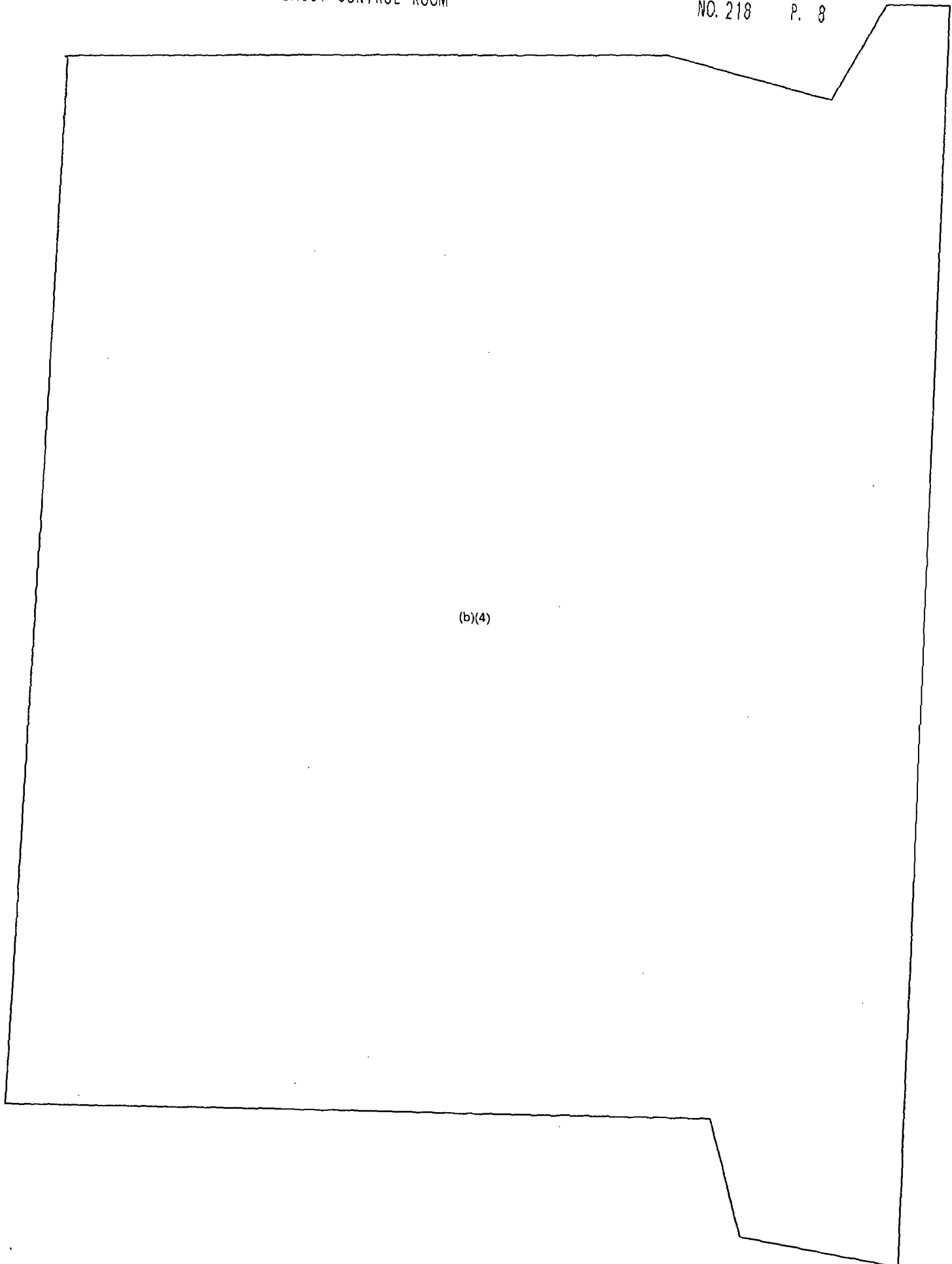
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31. MAR. 2011 11:39

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31. MAR. 2011 11:39

EMBASSY-CONTROL-ROOM

NO. 218 P. 12

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DK 508 of 1892

From: RST01 Hoc
Sent: Thursday, March 31, 2011 10:44 AM

To:

(b)(6)

Subject: FW: 1100 Agenda
Attachments: 1100 RST Meeting Agenda - 03-31-2011.doc

From: Larsen, Carl B. (INPO) [mailto:LarsenCB@INPO.org]
Sent: Thursday, March 31, 2011 10:41 AM
To: RST01 Hoc; GE.Hitachinuclearresponseteam@GE.com; ENERGY GEH ICC Engineering (GE Power & Water); Modeen, David
Subject: 1100 Agenda

Authorization for Limited Distribution of Restricted Documents

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The attached document is the agenda for the 1100 phone call.

Thanks,
Carl Larsen
INPO ERC Technical Coordinator

03/31/2011 – 1100 – Technical Refocus Meeting

(b)(4)

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03/30/2011 1900 – Technical Refocus Meeting

(b)(4)

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From: Versluis, Rob <ROB.VERSLUIS@nuclear.energy.gov>
Sent: Thursday, March 31, 2011 8:33 AM
To: RST01 Hoc; RST01B Hoc
Cc: Versluis, Rob
Subject: DOE presence at RST

I will be attending meetings at DOE this am and plan to be back at the RST01B desk in pm. Please contact me on this address if needed.

Rob Versluis +1-301-903-1890(o) + (b)(6) (m)

From: Versluis, Rob <ROB.VERSLUIS@nuclear.energy.gov>
Sent: Thursday, March 31, 2011 8:04 AM
To: RST01 Hoc; RST01B Hoc
Subject: Fw: NEGTN02-#205028-v25K-STATUS_OF_FUKUSHIMA_DAIICHI_REACTORS
Attachments: NEGTN02-#205028-v25K-STATUS_OF_FUKUSHIMA_DAIICHI_REACTORS.docx

Fyi
Rob Versluis +1-301-903-1890(o) + (b)(6) (m)

----- Original Message -----

From: Smith-Kevern, Rebecca
To: DL-NERT-All
Sent: Thu Mar 31 07:55:03 2011
Subject: NEGTN02-#205028-v25K-STATUS_OF_FUKUSHIMA_DAIICHI_REACTORS

From: RST01 Hoc
Sent: Wednesday, March 30, 2011 8:13 PM
To: RST07 Hoc; RST03 Hoc; RST01B Hoc
Subject: FW: Industry Proposal for Rev. 1 to the RST Assessment
Attachments: PTS Issue #16 - Rev. 1 to RST Assessment Proposal - FINAL.doc

From: Larsen, Carl B. (INPO) [mailto:LarsenCB@INPO.org]
Sent: Wednesday, March 30, 2011 8:11 PM
To: RST01 Hoc
Cc: GE.Hitachinuclearresponseteam@GE.com; Modeen, David; Garchow, David F.(INPO); Gambone, Robert L (INPO)
Subject: Industry Proposal for Rev. 1 to the RST Assessment

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The attached document represents the industry's best advice for proposed changes to the RST Assessment.

Thanks,
Carl Larsen
INPO ERC Technical Coordinator

From: RST01 Hoc
Sent: Wednesday, March 30, 2011 6:28 PM
To: RST07 Hoc; RST03 Hoc; RST01B Hoc
Subject: FW: *** INPO ERC Technical Team Proposal for Rev. 1 to the RST Assessment ***
Attachments: Rev 1 Proposal to RST Assessment.doc

Importance: High

FYI

From: RST01 Hoc
Sent: Wednesday, March 30, 2011 6:27 PM
To: [REDACTED] (b)(6)

[REDACTED] (b)(6)

Subject: *** INPO ERC Technical Team Proposal for Rev. 1 to the RST Assessment ***
Importance: High

FYI- This is the paper to be used for the 1900 EDT conference call.

Thanks,

Greg Schoenebeck
RST Coordinator

From: Versluis, Rob <ROB.VERSLUIS@nuclear.energy.gov>
Sent: Wednesday, March 30, 2011 6:01 PM
To: RST01 Hoc; RST01B Hoc
Subject: FW: DOE Draft on Reactor Temperatures

Greg, this should satisfy your action, assuming you can track down the NRC calculation.

-----Original Message-----

From: Kreykes, Jon (IN)
Sent: Wednesday, March 30, 2011 5:55 PM
To: Versluis, Rob
Cc: Luksic, Andy; Versluis, Rob; Binder, Jeff; Kelly, John E (NE)
Subject: RE: DOE Draft on Reactor Temperatures

Rob,

Jeff Binder, who is working with John E. Kelley, (both copied) helped out by supplying that information and reviewing the paper. He said that DOE's calculations were very close to NRC's. The number DOE had was 250 days but I rounded that out to say "estimated nine months" based on "preliminary calculations". That gave the policy makers the sense that this was not a short-term (2-3 week problem) but the danger of fuel melting further wasn't something that would last for many years.

Thanks,
Jon

-----Original Message-----

From: Versluis, Rob [mailto:ROB.VERSLUIS@nuclear.energy.gov]
Sent: Wednesday, March 30, 2011 5:48 PM
To: Kreykes, Jon
Cc: Luksic, Andy; Versluis, Rob (HQ)
Subject: RE: DOE Draft on Reactor Temperatures

NRC RST has an action item to review the "DOE draft on reactor temperatures". I am an NE staff member embedded at the NRC Incident Response Center Reactor Safety Team. I have offered to assist in tracking down the calculation on which the document's conclusion is based. Could one of you put me in touch with the right person or, better, provide the calculation itself?

Thanks,

Rob Versluis, DOE NE-71, 301-903-1890 (o) (b)(6) (m)

From: RST01 Hoc
Sent: Wednesday, March 30, 2011 5:18 PM
To:

(b)(6)

Subject: *** Update INPO ERC Technical Team Proposal for Rev. 1 to the RST Assessment

Importance: High

All,

INPO has needs to make a few last minute changes to the proposal attached to the e-mail sent out at 1708 EDT. An updated version will be distributed prior to the 1900 EDT conference call. Please refer to this version for the conference call. Thanks.

Greg
RST Coordinator

From: RST01B Hoc
Sent: Wednesday, March 30, 2011 5:05 PM
To: Golub, Sal; Caponiti, Alice
Subject: RE: ***UPDATE Rev1 Proposal to RST Assessment ***

Got it and passed it on here.

Rob Versluis, DOE NE-71, 301-903-1890 (o) (b)(6) (m)

From: Golub, Sal [mailto:sal.golub@nuclear.energy.gov]
Sent: Wednesday, March 30, 2011 4:53 PM
To: RST01B Hoc; Caponiti, Alice
Subject: RE: ***UPDATE Rev1 Proposal to RST Assessment ***

Alice and I will be on the call. She is providing the analysis by separate email

From: RST01B Hoc [mailto:RST01B.Hoc@nrc.gov]
Sent: Wednesday, March 30, 2011 4:49 PM
To: Caponiti, Alice; Golub, Sal
Subject: FW: ***UPDATE Rev1 Proposal to RST Assessment ***
Importance: High

Are you going to call in to discuss DOE comments? The oxygen comment refers to an attached DOE analysis but no analysis is included.

Rob Versluis, DOE NE-71, 301-903-1890 (o) (b)(6) (m)

From: RST01 Hoc
Sent: Wednesday, March 30, 2011 4:32 PM
To: (b)(6)

(b)(6)

Cc: RST07 Hoc; RST01B Hoc; RST03 Hoc
Subject: ***UPDATE Rev1 Proposal to RST Assessment ***
Importance: High

All,

The draft proposal scheduled to be distributed by INPO by 1600 EDT, shall now be distributed at **1700 EDT**. The teleconference scheduled for 1700 EDT, is now scheduled at **1900 EDT**.

As a reminder the bridge line is 800-772-3842, passcode (b)(6)

Thanks,

Greg
RST Coordinator

From: Caponiti, Alice <Alice.Caponiti@nuclear.energy.gov>
Sent: Wednesday, March 30, 2011 4:45 PM
To:

(b)(6)

Subject: RE: RST Comments on RST Assessment
Attachments: O2 writeup - farmer.pptx

All:

Attached is the DOE analysis on a bounding estimate for O2 concentration referenced in one of the DOE comments.

Alice Caponiti

From: Golub, Sal
Sent: Wednesday, March 30, 2011 3:46 PM
To:

(b)(6)

(b)(6)

Subject: RE: RST Comments on RST Assessment

A few additional comments from DOE-NE for discussion at 5:00 pm

From: RST01 Hoc [mailto:RST01.Hoc@nrc.gov]
Sent: Wednesday, March 30, 2011 3:32 PM
To:

(b)(6)

(b)(6)

Subject: FW: RST Comments on RST Assessment

FYI- INPO Comments to Rev1 Proposal to RST Assessment

Additionally, we welcome any additional comments to prepare discussion points.

Thanks,

Greg

RST Coordinator

From: RST08 Hoc
Sent: Wednesday, March 30, 2011 2:10 PM
To: RST01 Hoc
Subject: RST Comments on RST Assessment

Here are the RST assessment document from INPO.

Mike

Mike Brown
Reactor Safety Team

Bounding estimated of O₂ Concentration in Unit 1 (3/27)

- Sources –
 - Initial O₂ concentration prior to accident (2 vol %)
 - Boiling of oxygen-saturated water (5 C inlet temperature; worst case)¹: ~ 12.8 mg/kg
 - Radiolysis: maximum possible for air-saturated water in high rad field² (~ 8 mg/kg)
- Total possible O₂ production from water injection is 20.8 mg/kg
- For Unit 1, based on estimated water injection 7950 MT (absolute upper bound estimate), O₂ brought into system by dissolved gases and radiolysis is ~ 165.4 kg (5,167 moles)
 - Remaining free volume in Unit 1 estimated as 3500 - 5000 m³; corresponding initial O₂ concentrations (2 vol %) are 2961 – 4230 moles.
- Corresponding partial pressure of O₂ in gas space is thus 44-54 mBar, or 4.4 to 5.4 vol %.
 - In reasonable agreement with quantitative estimates provided by GE, and qualitatively consistent with KAPL and Bettis estimates.
- Worst case estimates have reached 5 vol % threshold; recommend to inert prior to venting if possible.

¹<http://www.ecy.wa.gov/programs/wq/plants/management/foysmanual/dissolvedoxygen.html>

²http://www.nap.edu/openbook.php?record_id=9263&page=128#p2000a50a9960128001

From: RST01B Hoc
Sent: Wednesday, March 30, 2011 4:03 PM
To: RST01 Hoc; RST08 Hoc; RST07 Hoc
Subject: FW: Input on SFP measurement options from Secretary Chu and Science Council
Attachments: Measuring Level in SFP v2 AKC comment.doc

Importance: High

fyi

Rob Versluis, DOE NE-71, 301-903-1890 (o) (b)(6) (m)

-----Original Message-----

From: Versluis, Rob [mailto:ROB.VERSLUIS@nuclear.energy.gov]
Sent: Wednesday, March 30, 2011 3:52 PM
To: RST01B Hoc
Subject: FW: Input on SFP measurement options from Secretary Chu and Science Council
Importance: High

Rob Versluis, DOE NE-71, 301-903-1890 (o) (b)(6) (m)

-----Original Message-----

From: Golub, Sal
Sent: Wednesday, March 30, 2011 3:50 PM
To: 'RST01 Hoc'
Cc: Versluis, Rob; Kelly, John E (NE); Larzelere, Alex; Binkley, Steve; Aoki, Steven
Subject: Input on SFP measurement options from Secretary Chu and Science Council
Importance: High

Some suggestions from Sec. Chu and his Science Council to pass on to the DART team.

Sal Golub, PMP
Associate Deputy Assistant Secretary
for Nuclear Reactor Technologies (NE-7)
Tel: 301-903-1636
Cell: (b)(6)
Fax: 301-903-0180
sal.golub@hq.doe.gov

From: RST01B Hoc
Sent: Wednesday, March 30, 2011 3:43 PM
To: alice.caponiti@nuclear.energy.gov
Subject: FW: New DOE participant to 11am industry consortium call

Rob Versluis, DOE NE-71, 301-903-1890 (o) (b)(6) (m)

From: RST01 Hoc
Sent: Wednesday, March 30, 2011 2:53 PM
To: RST01B Hoc
Subject: RE: New DOE participant to 11am industry consortium call

Done

From: RST01B Hoc
Sent: Wednesday, March 30, 2011 12:48 PM
To: RST01 Hoc
Cc: RST01B Hoc; alice.caponiti@nuclear.energy.gov; sal.golub@nuclear.energy.gov; Versluis, Rob
Subject: New DOE participant to 11am industry consortium call

Please add Alice Caponiti to your distribution. Alice will follow the RST Assessment revisions and handle any DOE issues that come up and follow up any questions the team may have for DOE or the Labs.

Rob Versluis, DOE NE-71, 301-903-1890 (o) (b)(6) (m)

From: RST01B Hoc
Sent: Wednesday, March 30, 2011 12:51 PM
To: sal.golub@nuclear.energy.gov
Cc: alice.caponiti@nuclear.energy.gov; alex.larzelere@nuclear.energy.gov; Versluis, Rob
Attachments: Agenda for Industry Consortium Daily Call (NOTE TIME CHANGE to 2000 HRS DAILY)

Sal, I think this is the call you asked me about – now moved to 8 pm. You are on the invitation list. I am not planning to participate.

Rob Versluis, DOE NE-71, 301-903-1890 (o) (b)(6) (m)

From: RST01B Hoc
Sent: Wednesday, March 30, 2011 12:44 PM
To: RST01 Hoc
Subject: FW: Telephone Discussion
Attachments: Success pathREV3E.pptx; ATT00001.txt

fyi

Rob Versluis, DOE NE-71, 301-903-1890 (o) (b)(6) (m)

-----Original Message-----

From: Versluis, Rob [mailto:ROB.VERSLUIS@nuclear.energy.gov]
Sent: Wednesday, March 30, 2011 12:41 PM
To: RST01B Hoc
Subject: FW: Telephone Discussion

Rob Versluis, DOE NE-71, 301-903-1890 (o) (b)(6) (m)

-----Original Message-----

From: Peltz, James On Behalf Of Kelly, John E (NE)
Sent: Wednesday, March 30, 2011 11:21 AM
To: DL-NERT-All
Subject: FW: Telephone Discussion

-----Original Message-----

From: 尾本 彰 [mailto:(b)(6)]
Sent: Tuesday, March 29, 2011 9:09 AM
To: Kelly, John E (NE)
Cc: Kondo Shunsuke.; SCHU; Binkley, Steve; Aoki, Steven; Adams, Ian; Lyons, Peter
Subject: Telephone Discussion

Dear John,

I am sending the following information that may benefit tomorrow morning's conference call. Since I did not participate in the last Monday morning's conference call, I am afraid I might be addressing a different and too much technical issue.

In my view, key technical issues would be;

- 1) Avoiding spill-over of contaminated water to the sea by inventory control in feed & bleed operation and others,
- 2) Avoiding hydrogen explosion in the reactor and containment (Sandia paper helps),
- 3) Assessment of damage status of Spent Fuel Pool (1F3 and 4), and finally
- 4) Establishing long-term stable condition, especially for cooling.

(b)(4)(b)(5)



Best,
akira OMOTO (Commissioner, AEC)

On 2011/03/28, at 4:45, Lyons, Peter wrote:

> To all participants in the telephone call (time to be confirmed
by Professor Kondo)

>

> USA: 877-989-3817

>

> International: 203-986-9225

>

> Participant Code: (b)(6) followed by the #

>

> Host Code: (b)(6) followed by the #

>

> -----Original Message-----

> From: Lyons, Peter

> Sent: Sunday, March 27, 2011 3:30 PM

> To: 'shunsuke.kondo@cao.go.jp'

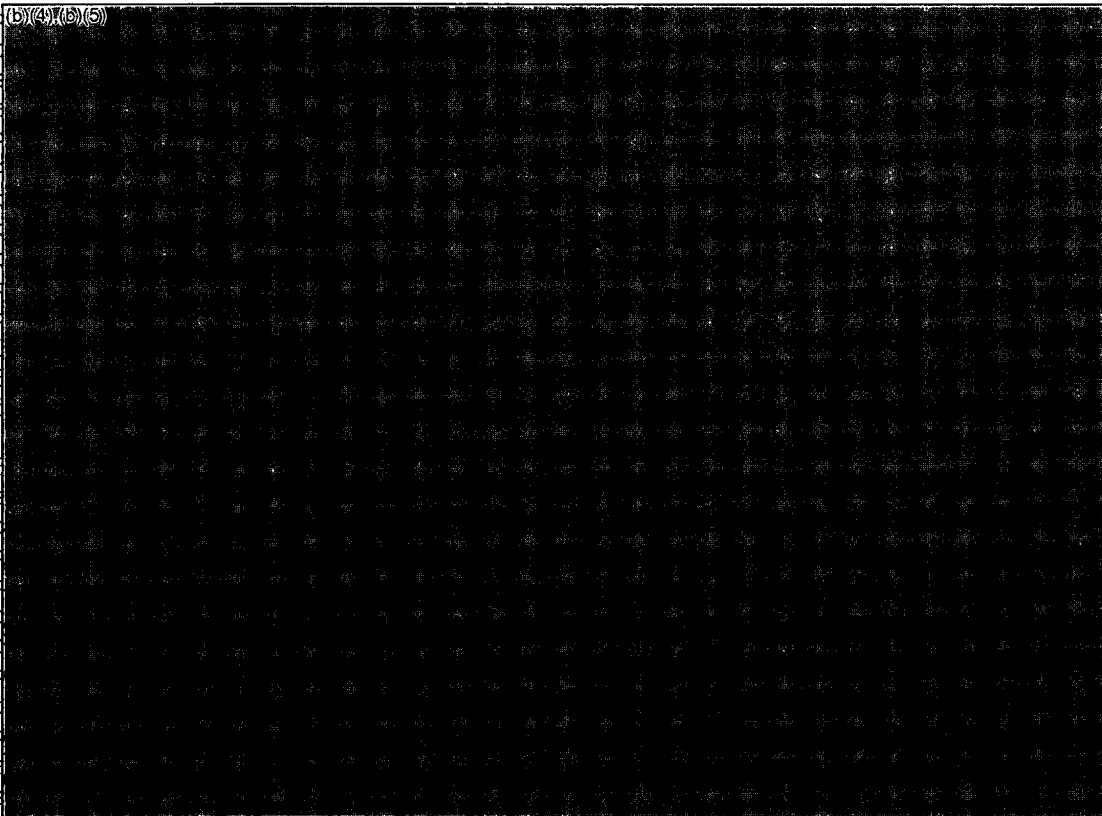
> Cc: SCHU; akira.omoto@cao.go.jp; Binkley, Steve; Kelly, John E
(NE); Aoki, Steven; Adams, Ian

> Subject: Request for Telephone Discussion

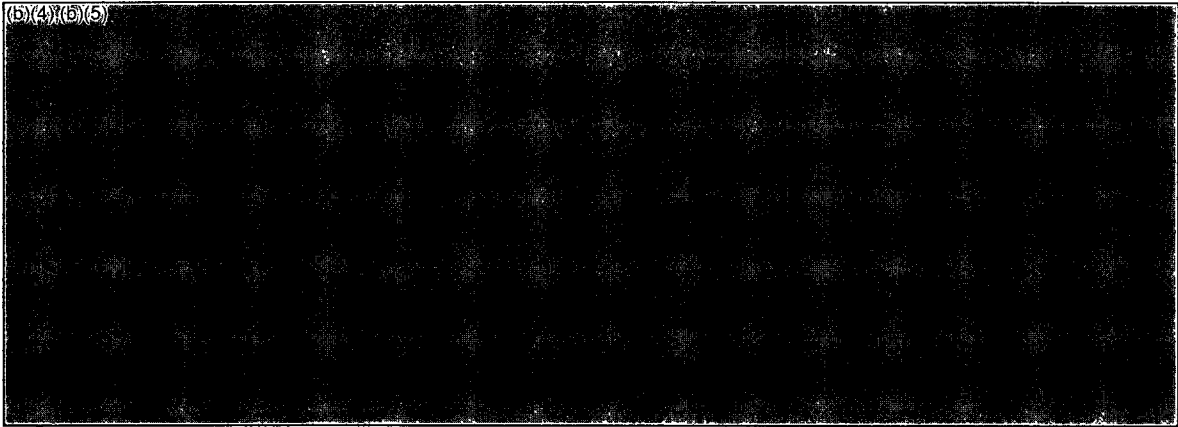
>

> Dear Professor Kondo

(b)(4)(b)(5)



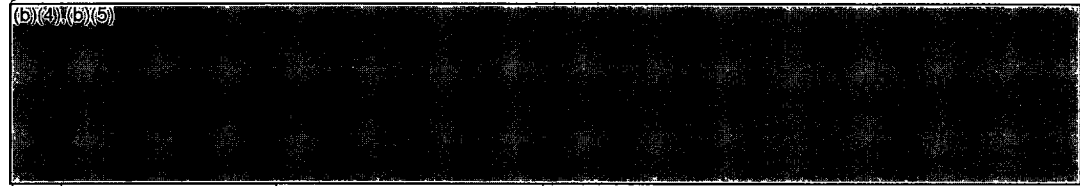
(b)(4)(b)(5)



> Very best regards
> Pete
>
> -----Original Message-----
> From: shunsuke.kondo@cao.go.jp
[mailto:shunsuke.kondo@cao.go.jp]
> Sent: Wednesday, March 23, 2011 7:55 PM
> To: Lyons, Peter
> Cc: SCHU; Poneman, Daniel; Connery, Joyce;
akira.omoto@cao.go.jp
> Subject: Hydrogen

> Dear Pete

(b)(4)(b)(5)



>
> Yours,
> Shunsuke

=====
=====

>
> Dfinition of the problem
>
> 1. Status of the reactor (1Fukul,2 and 3)
> Currently, seawater is continuously injected to the RPV
boundary through CS (unit 1) or LPCI (unit 2 and 3) lines at a
speed of around 10-15 Ton/hr. Water level close to TAF level (2/3
of fuel height covered) must have been achieved already even
though the integrity of the RPV boundary may be lost and core
fuel would have lost its integrity.
> Since the water is supplied by non-conventional method (Fire

Engine and Seawater), stable and sustainable core makeup and cooling method must be established while minimizing risks arising from potential hydrogen deflagration/detonation inside the containment.

> In reality, the hydrogen explosion presumably occurred at reactor building top floor at 1F1 and 3 indicates hydrogen leaked from containment penetration (airlocks, flanges, electric penetrations exposed to high pressure and temperature crated a condition of excessive leakage) or via containment vent path had accumulated outside of the containment and detonated.

> Containment re-inerting by injection of nitrogen is being studied by TEPCO.

> Restoration of electricity (already power is available to power centers but replacement of pump motors such as Make-up Water system pump motor at a harsh (in term of radiation) environment is causing delay of field work). Use of portable water from nearby dam is planned and onsite receiving tank has already received this water. Restoration of the supply line to tanks such as Condensate Storage Tank is planned by again in a harsh environment. Once fresh water supply is secured, seawater is to be replaced by fresh water.

>

(b)(4)(b)(5)

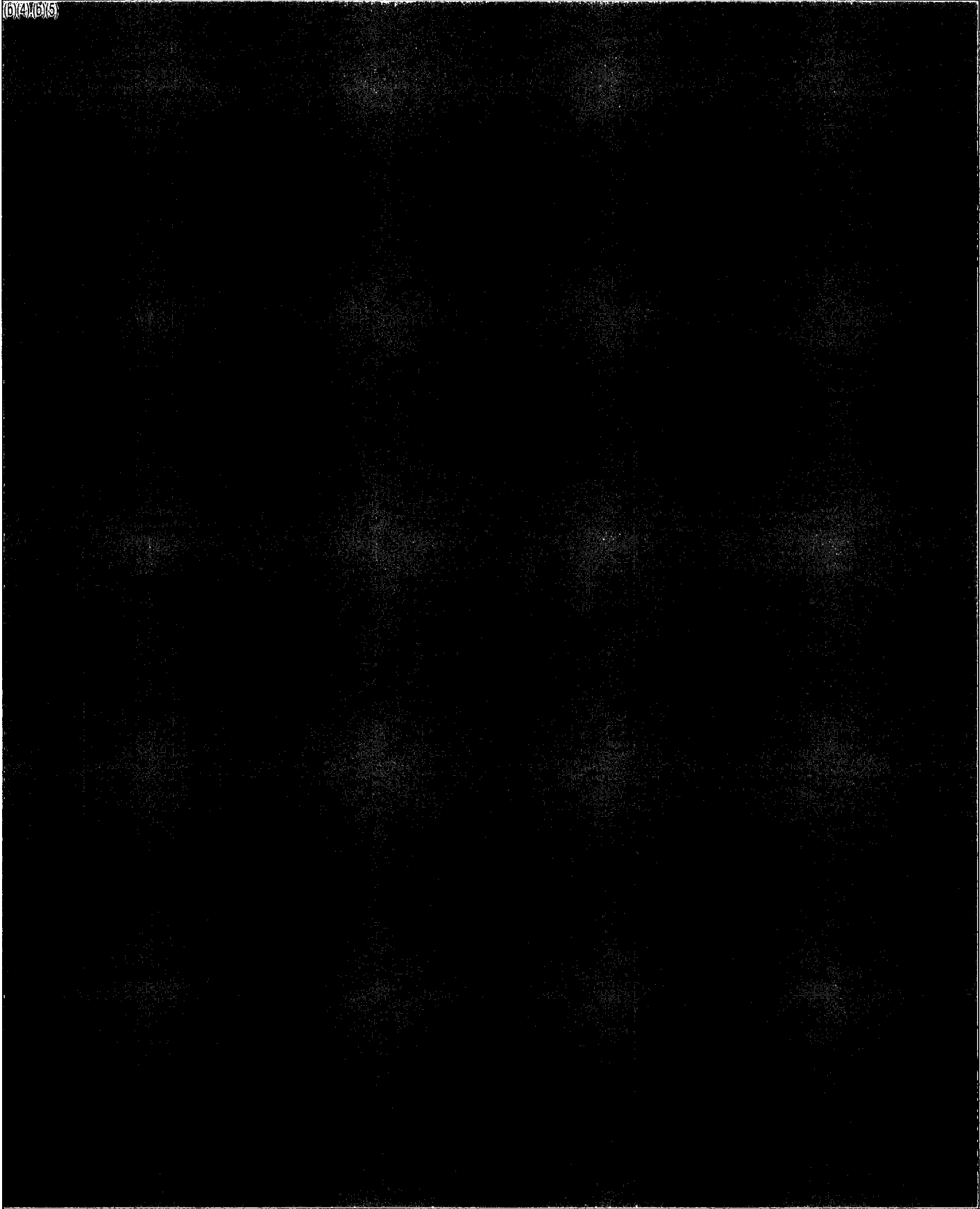
(b)(4)(b)(5)

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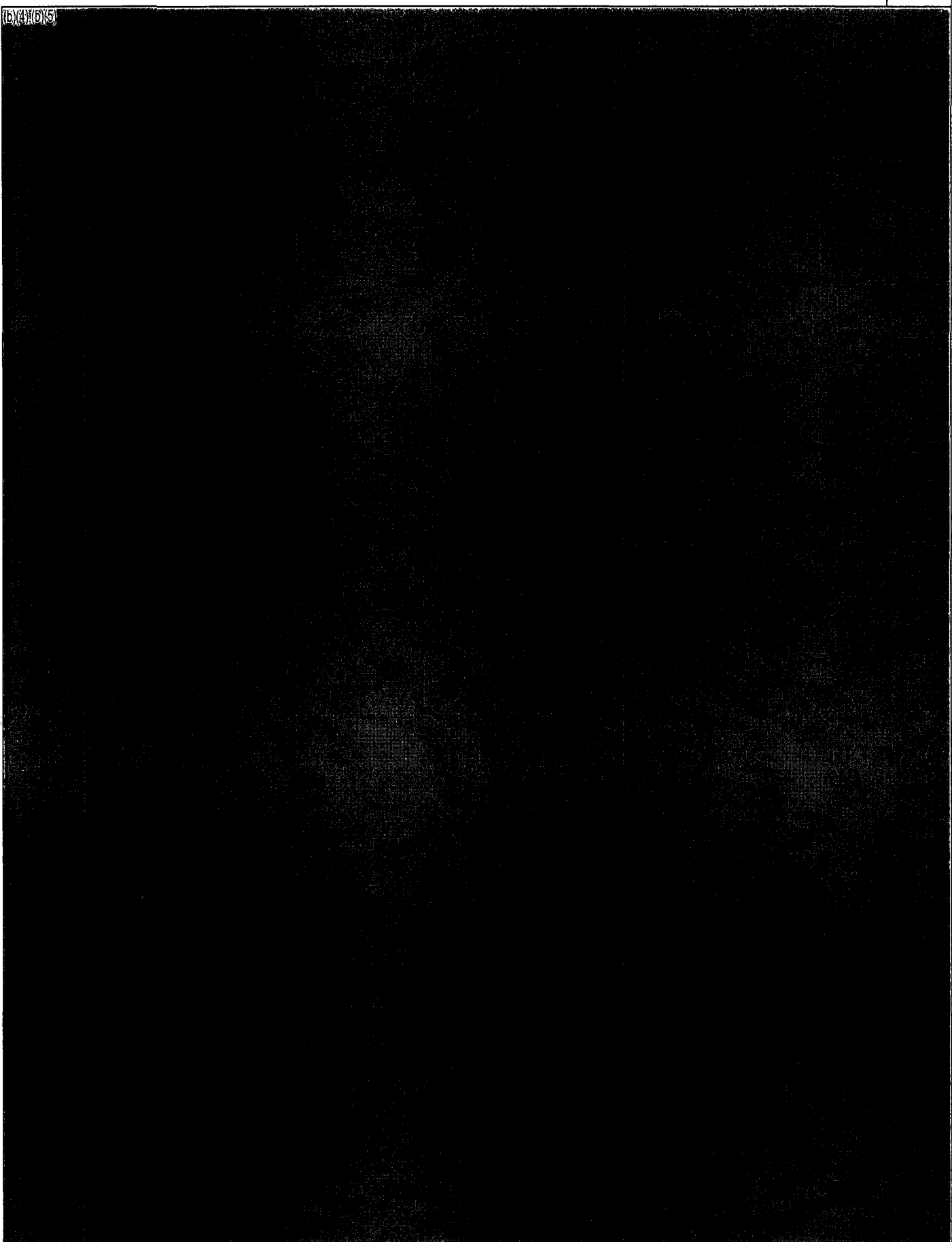
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(b)(4)(D)(5)

(b)(4)(b)(5)



(b)(4)(b)(5)



Water inventory control

(b)(4)(b)(5)



From: RST01 Hoc
Sent: Wednesday, March 30, 2011 11:17 AM
To:

(b)(6)

Subject: FW: 1100 RST Meeting Agenda - 03-30-2011
Attachments: 1100 RST Meeting Agenda - 03-30-2011.doc

From: Larsen, Carl B. (INPO) [mailto:LarsenCB@INPO.org]
Sent: Wednesday, March 30, 2011 10:15 AM
To: INPOERCTech; RST01 Hoc
Subject: RE: 1100 RST Meeting Agenda - 03-30-2011

Sorry, Please use this version with our new "Restricted Distribution" message.

Thanks,
Carl

From: Larsen, Carl B. (INPO)
Sent: Wednesday, March 30, 2011 10:12 AM
To: INPOERCTech; 'RST01 Hoc'
Subject: 1100 RST Meeting Agenda - 03-30-2011

Here is the meeting agenda for our 1100 meeting this morning. Please provide to all call-in parties.

Thanks!
Carl Larsen
INPO ERC Technical Coordinator

From: RST01 Hoc
Sent: Wednesday, March 30, 2011 10:14 AM
To:

(b)(6)

Subject: FW: Discussions for 1100 EDT Call

From: Weir, David K. (INPO) [mailto:WeirDK@inpo.org]
Sent: Wednesday, March 30, 2011 8:04 AM
To: INPOERCTech; GE.HitachiNuclearResponseTeam@ge.com; EventResponse@epri.com; RST01 Hoc; Modeen, David
Cc: Berko, David E (INPO); Kerns, Matthew T. (INPO)
Subject: Discussions for 1100 EDT Call

Based on the 0300EDT phone call – the following items are expected to be discussed at the 1100EDT Phone Call

1. Review draft revision of RST document. Items of concern include priorities of actions in the RST and how they relate to the SAMGs.
 - a. Restoration of nitrogen purge to allow inerting versus venting as necessary to maintain integrity
 - b. GE comments on inerting/gas concentration calculations
 - c. Flood up priority
2. Unit 4 Spent Fuel Pool
 - a. Conflicting information over actual level in SFP
 - b. Structural concerns over SPF and adding water
3. Concern over whether some recommendations are bypassing the industry consortium
 - a. DOE Secretary Chu was at Millstone yesterday and discussed several recommendations with GE
 - b. During the phone call it was indicated that Millstone had follow-up actions

D. Kirk Weir

Senior Evaluator
Equipment Reliability
INPO

(770) 644-8374 Office

(b)(6) Cell

WeirDK@inpo.org

Mobile email: dweir@scana.com

From: Versluis, Rob <ROB.VERSLUIS@nuclear.energy.gov>
Sent: Wednesday, March 30, 2011 9:33 AM
To: RST01 Hoc; RST01B Hoc
Subject: FW: Some information that may be useful

FYI

Rob Versluis, DOE NE-71, 301-903-1890 (o) (b)(6) (m)

-----Original Message-----

From: Peltz, James On Behalf Of Kelly, John E (NE)
Sent: Wednesday, March 30, 2011 9:28 AM
To: DL-NERT-All
Subject: FW: Some information that may be useful

-----Original Message-----

From: 川野 晃 [mailto:kawano.akira@tepco.co.jp]
Sent: Wednesday, March 30, 2011 9:01 AM
To: akira.omoto@cao.go.jp
Cc: Lyons, Peter; SCHU; Binkley, Steve; Kelly, John E (NE); Aoki, Steven; Adams, Ian; yahagi.kimitoshi@tepco.co.jp; shunsuke.kondo@cao.go.jp; ichii-naoto@meti.go.jp
Subject: Re: Some information that may be useful

Dear DOE experts,

The following information on our current plant status and the activities with NRC is for your reference.
I hope it would somehow be useful for you.

Also some of your requested information would be introduced from Mr.Yahagi or myself in the telephone conference tomorrow.

Many thanks

Akira Kawano
TEPCO

Plant status:

Parameter:

Unit 1,2,3 and 4: reactor pressure and water level is stable Unit 1: vessel inside temperature is relatively high, Ex.
Feedwater nozzle: 267 °C, 130 °C as of at 18:00 March 30, because water injection is reduced to the level of equivalent with decay heat to avoid too much water leakage out to the T/B. Now trying to find an optimized point.

Reactor pressure is relatively higher than other units, 0.342MPa(A), 0.484MPa(B) Unit 2: Yesterday vessel inside temperature went up, Ex. Feedwater nozzle: more than 200 °C, and increased the injection flow from 117 l/min up to 133 l/min

Injection to reactor core:

Unit 1,2 & 3: all cores are injected water by temporary motor driven pumps

Unit 1:133 l/min Unit 2:117 l/min Unit 3:116 l/min

Injection to SFP:

Unit 1,3 & 4: SFP s are injected fresh water, instead of sea water, by concrete trucks with arms that can aim at SFP precisely Unit 2: SFP is injected fresh water using FPC line by motor driven pump

U.S. Military & NRC Support:

Hardware:

1. High capacity pumps, hoses and 2 barges to supply fresh water to the tank from which fresh water is injected into the reactor core and SFP

- the barge No1 started to sail from Onahama port to 1F site 17:05 yesterday and it will start to supply fresh water to the tank in the afternoon today at earliest.

- the barge No2 is now at Onahama port and the work for installing pumps and tank will start tomorrow

- after completing the pump pre-operation test the barge No2 will leave Onahama for 1F site within April 1.

2. Radiological Control ??? already been proposed but not yet asked

- radiation monitors (beta, gamma, alpha, neutron)

- personnel protection (disposable tyvec coveralls, disposable breathable rain suits, disposable paper and rubber shoe covers, etc.)

Software:

Our chairman Katsumata asked NRC chairman Jaczko to support TEPCO in the following technical areas on March 29:

1. discharge (pumping out) of high radiation dose water (from T/B, condenser, CST to SPT) 2. Salt accumulation at the bottom of core (however, currently fresh water is supplied to all the 6 cores and salt accumulation is stopped) 3. residual heat removal 4. recovery of measurement & monitoring function of core and SFP 5. how to shield radioactive steam coming out from R/B. In other words how to evaluate the influence on the local areas around the NPP.

6. recovery of pumps and their electric sources which have cooling function.

NRC-NISA-TEPCO meeting @11:00 everyday

From: RST08 Hoc
Sent: Wednesday, March 30, 2011 8:58 AM
To: RST01B Hoc
Subject: FW: Salt Water Corrosion Rates

From: Brown, Michael
Sent: Tuesday, March 29, 2011 4:50 PM
To: RST01 Hoc; RST08 Hoc; RST07 Hoc
Subject: FW: Salt Water Corrosion Rates

FYI for salt water corrosion rates.

Mike

From: Shaffer, Steve
Sent: Tuesday, March 29, 2011 2:08 PM
To: Brown, Michael; Haagensen, Brian
Subject: Salt Water Corrosion Rates

Mike:

Millstone uses 5-10 mil/year corrosion rates for carbon steel. The higher rate would be for piping that isn't always maintained full, i.e. higher oxygen levels.

I hope this helps.

Steve

From: RST01B Hoc
Sent: Wednesday, March 30, 2011 8:06 AM
To: Versluis, Rob
Subject: FW: Request for Comment
Attachments: Reactor Building Ability to Support Flooding.docx

Rob Versluis, DOE NE-71, 301-903-1890 (o (b)(6) (m)

From: RST01 Hoc
Sent: Tuesday, March 29, 2011 9:55 PM
To: (b)(6)

(b)(6)

Cc: joel.pero.contractor@unnpp.gov; lela.doyle.contractor@unnpp.gov
Subject: Request for Comment

Attached is an assessment performed by the structural engineers of our Japanese response team regarding the ability of the reactor building structure to support additional loads of water due to flooding of primary containment and the reactor vessel. Please consider whether this assessment should change the existing RST caution for seismic considerations.

This is not an immediate issue, but we should reflect any additional comments in the next RST assessment.

Respectfully,

Greg
RST Coordinator

Question:

Can the reactor building structure support additional loads of water due to flooding of primary containment and reactor vessel..

Response:

Item #1: Drywell Flooding

The drywell containment is 1-1/2 inch thick steel plate. The bottom of the drywell steel containment is resting directly on concrete. The upper part of the drywell is enclosed by thick (5-7 feet thick) concrete shield walls. There is approximately 2 inch gap between the drywell and shield walls. The foundation more that 30 feet thick.

There is no information about the condition of concrete walls or floor after the earthquake/tsunami event. However, it is unlikely that these walls or foundation are severely damaged or cracked. A quick review of the videos or photographs is inconclusive.

Addition of water to flood the drywell containment will impose gravity loads. These loads will be directly transferred to the concrete foundation. The concrete foundation is thick and can support these loads.

In the unlikely event of a new earthquake while the drywell is flooded, additional horizontal loads will be imposed on the drywell steel. The existing structure has not been analyzed for these loads. However, in the worst case scenario, drywell vessel may deflect 2 inches and come into with the thick concrete shield walls. The shield walls have significant capacity to resist horizontal loads to be imposed by the drywell during this unlikely event. Furthermore, the horizontal ground motion detected during the recent earthquake were about the same or less than design basis. Any subsequent earthquake in future during the short time the drywell is flooded is not likely to be of the same magnitude as the March 11, 2011 earthquake.

The reactor vessel is supported on a pedestal inside the drywell. This pedestal is designed for design basis earthquake loads. Once the drywell and reactor vessel are flooded, the horizontal forces transferred to the pedestal are not likely to increase because of the damping effect of the water inside the drywell.

In summary, flooding of drywell and reactor vessel is not likely to compromise their structural integrity.

Item # 2 - Suppression Pool (Torus)

The suppression pool (torus) has a diameter of 29.5 foot diameter and major diameter of 109.9 foot diameter. Bottom half of the torus is full of water during normal plant operations. If the torus is flooded to the top, it will increase gravity loads on the 5/8" to 3/4" thick torus steel and associated supports. This will not affect the structural integrity of the torus or associated steel supports.

During an earthquake, the torus will be subjected to additional horizontal loads due to an increase in total volume of water. However, due to overall rigidity and geometrical configuration, it is not likely to affect the structural integrity of the torus and associated supports.

From: Versluis, Rob <ROB.VERSLUIS@nuclear.energy.gov>
Sent: Wednesday, March 30, 2011 6:52 AM
To: RST01 Hoc; RST01B Hoc
Subject: Fw: NEGTN02-#205028-v25I-STATUS_OF_FUKUSHIMA_DAIICHI_REACTORS
Attachments: NEGTN02-#205028-v25I-STATUS_OF_FUKUSHIMA_DAIICHI_REACTORS.docx

Fyi
Rob Versluis +1-301-903-1890(o) (b)(6) (m)

From: Robinson, Brian
To: DL-NERT-All
Sent: Wed Mar 30 06:29:09 2011
Subject: NEGTN02-#205028-v25I-STATUS_OF_FUKUSHIMA_DAIICHI_REACTORS

Good morning,

Attached is the most up to date EOC/NE watch report.

Highlighted issues;

- Unit #1 temperature has reduced from 323 C to 299 C.
- Unit #2 temperature has increased by 23 C due to a reduction in H2O injection.
- H2O injection is a multivariable issue; condensers are full of H2O, which will have to be moved to other tanks, Unit # 1-3 trenches are being sandbag for containment, if necessary, H2O injection has been reduced (Unit #2) in order to address this issue.

BKR

<<NEGTN02-#205028-v25I-STATUS_OF_FUKUSHIMA_DAIICHI_REACTORS.docx>>

From: RST01B Hoc
Sent: Tuesday, March 29, 2011 4:56 PM
To: rob.versluis@nuclear.energy.gov
Subject: FW: ACTION: new communication protocol between NRC/RST and the Industry and federal partners providing support to DART
Attachments: RST-DART Daily Communication Coordination Rev 0.docx

-----Original Message-----

From: Versluis, Rob [mailto:ROB.VERSLUIS@nuclear.energy.gov]
Sent: Tuesday, March 29, 2011 3:46 PM
To: RST01B Hoc
Subject: FW: ACTION: new communication protocol between NRC/RST and the Industry and federal partners providing support to DART

-----Original Message-----

From: Peltz, James On Behalf Of Kelly, John E (NE)
Sent: Tuesday, March 29, 2011 9:34 AM
To: DL-NERT-All
Subject: FW: ACTION: new communication protocol between NRC/RST and the Industry and federal partners providing support to DART

-----Original Message-----

From: RST01 Hoc [mailto:RST01.Hoc@nrc.gov]
Sent: Monday, March 28, 2011 10:50 PM
To: RST01 Hoc; Huckaby, Thomas S.(INPO); RST03 Hoc; GE Hitachi; GEH.iccengineering@ge.com;

(b)(6)

Subject: ACTION: new communication protocol between NRC/RST and the Industry and federal partners providing support to DART

Attached is a new communication protocol that is intended to improve the communication between RST and the industry and other federal partners. This protocol should improve efficiency and effectiveness.

Fred Brown

On-shift RST Director

RST-DART Daily Communication Coordination
Revision 0, 3/28/11

(b)(5)

From: RST01B Hoc
Sent: Tuesday, March 29, 2011 3:11 PM
To: sal.golub@nuclear.energy.gov; alex.larzelere@nuclear.energy.gov;
johne.kelly@nuclear.energy.gov
Cc: rob.versluis@nuclear.energy.gov; bill.mccaughey@nuclear.energy.gov
Subject: FW: Summary of 3/29 1100 Call
Attachments: Notes from 11am meeting on 3_29_11.doc

Fyi, please distribute as desired.

Rob

From: RST01 Hoc
Sent: Tuesday, March 29, 2011 2:38 PM
To: RST01 Hoc; Huckaby, Thomas S (INPO); RST03 Hoc; GE Hitachi; GEH.iccengineering@ge.com;

(b)(6)

Subject: Summary of 3/29 1100 Call

Please find attached summary notes from 3/29 1100 call.

Notes from 11am meeting

Updates/Changes to RST Assessment letter

1.

2.

3.

(b)(5)

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From: Busby, Jeremy T. <busbyjt@ornl.gov>
Sent: Tuesday, March 29, 2011 1:01 PM
To: RST01B Hoc
Subject: Re: Corrosion crack growth rates

Thanks!

On 3/29/11 12:58 PM, "RST01B Hoc" <RST01B.Hoc@nrc.gov> wrote:

From: RST01 Hoc
Sent: Monday, March 28, 2011 10:10 PM
To: RST01 Hoc; Huckaby, Thomas S.(INPO); RST03 Hoc; GE Hitachi; GEH.iccengineering@ge.com;

(b)(6)

Subject: Corrosion crack growth rates

Attached is a file containing a staff paper on the effects of the salt water on the RPV and piping materials, including an estimate of corrosion crack growth rate of 0.02-0.1 in/day.

Also attached is a file containing an email from a professor who states that rapid stress corrosion cracking could occur at the rate of 0.8 cm/day.

If, or as, TEPCO considers throttling coolant injection, we will need to consider whether the salt in the system (with less purging) becomes a more immediate concern, and whether our RST Assessment should be modified to specifically address the concern.

This should be discussed during the 11:00 am call on Tuesday, 3/29/11.

Fred Brown,
RST on-shift Director

--

Jeremy T. Busby

Fuel Cycle and Isotopes Division
Oak Ridge National Laboratory
P.O. Box 2008

Oak Ridge, TN 37831-6138

Phone: 865 241-4622

Fax: 865 241-3650

Email: busbyjt@ornl.gov

-----Original Message-----

From: Per F. Peterson [<mailto:peterson@nuc.berkeley.edu>]

Sent: Sunday, March 27, 2011 5:25 PM

To: DL-NITsolutions

Subject: Fwd: reactor#3 and others

I am forwarding this email from Professor Tom Devine, a colleague in Materials Science and Engineering at UC Berkeley who has extensive experience in corrosion processes in light water reactor systems. He expresses strong concern about the likelihood of very rapid stress corrosion cracking in the reactor primary system (0.8 cm/day), given the high concentration of chloride in the reactor coolant. He believes that it is urgent to begin flushing salt water out of these systems. I think that it is worthwhile to take this concern seriously.

-Per

>Date: Fri, 25 Mar 2011 09:57:48 -0700

>Subject: reactor#3 and others

>From: devine@berkeley.edu

>To: Peterson@nuc.Berkeley.edu

>

>-----

>Per,

>

>I'm troubled by the report I just heard on CNN, which indicated that Co

>was in the

>ocean adjacent to the plant and in the water that burned the three

>workers. Apparently the workers were exposed to Co-containing water while

>in the turbine room. The presence of Co at these two locations suggests

>that water from the core is releasing into the ocean and into the turbine

>room.

>

>The cause of the leak(s) might be pipes that were cracked during the

>hydrogen explosions. Alternatively, the leak(s) might be due to corrosion

>and/or stress corrosion cracking. The possibility of corrosion and scc

>must be urgently addressed.

>

>The email that I sent to you one week

>ago was prompted by our parking-lot discussion in which you mentioned the
>amount of salt water that was being used to cool the reactors. My concern
>then was that the chloride would cause stress corrosion cracking of the
>stainless steel cladding that coats the inside of the RPV and of stainless
>steel piping that is part of the cooling system. I indicted that an upper
>limit SCC velocity of about 0.8 cm/day in stainless steel exposed to hot
>aqueous chloride. Hot aqueous chloride would severely corrode, and
>possibly crack, low alloy steel and carbon steel, especially if oxygen
>(from air) is also present.

>

>The only sure way of stopping SCC is to remove the stress. In this case
>removing the stress might not be possible because the highest stresses are
>most likely residual. Furthermore, the carbon steel and low alloy steel
>are susceptible to very high corrosion rates in high temperature aqueous
>chloride, so if cracks have penetrated the RPV cladding then corrosion of
>the low alloy steel is as much of a potential problem as is SCC.

>

>The steam lines going from the RPV to the turbine are carbon steel, so hot
>aqueous chloride can be expected to severely corrode and possibly crack
>the steam lines.

>

>At this point the best remedial action to take is to get rid of the salt.
>Probably the only way to do it is by dilution: flooding the reactor with
>salt-free water. In my view it is extremely urgent that the chloride be
>removed asap. Can you communicate this message to someone in authority?

>

>Tom

Per F. Peterson
Professor and Chair
Department of Nuclear Engineering
University of California
4153 Etcheverry Hall
Berkeley, California 94720-1730
peterson@nuc.berkeley.edu
Office: (510) 643-7749 Fax: (510) 643-9685
http://www.nuc.berkeley.edu/People/Per_Peterson

Background:

(March 26, 2011) As a result of the need to inject saltwater into the Fukushima Daiichi Units 1-3 reactor pressure vessels, there are growing concerns regarding the effect of the salt in the seawater on the vessel internals. The three units are BWR-with Mark I containments (similar to Dresden –Unit 1 and Quad Cities - Units 2 and 3). The licensee (Tokyo Electric Power Company, TEPCO) ceased injection of seawater on March 25th for Units 1 and 3 and on March 26th on Unit 2 and are now using fresh water. For some time they were injecting borated seawater on Units 1 and 3. Boric acid injection began on Unit 2 with the freshwater injection.

The industry, the Department of Energy (DOE) and the Office of Naval Reactors has provided input (see attached) regarding the effects. For the most parts these assessments indicate no concern, in the short term (i.e. days), regarding any reactor pressure vessel (RPV) structural failures (i.e. welds, etc...) as a result of a corrosion mechanism. However, last night RES received the attached e-mail from a Berkley professor concerned that the chloride concentration could result in a high corrosion rate (0.8 cm/day in stainless).

Question: Provide an assessment of the timeframe (i.e. days, weeks, months) for which structural failures of RPV and torus components due to stress corrosion cracking should be a focus. The more specificity that can be provided the better.

NRC staff response:

- General Comments:
 1. NRC staff concurs that seawater injection will cause corrosion degradation of stainless steel components, most likely at welds.
 2. Stress corrosion cracking of austenitic stainless steels in concentrated chloride-containing solutions such as concentrated seawater can progress rapidly 0.02-0.1 in/day (email attachment provides stress corrosion cracking data with references).
 3. **Best estimates for cracking are provided. Recognize that actual crack rates are highly dependent on the local environment and the staff has limited information.**
 4. Prioritization of concerns (timeliness of concern with respect to leakage from initiation of seawater injection):
 1. Stainless Steel Recirculation Piping (couple of weeks)
 2. Stainless Steel Reactor Pressure Vessel CRD Housing (couple of weeks)
 3. Stainless Steel External Core Spray Line (couple of weeks)
 4. Stainless Steel Internals/Spargers (days to couple of weeks)
 5. Torus & RPV not significant concerns in the short term (several weeks to months)
- Absent significant pressure or seismic loadings, leakage from cracks, pits, etc is more likely than a pipe rupture.
- Staff agrees that fresh water injection is beneficial, however, chloride SCC will not be immediately mitigated by injection of fresh water since crevices and cracks will retain chlorides.

- SCC cracking of austenitic stainless steel vessel internals will occur over time so that potential changes to core geometry from progressing SCC should be anticipated.
- Component Specific Concerns
 - 1 Stainless steel piping systems: (Recirculation & Core Spray)
 1. Assumptions:
 - Stress corrosion cracking rate of 0.03 in/day
 - Typical and bounding weld residual stress profiles
 - Temperature/Pressure profiles from available information
 - Preliminary Component Integrity Calculations:
 - Through-wall circumferential cracking:
 - ~2 weeks for a 0.5" thick pipe
 - ~4 weeks for 1" thick pipe
 - Note: many calculated circumferential cracks arrested prior to growing through-wall, but, may grow through-wall during a transient, e.g. additional seismic loading.
 - Low probability of occurrence for pipe rupture scenario
 - Leakage from these cracks more likely than rupture
 - Through-wall axial cracking:
 - Similar timeframe for leakage as circumferential cracking
 - Axial cracking more likely and widespread than circumferential cracking
 2. Stainless Steel Reactor Pressure Vessel CRD Housing:
 - Assumptions:
 - Same as stainless steel piping
 - Tensile yield stress through-wall
 - Preliminary Component Integrity Calculations:
 - ~2-3 weeks for a 0.565" (14mm) thick CRD housing
 - Higher likelihood of leakage than piping:
 - Higher concentration of salt
 - Location at the bottom of the vessel
 - Large of number of housings
 - High weld residual stresses
 3. Stainless Steel Internals/Spargers (days to couple of weeks)
 - Assumptions:
 - Same as stainless steel piping
 - Preliminary Component Integrity Assessment:
 - More likely than piping systems to be damaged by corrosion and thermo-mechanical loading from heating and environmental effects.
 - Concern is rated #3 because internals are not a barrier to fission product release, however, internals/spargers failures could increase core damage.

4. Torus & RPV:

- Less susceptible to stress corrosion cracking in salt water:
 - Carbon and Low Alloy Steels not stainless steel
- RPV stainless steel cladding (0.1875in (5mm) thick) is susceptible to stress corrosion cracking, however, RPV (~5in (~125mm) thick) is a low alloy steel and is less susceptible to stress corrosion cracking

Corrosion of the RPV could occur over longer time frames than stress corrosion cracking in stainless steel piping systems, e.g. months

Discussion: At issue is thermal shock and the associated crack propagation (not stress corrosion cracking) of any pre-existing flaws when cold water is injected into the RPV during times when these elevated temperatures are present. Evaluation for such high temperatures is beyond what has been evaluated in the U.S. for thermal shock scenarios.

In order to conduct a component integrity assessment, we think the following data would be very helpful (partial information is better than no information):

- RPV temperature vs. time history at various RPV locations
- Injection water temperature vs. time history.
- Injection water flow rate vs. time history.
- Injection water flow path into the RPV.
- RPV pressure vs. time history if available

Points of Contact: NRR/DCI – Robert Hardies, Matthew Mitchell; RES/DE – Al Csontos, Robert Tregoning, Darrell Dunn

Appendix A:

Stress Corrosion Crack Growth Rates of Stainless Steels in Chloride Solutions

Summary of measured stress corrosion crack (SCC) propagation rates for wrought austenitic stainless steels in chloride solutions. In general, the SCC crack growth occurs in the presence of tensile stress which occurs near welds

Alloy	Percent Cold Work	Solution	Temp, C (F)	K _I SCC MPa·m ^{1/2}	K _P SCC MPa·m ^{1/2}	SCC Growth Rate mm/day (in/day)	Reference
304 sensitized	0	22% NaCl	50C (122F)	N/A	Tested at 40 to 50	0.008 mm/day 0.00034 in/day	Speidel, 1981
304 sensitized	0	22% NaCl	80 C (176F)	N/A	Tested at 40 to 50	0.086 mm/day 0.0034 in/day	Speidel, 1981
304 sensitized	0	22% NaCl	105 C (221F)	N/A	Tested at 40 to 50	0.69 mm/day 0.027 in/day	Speidel, 1981
304L	0	22% NaCl	105C (221F)	20	30	0.52 mm/day 0.020 in/day	Speidel, 1981
304L	0	44% MgCl ₂	130C (266F)	8	12	5.2 mm/day 0.204 in/day	Speidel, 1981
316	0	0.03% NaCl	80C (176F)	5	7	0.53 mm/day 0.021 in/day	Tamaki et al., 1991
316	0	3% NaCl	80C (176F)	5	7	0.53 mm/day 0.021 in/day	Tamaki et al., 1991
316	0	44.7% MgCl ₂	154C (310F)	10	18	4.3 mm/day 0.17 mils/day	Dickson et al. 1980 (summarized by Newman and Mehta 1990)
316	25	44.7% MgCl ₂	154C (310F)	10	18	33 mm/day 1.3 in/day	Dickson et al. 1980 (summarized by Newman and Mehta 1990)
316	25	44.7% MgCl ₂	116C (241F)	10	18	5.2 mm/day 0.204 in/day	Russell and Tromans 1979 (summarized by Newman and Mehta 1990)

References

Tamaki, K., S. Tsujikawa, and Y. Hisamatsu, "Development of a new test method for chloride stress corrosion cracking of stainless steel in dilute NaCl solutions," *Advances in Localized Corrosion*. H.S. Isaacs, U. Bertocci, J. Kruger, and S. Smialowska, eds. Houston, TX. NACE: 207-214. 1990

Newman, R.C., and A Mehta, "Stress Corrosion Cracking of Austenitic Steels," *Environment Induced Cracking of Metals*. R.P. Gangloff and M.B. Ives eds. Houston, TX. NACE: pp. 489-509. 1990.

Speidel, M.O., "Stress Corrosion Cracking of Stainless Steels in NaCl Solutions," *Metallurgical Transactions*, Vol. 12A, pp. 779-789, May 1981.

Russell, A.J. and D. Tromans, *Metallurgical Transactions*, Vol 10A, pp. 1229-1238, 1979.

Tsujikawa, S., T. Shinohara, and Y. Hisamatsu, "The role of crevices in comparison to pits in initiating stress corrosion cracks of type 310 stainless steel in different concentrations of MgCl₂ solutions at 80 C," *Corrosion Cracking*. V.S. Goel, ed. Metals Park, OH: American Society for Metals (ASM): pp. 35-42. 1985.

Dickson, J.I., A.J. Russell and D. Tromans, *Can. Met. Quarterly*, Vol 19, pp. 161-167. 1980.

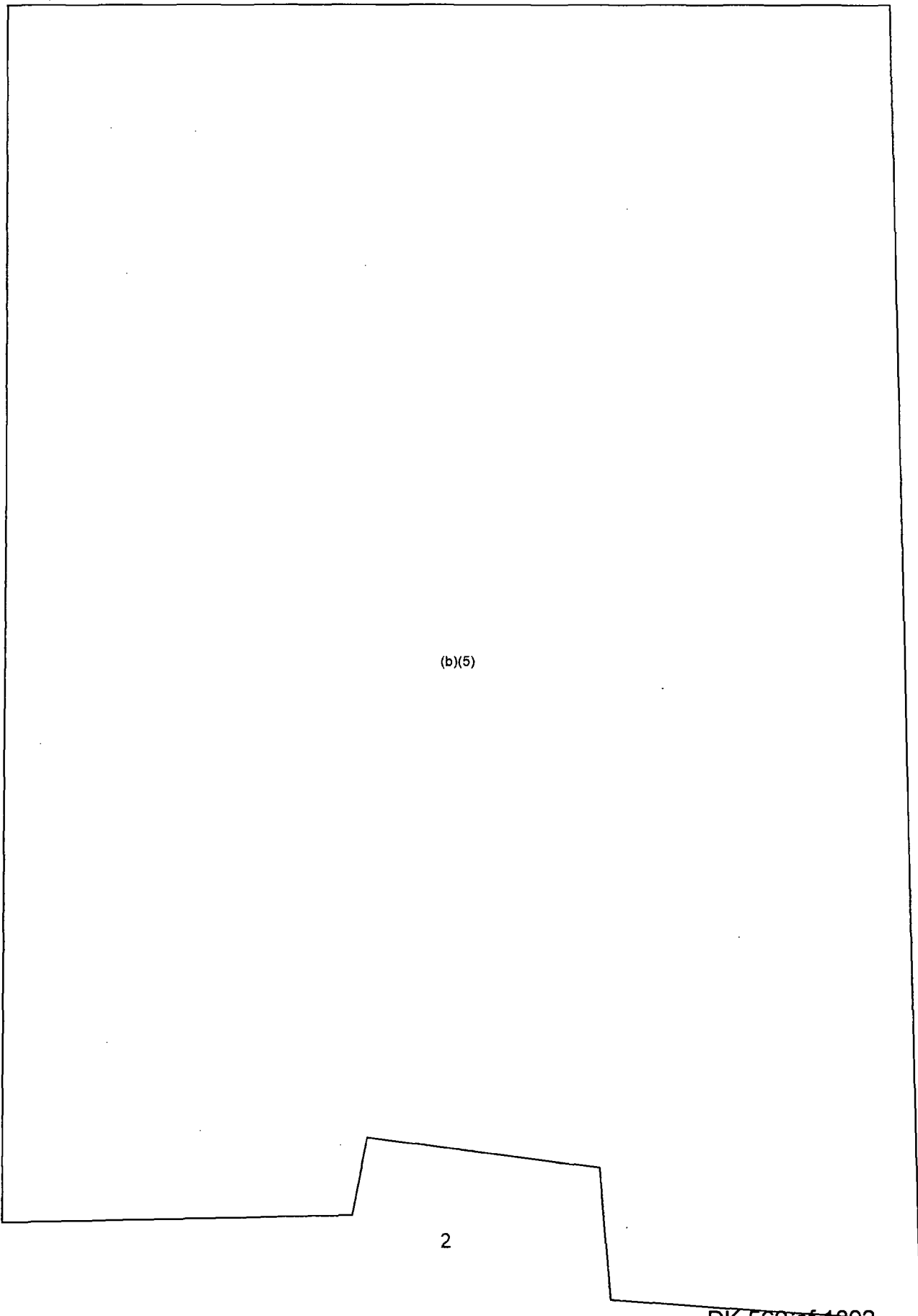
Truman, J.E. The influence of chloride content, pH and temperature of test solution on the occurrence of stress corrosion cracking with austenitic stainless steel. *Corrosion Science* 17: pp. 737-746. 1977.

From: RST01B Hoc
Sent: Tuesday, March 29, 2011 12:29 PM
To: RST01 Hoc

Rick Hasselberg,
Sr. Emergency Response Coordinator
Response Program Manager
Reactor Safety Team
Fuel Cycle Safety Team
Office of Nuclear Security & Incident Response
U.S. Nuclear Regulatory Commission
rick.hasselberg@nrc.gov
Office - 301-415-6419

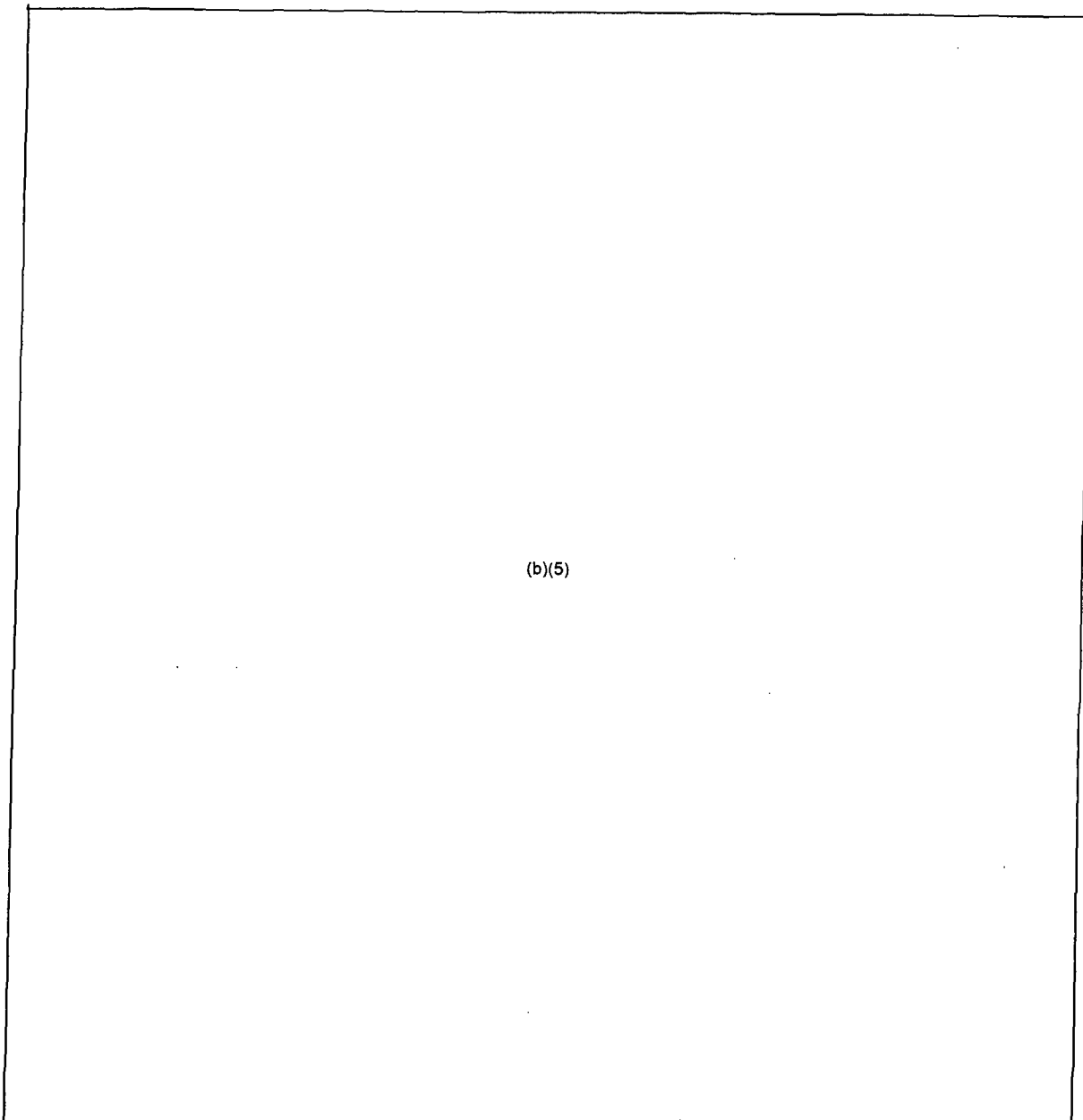
Regarding Review of Units 1 ~ 3 Cooling Methods (draft)

(b)(5)

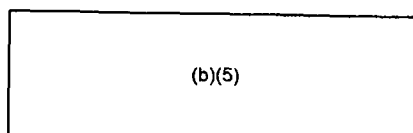


(b)(5)

(b)(5)



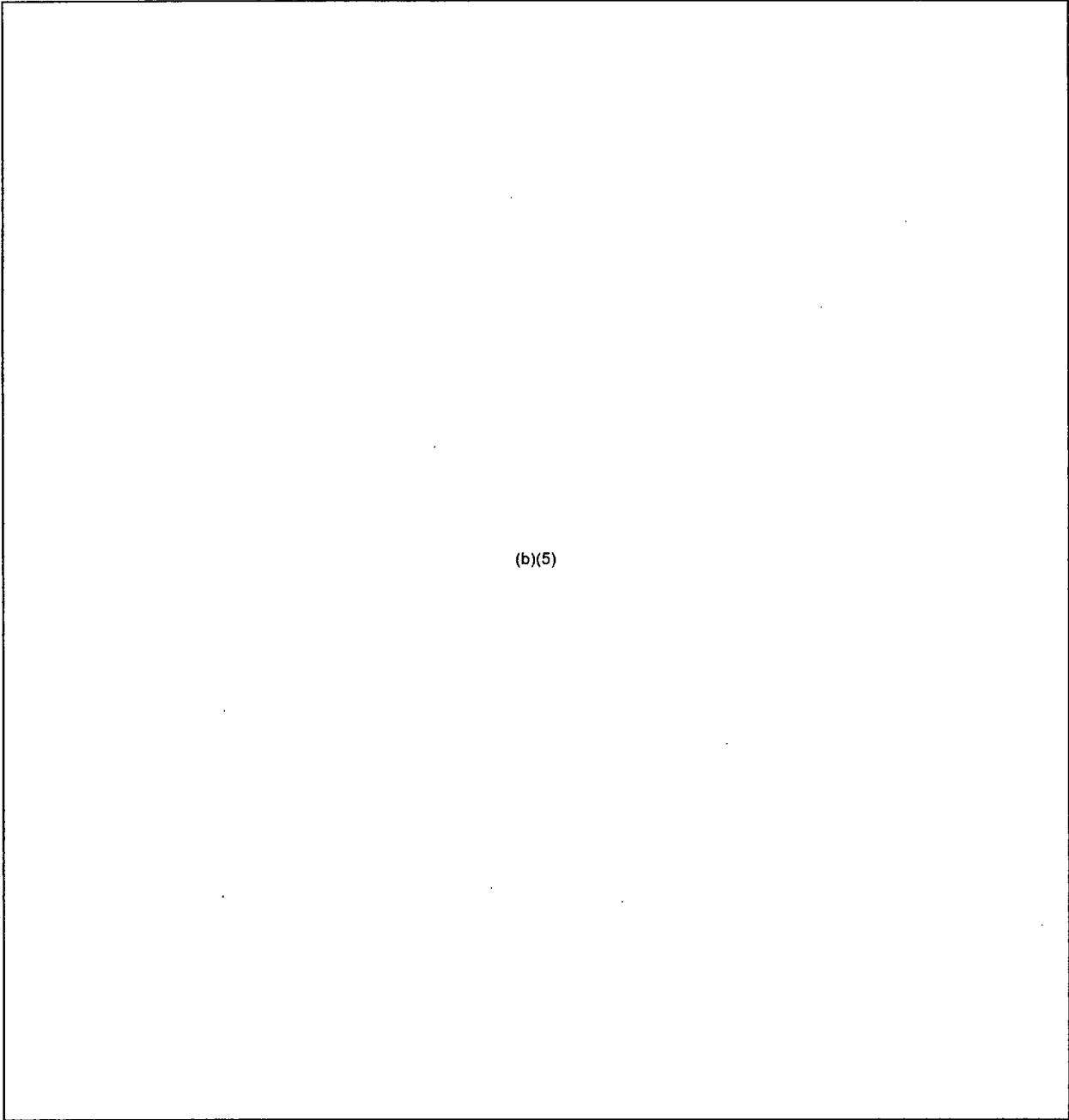
(b)(5)



(b)(5)

Industry Tech Group Conference Call Outline
Standing Call 1100 EDT
Use NRC bridge line (800)772-3842, pass code

(b)(6)

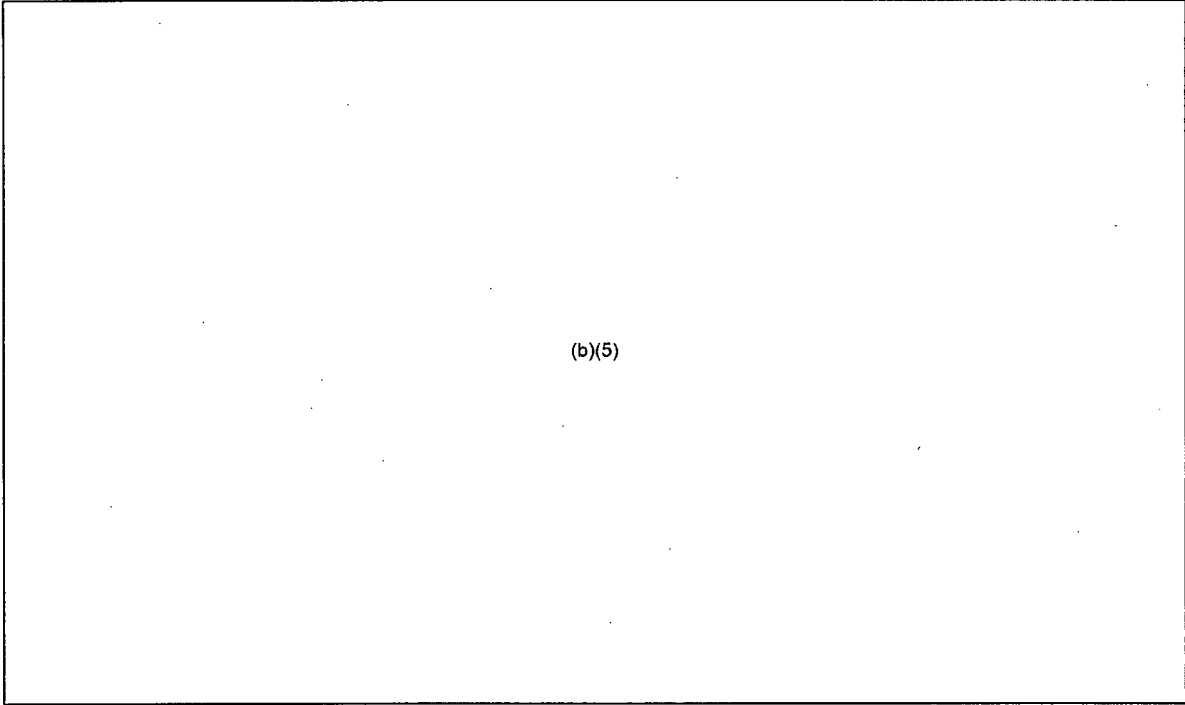


(b)(5)

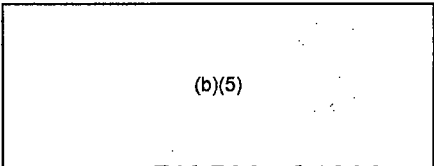
(b)(5)

Industry Tech Group Conference Call Outline
Standing Call 1100 EDT.
Use NRC bridge line (800)772-3842, pass code

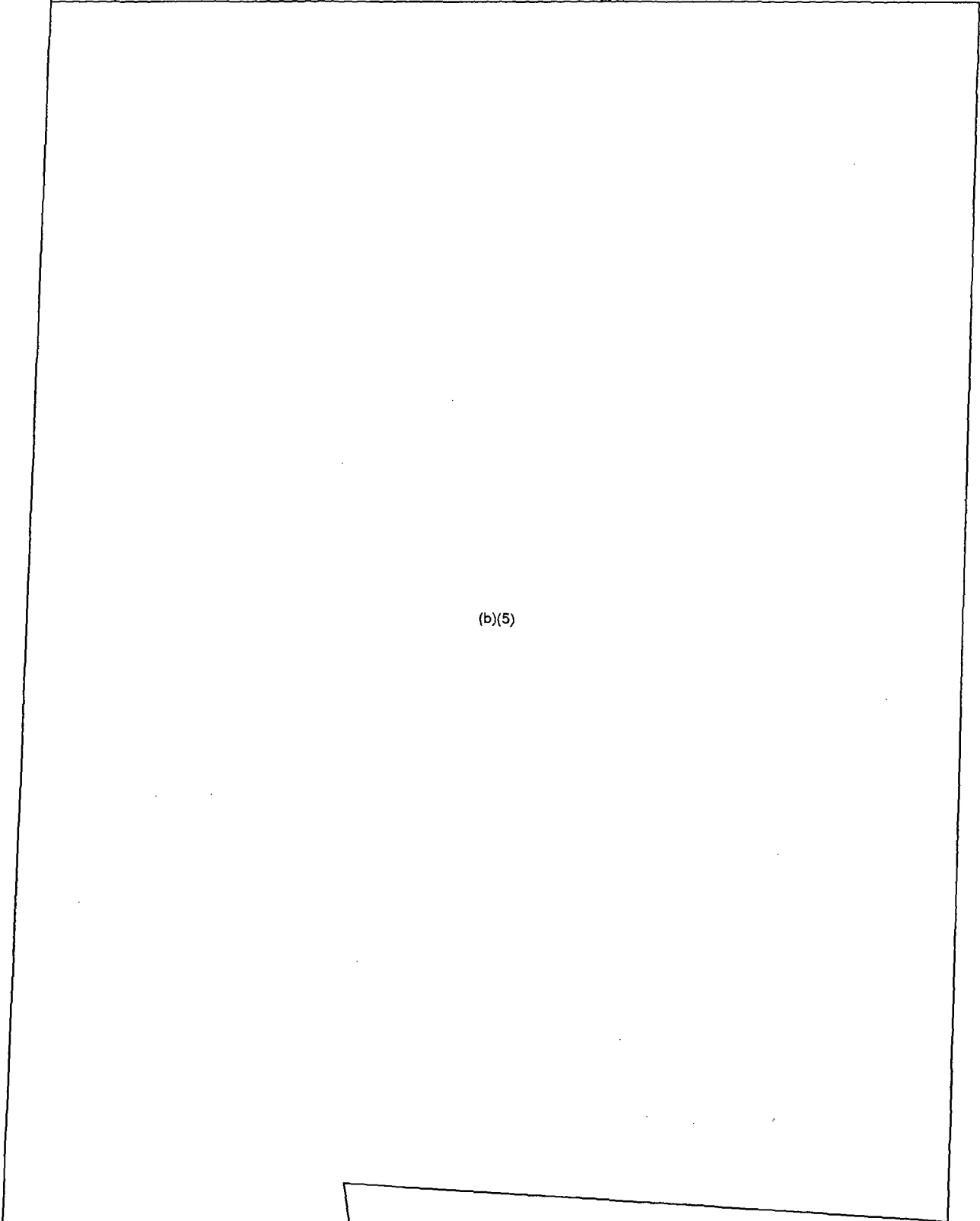
(b)(6)



(b)(5)

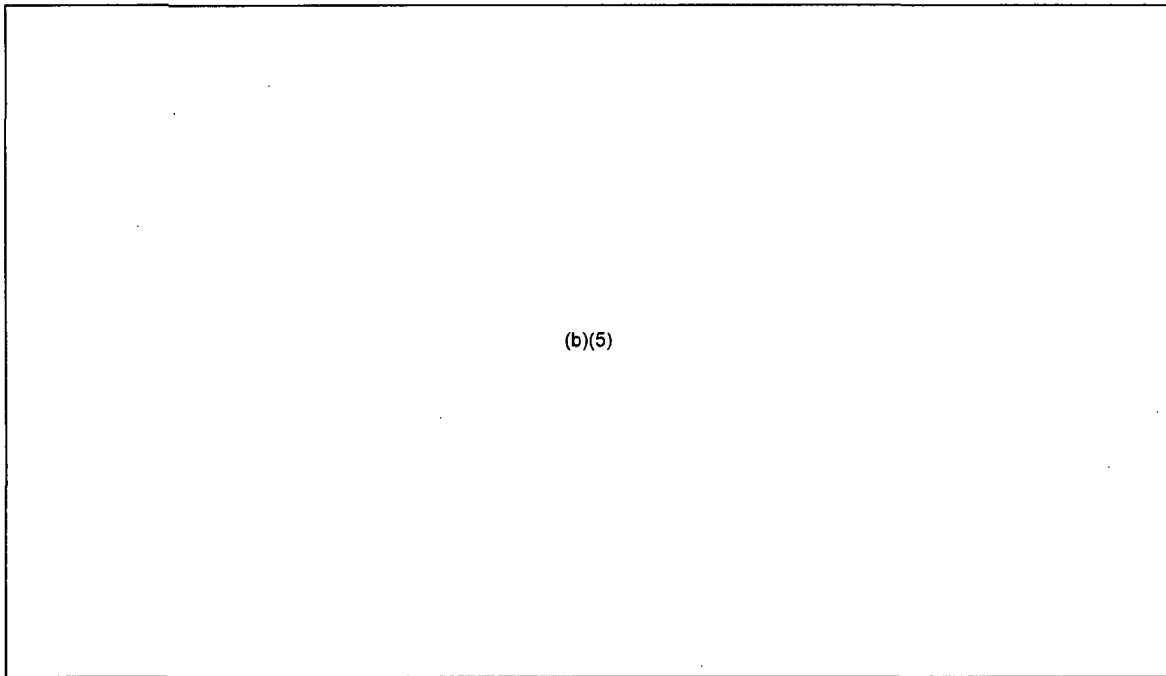


(b)(5)



(b)(5)

PTS ERC Issue Tracking Sheet



(b)(5)

From: [Huckaby, Thomas S.\(INPO\)](mailto:Huckaby, Thomas S.(INPO))
To: RST01 Hoc
Subject: FW: Cooling Method Draft
Date: Friday, March 25, 2011 1:57:26 PM

EPRI input

From: INPO EmergencyResponseCtr (INPO)
Sent: Friday, March 25, 2011 1:57 PM
To: Huckaby, Thomas S.(INPO)
Subject: FW: Cooling Method Draft

From: Clark, Brozia [<mailto:bhclark@epri.com>]
Sent: Friday, March 25, 2011 1:40 PM
To: INPO EmergencyResponseCtr (INPO)
Cc: INPOERCComm
Subject: Cooling Method Draft

For your review and forwarding to NRC and GEH.

From: Jeff R. Gabor [<mailto:jrgabor@erineng.com>]
Sent: Friday, March 25, 2011 12:40 PM
To: Canavan, Ken
Subject: RE: 3-25 1100 Industry technical conference call

Initial thoughts on cooling methods draft from Japan.

1. Overall, strategies seem reasonable. They clearly understand the issues and are addressing all topics of importance. (Nothing left out).
2. Preserving containment is highest priority
 - a. All steps should be taken to avoid H2 combustion in containment or RPV.
 - b. Eventually will need to initiate vent/purge to reduce H2 and O2 concentrations or reduce containment pressure. (Suspect O2 is getting close to 4-5% - GEH analysis will be more accurate). With all the cold water in containment, expect steam fraction is low and combustion could occur.
 - c. One possible solution is to establish any hard pipe venting path to redirect containment atmosphere to a safe location and begin purging with N2. There are several novel locations should traditional paths be blocked or otherwise unusable.
 - d. Smaller vent paths such as a 2"-4" path might be enough to buy time and reduce O2/H2 concentrations and provide a manageable release point. They should measure the effluent concentrations to know how they are doing.
 - e. Option might be to vent into a water pool (CST tank, etc) however, must be able to

address pure H₂ and O₂ coming off the surface of the water pool.

3. Cooling of core and containment

- a. The options sound reasonable – however, ONLY after the H₂/O₂ issue is resolved – NOT BEFORE (as it would appear that conditions for hydrogen combustion exist in the drywell)
- b. Spray the DW head and DW outer surface to cool
- c. Spray/flood the outer surface of Torus – with SRVs sending heat to pool, torus water is hottest source.
- d. Establish an internal cooling loop using piping in containment to circulate sea water – may require valve manipulations not available.
 - i. Options might include FW piping, ECCS piping, CRD piping
 - ii. Might establish feed/bleed with seawater in containment – require a letdown line from the torus to a storage tank

These are some quick thoughts for input to GEH. GEH may have many of these covered already. There do not appear to be any significant omissions in their draft and there does not seem to be any major contradictions with RST assessment from the US.

Bo Clark

Program Manager - Plant Engineering

Electric Power Research Institute

Phone: 704 595 2684

Mobile: (b)(6)

Fax: 704 595 2862

bhclark@epri.com

1300 West WT Harris Blvd.

Charlotte, NC 28262-8550

www.epri.com

From: RST01 Hoc
Sent: Monday, March 28, 2011 8:45 PM
To: Blamey, Alan; Casto, Chuck; Dorman, Dan; GE Hitachi; Giessner, John; INPO ERC Main; INPO ERC Tech; John Kelly - DOE; Monninger, John; Richard Stark - DOE; Rob Versluis - DOE; RST01B Hoc; RST03 Hoc; Sal Golub - DOE; Scott, Michael; Taylor, Robert
Subject: Questions discussed during RST phone call at 4 PM on March 28, 2011

This is being sent to a group email list set up for the industry sampling. This will be a duplicate email for some of you. Sorry!

>>>>>>
All,

This email is to document questions from the RST that were asked during the 4pm phone call on March 28, 2011. Please address these questions and make any other changes you may recommend by providing mark ups (one from GEH for question 3 and one from INPO on questions 1 and 2) to the RST Assessment of Fukushima Daiichi Units revision 0 time stamped 2100 hrs 3/26/2011.

Please submit your mark ups and other comments to RST01.Hoc@NRC.gov in time for discussion on the 11am EDT conference call on March 29, 2011.

1. The RST assessment states that, once the containment has been purged with nitrogen and vented, RPV injection can be maximized. RST would like industry to confirm that this recommendation remains valid if the primary containment, either torus or drywell, is believed to not be intact. For example, increasing RPV injection could lead to a rapid flow out the containment breach into the environment. Would the desire to minimize such releases affect the recommendation to maximize RPV injection? Why or why not? What changes, if any, are warranted to the RST assessment paper to either explain the rationale or change the recommendations?
2. During a telephone conversation at 1600EDT on 3/28/11, there was discussion about radiation levels reported in the drywells and toruses and their implications for RPV integrity. RST would like industry to clarify what indications may be used to assess RPV integrity or location of the core. Also, given the currently available information, what conclusions would the industry reach regarding the status of Unit 1 through 3, and what, if any, changes to the recommendations documented in the RST assessment paper would be warranted based on this insight.
3. (b)(5) The site team provides information that the Japanese plan to use the installed Nitrogen inerting system, which provides nitrogen from a central tank, to purge units 1, 2, and 3. As discussed, there were concerns about whether this flowpath would be fully available given the likely location of some valves. Please provide alternative paths and their potential use. Unit 1 with an intact primary containment will show a pressure increase if purging is successful. How can successful nitrogen purging be determined on units 2 and 3 if h2 sampling is not available?

Thank you,
RST Team

From: RST01B Hoc
Sent: Monday, March 28, 2011 3:30 PM
To: sal.golub@nuclear.energy.gov; trevor.cook@nuclear.energy.gov
Subject: FW: Members of the "Consortium"

Sal/Trevor, NRC is updating the correspondence list for the Nuclear Safety Team. It looks like John Kelly is now on the list. Send any additional names to the RST email address below. Rich

From: RST01 Hoc
Sent: Monday, March 28, 2011 2:55 PM
To: Huckaby, Thomas S.(INPO); RST03 Hoc; GE Hitachi; GEH.iccengineering@ge.com; EventResponse@epri.com;

(b)(6)

Subject: Members of the "Consortium"

Please check to "To:" list of the Members of the "Industry Consortium" that normally has a teleconference ay 1100 on 800-772-3842 (b)(6) This group also has a teleconference at other times (1600 today to discuss changes to the assessment/recommendations paper). If someone is missing please advise me at RST01.hoc@nrc.gov

RST Coordinator

From: RST01 Hoc
Sent: Monday, March 28, 2011 2:55 PM
To:

(b)(6)

Subject: Members of the "Consortium"

Please check to "To:" list of the Members of the "Industry Consortium" that normally has a teleconference ay 1100 on 800-772-3842 (b)(6) This group also has a teleconference at other times (1600 today to discuss changes to the assessment/recommendations paper). If someone is missing please advise me at RST01.hoc@nrc.gov

RST Coordinator

From: RST01B Hoc
Sent: Monday, March 28, 2011 11:44 AM
To: sal.golub@nuclear.energy.gov; trevor.cook@nuclear.energy.gov
Subject: FW: 9:00am call in with INPO

Sal, You probably heard this on the 9:00 call. Nevertheless, the next call with INPO, GEH and Naval Reactors is scheduled for 4:00pm (16:00) today. 800-772-3842 Password (b)(6)

Tomorrow's call is to be moved back to 11:00am. (INPO and NRC to finalize the time for tomorrow be NRC wants 11:00).
Rich

From: RST01B Hoc
Sent: Monday, March 28, 2011 8:58 AM
To: 'sal.golub@nuclear.energy.gov'; 'trevor.cook@nuclear.energy.gov'
Subject: 9:00am call in with INPO

Call in Number is 800-772-3842 Password (b)(6)

Rich Stark

Rick Hasselberg,
Sr. Emergency Response Coordinator
Response Program Manager
Reactor Safety Team
Fuel Cycle Safety Team
Office of Nuclear Security & Incident Response
U.S. Nuclear Regulatory Commission
rick.hasselberg@nrc.gov
Office - 301-415-6419

From: Versluis, Rob <ROB.VERSLUIS@nuclear.energy.gov>
Sent: Sunday, March 27, 2011 9:39 AM
To: RST01 Hoc; RST01B Hoc
Subject: Fw: NE status report
Attachments: NEGTN02-#205028-v25C-STATUS_OF_FUKUSHIMA_DAIICHI_REACTORS.DOCX

Fyi
Rob Versluis +1-301-903-1890(o) (b)(6) (m)

----- Original Message -----

From: PWG
To: DL-NERT-All
Sent: Sun Mar 27 07:09:20 2011
Subject: NE status report

Pretty quiet, except for the crapped up water in Units 1,2,3.

#205028

5

DK 576 of 1892

From: Versluis, Rob <ROB.VERSLUIS@nuclear.energy.gov>
Sent: Saturday, March 26, 2011 8:42 PM
To: RST01 Hoc; RST01B Hoc
Subject: Fw: NEGTN02-#205028-v25A-STATUS_OF_FUKUSHIMA_DAIICHI_REACTORS
Attachments: NEGTN02-#205028-v25A-STATUS_OF_FUKUSHIMA_DAIICHI_REACTORS.docx

Fyi
Rob Versluis +1-301-903-1890(o) + (b)(6) (m)

----- Original Message -----

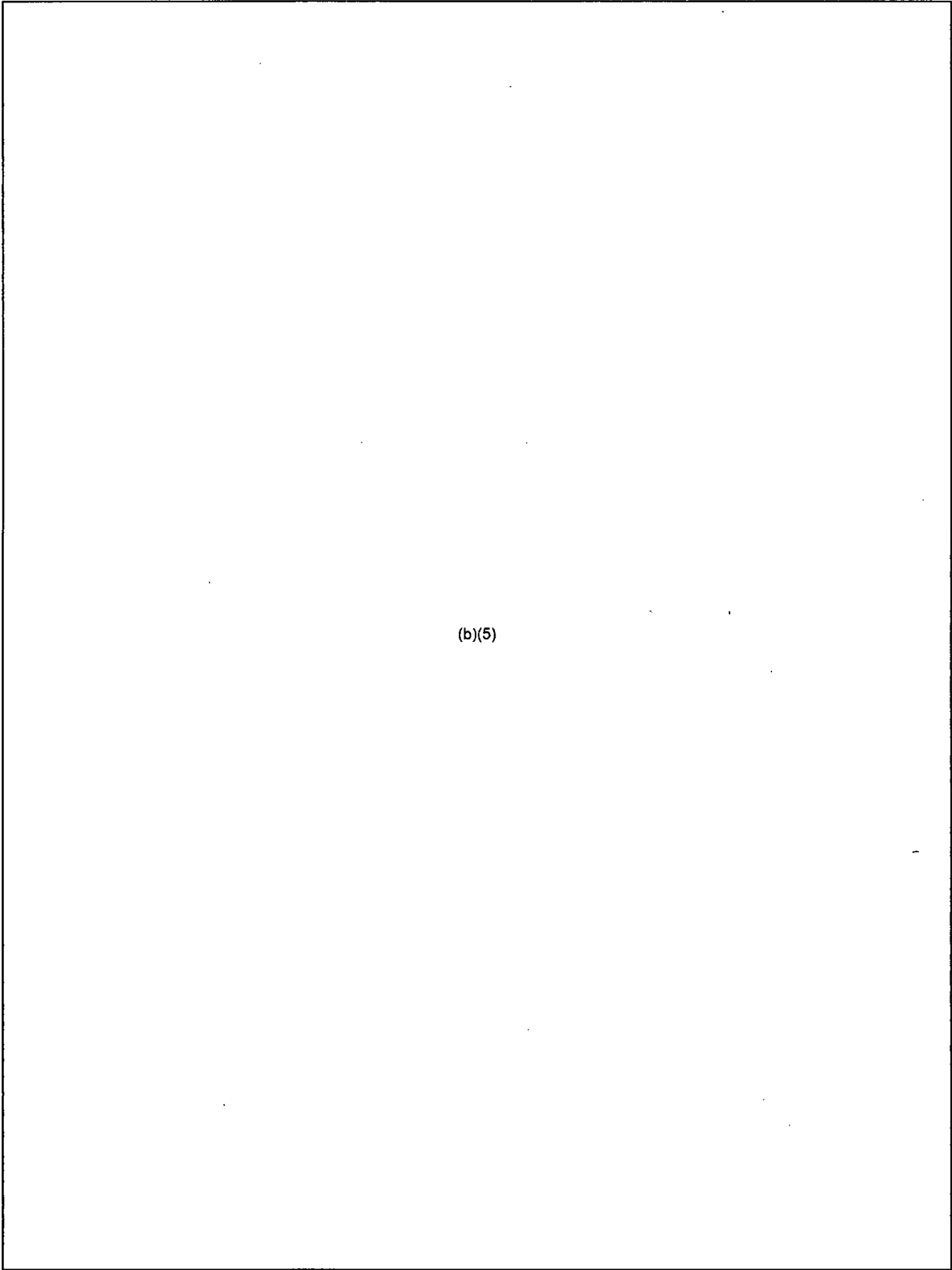
From: Welling, Craig
To: DL-NERT-All
Sent: Sat Mar 26 19:40:17 2011
Subject: NEGTN02-#205028-v25A-STATUS_OF_FUKUSHIMA_DAIICHI_REACTORS

Attached is the updated NE EOC Watch Stander Status Report.
Craig

Status of Fukushima Daiichi Reactors
26 March 2011
As of 2000 (EDT)

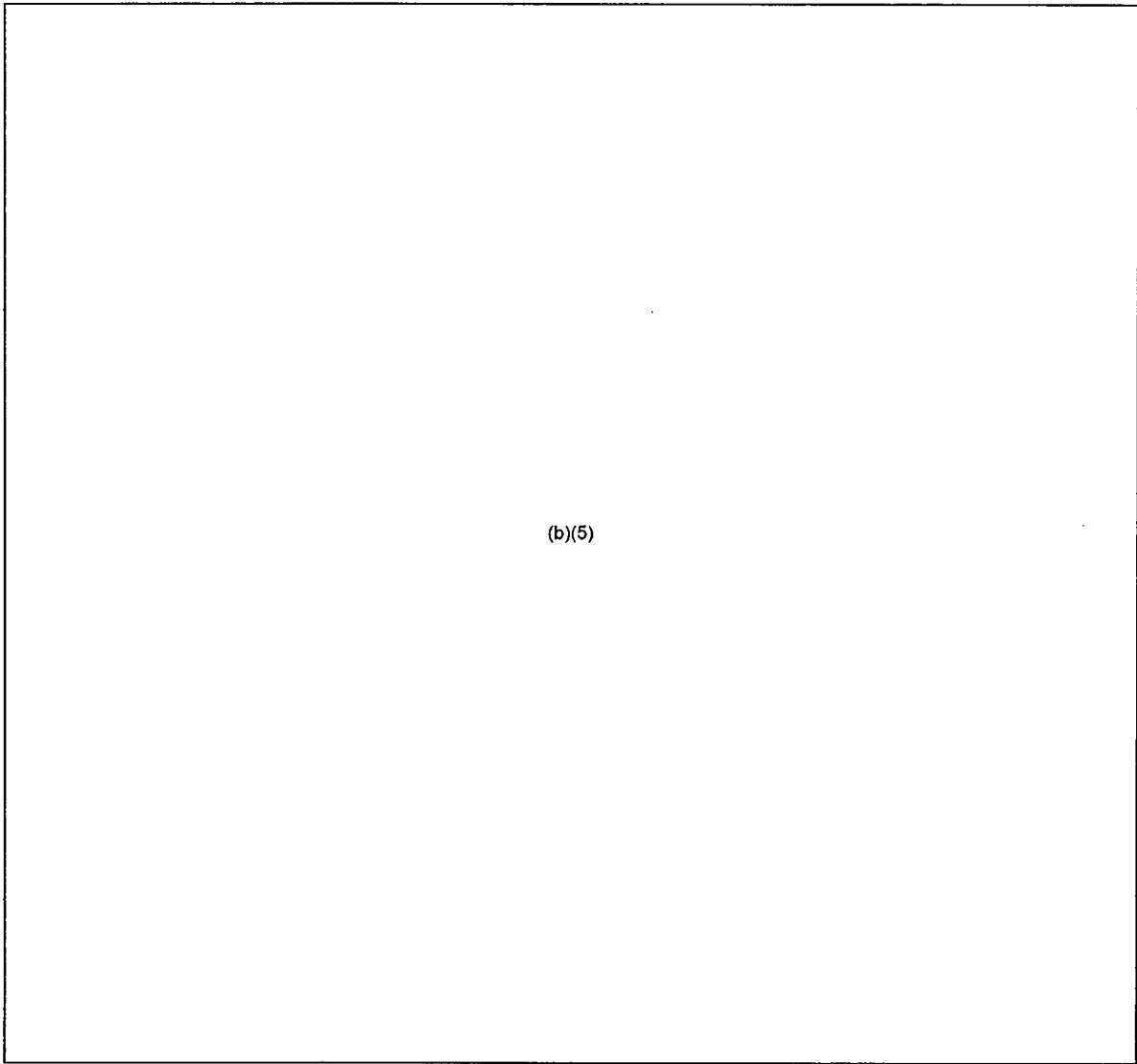
Underlined text indicates updates to this version. Older items will be deleted as necessary to minimize the size of this report and facilitate quick reading.

(b)(5)



(b)(5)

(b)(5)



(b)(5)

From: Huckaby, Thomas S.(INPO) <HuckabyTS@INPO.org> on behalf of INPOERCTech <inpoerctech@inpo.org>
Sent: Saturday, March 26, 2011 6:13 PM
To: RST01 Hoc; Blamey, Alan; Casto, Chuck; Dorman, Dan; GE Hitachi; Giessner, John; INPO EmergencyResponseCtr (INPO); INPOERCTech; John Kelly - DOE; Monninger, John; Richard Stark - DOE; Rob Versluis - DOE; RST01B Hoc; RST03 Hoc; Sal Golub - DOE; Scott, Michael; Taylor, Robert
Subject: RE: Questions from Japan Team (4).doc
Attachments: RST assessment industry input.docx

Use this additional document

From: RST01 Hoc [mailto:RST01.Hoc@nrc.gov]
Sent: Saturday, March 26, 2011 6:10 PM
To: Blamey, Alan; Casto, Chuck; Dorman, Dan; GE Hitachi; Giessner, John; INPO EmergencyResponseCtr (INPO); INPOERCTech; John Kelly - DOE; Monninger, John; Richard Stark - DOE; Rob Versluis - DOE; RST01B Hoc; RST03 Hoc; Sal Golub - DOE; Scott, Michael; Taylor, Robert
Subject: RE: Questions from Japan Team (4).doc

The Bridge Line for the call in is:

Call in to: 800-772-3842 Pass Code (b)(6)

This is a long term bridge line we will be able to use at any time so please keep this number.

Mark Orr
RST Coordinator.

From: RST01 Hoc
Sent: Saturday, March 26, 2011 6:04 PM
To: Blamey, Alan; Casto, Chuck; 'Dan Dorman'; 'GE Hitachi'; Giessner, John; 'INPO ERC Main'; 'INPO ERC Tech'; 'John Kelly - DOE'; Monninger, John; 'Richard Stark - DOE'; 'Rob Versluis - DOE'; RST01B Hoc; RST03 Hoc; 'Sal Golub - DOE'; Scott, Michael; Taylor, Robert
Subject: Questions from Japan Team (4).doc

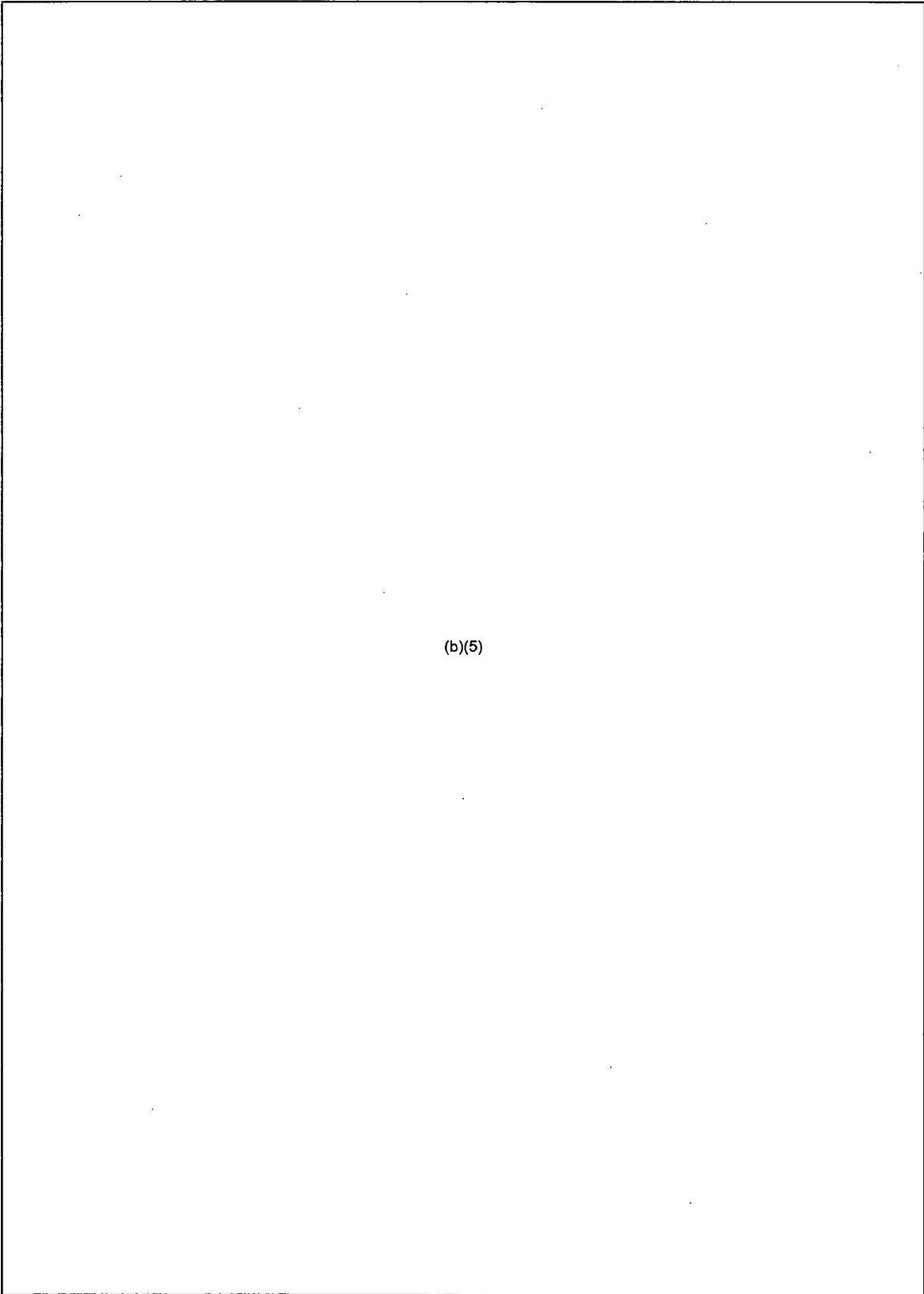
Team:

The attached information needs to be incorporated into the consensus recommendations document sent to you earlier.

We would like to have a phone call at 6:45 PM (EDT) to go over the details. I will send you the bridge line number in a few minutes.

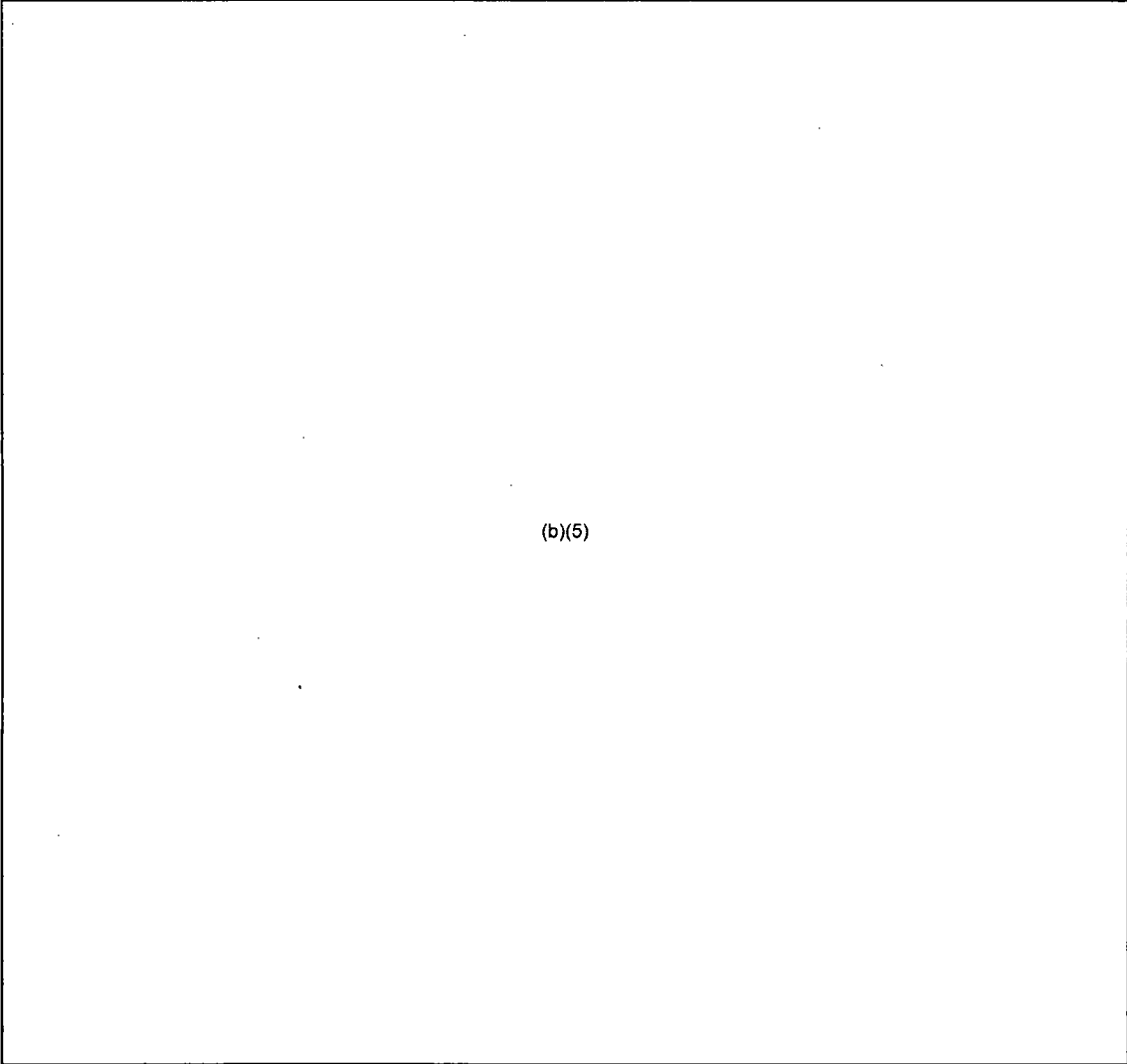
Mark Orr

~~Official Use Only~~
RST Response to Questions from Japan Team
20:30 EDT March 25, 2011



(b)(5)

~~Official Use Only~~
RST Response to Questions from Japan Team
20:30 EDT March 25, 2011



(b)(5)

(b)(5)

(b)(5)

(b)(5)

From: RST01 Hoc
Sent: Saturday, March 26, 2011 5:17 PM
To: Blamey, Alan; Casto, Chuck; Dan Dorman; GE Hitachi; Giessner, John; INPO ERC Main; INPO ERC Tech; John Kelly - DOE; Monninger, John; Richard Stark - DOE; Rob Versluis - DOE; RST01B Hoc; RST03 Hoc; Sal Golub - DOE; Scott, Michael; Taylor, Robert
Subject: FW: 03-26-11-1600 RST Assessment Document
Attachments: 03-26-11-1600 RST Assessment Document REDLINE.docx

For your action.

From: RST07 Hoc
Sent: Saturday, March 26, 2011 5:15 PM
To: RST01 Hoc
Subject: 03-26-11-1600 RST Assessment Document REDLINE.docx

All,

I am the NRC RST 2-26-2011 3PM to 11PM BWR analyst. Attached is the Industry/INPO/NRC consensus assessment that was developed after the 1:00pm conference call this afternoon for your review.

Some questions for consideration.

In my turnover I was told that we do not want the Japanese to start the RHR or core spray pumps because we are concerned about the dose levels that will likely occur in the corner rooms. This is in conflict with our recommendations which say to operate core spray, feedwater and other systems as they become available.

In the SAMGs -2 blocks 3 and 6 say to vent while purging with either air or nitrogen. GEH has sent a recommendation to purge with nitrogen or air while venting. Our recommendation says to vent if purging nitrogen and is vague about purging with air.

NR has this comment: SAMG-1 says to maximize injection to the vessel and primary containment. It appears this is being interpreted for this situation. Specifically, it appears that the collective NRC/INPO/EPRI/GEH team has concluded that flow into the RPV above MRDIR, with no additional injection into the drywell or torus, will fill the containment at a sufficient rate and more aggressive means of filling containment are not warranted. Additionally, a higher rate of injection would increase the risk of hydrogen deflagration/detonation. This essentially says the existing actions being taken (i.e., flow exceeds 25 GPM into all three units) is adequate even though it may take weeks to fill containment at this flow rate. Is this correct? If so, shouldn't the document say that?

Chuck Norton
NRC/RST/BWR Analyst

From: RST01 Hoc
Sent: Saturday, March 26, 2011 10:57 AM
To: GE Hitachi; INPO ERC Main; INPO ERC Tech; John Kelly - DOE; Richard Stark - DOE; Rob Versluis - DOE; RST01B Hoc; RST03 Hoc; Sal Golub - DOE
Subject: NRC RST Format for Unit 1-3 Recommendations
Attachments: 03-26-11 1100 Recommendations Table.docx

All,

Here is a revision that includes Units 1-3. We are working on cleaning it up.

Please provide comments/feedback to this address.

Regards,
Eric Thomas
NRC RST

UNIT ONE REACTOR

PIORITY	RECOMMENDATIONS	Notes/Assumptions/Other things to Remember
<ul style="list-style-type: none">• Make the protection of primary containment the first priority	(b)(5)	

In parallel continue to
maintain RPV cooling

(b)(5)

[Redacted] (b)(5) [Redacted]

UNIT ONE SPENT FUEL POOL

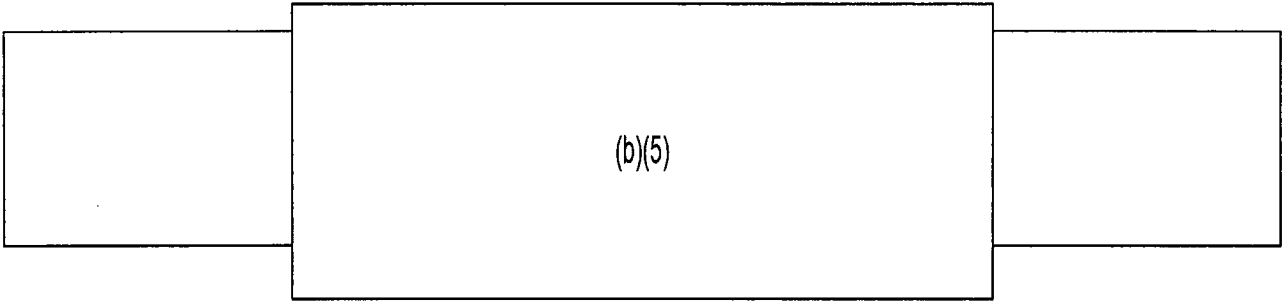
PIORITY	RECOMMENDATIONS	Notes/Assumptions/Other things to Remember
Ensure SFP level maintained as full as possible		

UNIT TWO REACTOR

PIORITY	RECOMMENDATIONS	Notes/Assumptions/Other things to Remember
<ul style="list-style-type: none">• Make the protection of primary containment the first priority	(b)(5)	

- In parallel continue to maintain RPV cooling

(b)(5)



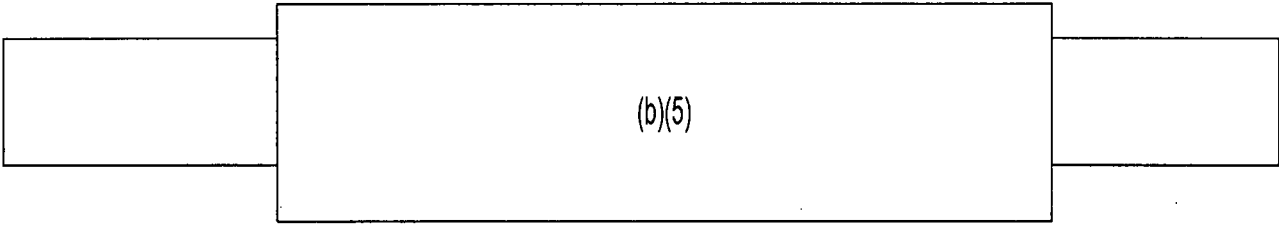
UNIT TWO SPENT FUEL POOL

PIORITY	RECOMMENDATIONS	Notes/Assumptions/Other things to Remember
<ul style="list-style-type: none">• Ensure SFP level maintained as full as possible	(b)(5)	

UNIT THREE REACTOR

PIORITY	RECOMMENDATIONS	Notes/Assumptions/Other things to Remember
<ul style="list-style-type: none">• Make the protection of primary containment the first priority	(b)(5)	

<ul style="list-style-type: none">o In parallel continue to maintain RPV cooling	(b)(5)	



UNIT THREE SPENT FUEL POOL

PIORITY	RECOMMENDATIONS	Notes/Assumptions/Other things to Remember
<ul style="list-style-type: none">• Ensure SFP level maintained as full as possible	(b)(5)	

UNIT FOUR REACTOR

PIORITY	RECOMMENDATIONS	Notes/Assumptions/Other things to Remember
	No recommendations at this time.	

UNIT FOUR SPENT FUEL POOL

PIORITY	RECOMMENDATIONS	Notes/Assumptions/Other things to Remember
o Maintain coverage of spent fuel pool with fresh borated water	(b)(5)	

From: RST01 Hoc
Sent: Saturday, March 26, 2011 10:04 AM
To: GE Hitachi; INPO ERC Main; INPO ERC Tech; John Kelly - DOE; Richard Stark - DOE; Rob Versluis - DOE; RST01B Hoc; RST03 Hoc; Sal Golub - DOE
Subject: NRC RST Format for Unit 1-3 Recommendations
Attachments: 03-26-11 1030 Recommendations Table.docx

Please find a draft format attached. We only have the data included for Unit 1 at this point. This will become an attachment to the NRC Reactor Safety Team Assessment document.

Please provide comments/feedback to this address.

Regards,
Eric Thomas
NRC RST

From: Versluis, Rob <ROB.VERSLUIS@nuclear.energy.gov>
Sent: Friday, March 25, 2011 8:22 PM
To: RST01 Hoc; RST01B Hoc
Subject: Fw: NEGTN02-#205028-v22-STATUS_OF_FUKUSHIMA_DAIICHI_REACTORS
Attachments: NEGTN02-#205028-v22-STATUS_OF_FUKUSHIMA_DAIICHI_REACTORS.docx

Fyi
Rob Versluis +1-301-903-1890(o) + (b)(6) (m)

----- Original Message -----

From: Smith-Kevern, Rebecca
To: DL-NERT-All
Sent: Fri Mar 25 20:01:51 2011
Subject: NEGTN02-#205028-v22-STATUS_OF_FUKUSHIMA_DAIICHI_REACTORS

8:00 pm update to the Reactor Status report.

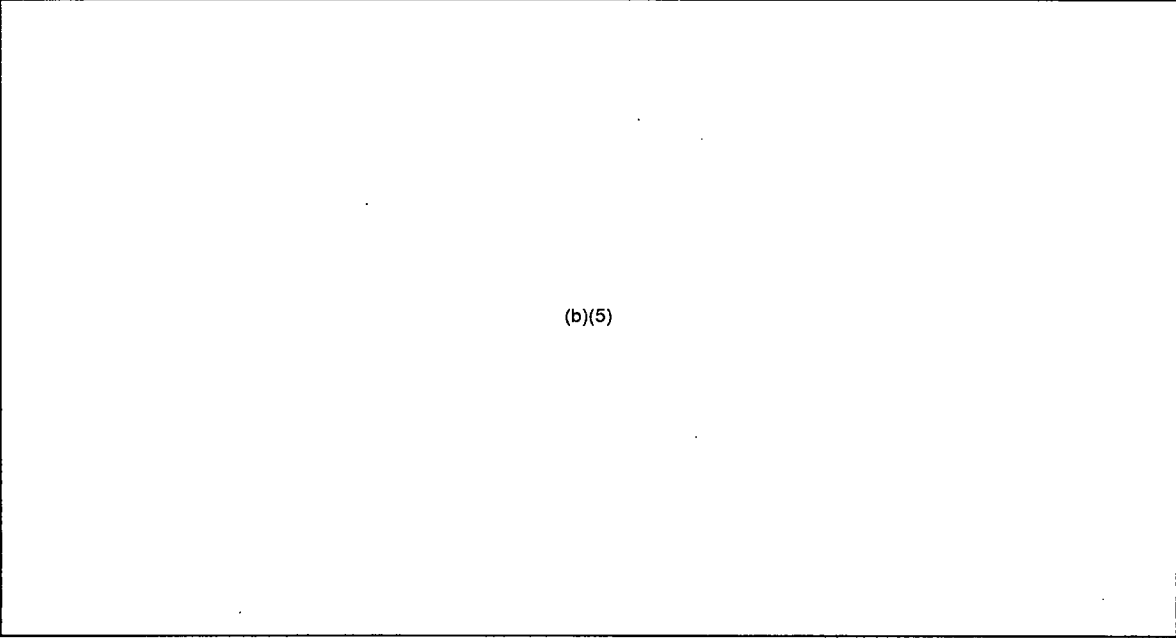
**Status of Fukushima Daiichi Reactors
25 March 2011
As of 2000 (EDT)**

Underlined text indicates updates to this version. Older items will be deleted as necessary to minimize the size of this report and facilitate quick reading.

(b)(5)

(b)(5)

(b)(5)



(b)(5)

From: RST01B Hoc
Sent: Friday, March 25, 2011 1:20 PM
To: sal.golub@nuclear.energy.gov; trevor.cook@nuclear.energy.gov
Subject: FW:
Attachments: Meeting Agenda for Industry Support Team 20110325.docx

Sal, this is the agenda from the 10:00 meeting. I just got it. Rich

From: RST01 Hoc
Sent: Friday, March 25, 2011 12:34 PM
To: RST01B Hoc
Subject: FW:

From: LIA11 Hoc
Sent: Friday, March 25, 2011 8:53 AM
To: Aoki, Steven; Blount, Tom; Boger, Bruce; Casto, Chuck; Dorman, Dan; ET01 Hoc; ET05 Hoc; FOIA Response.hoc Resource; Gitter, Joseph; Good, Charles; Hoc, PMT12; HOO Hoc; LIA01 Hoc; LIA06 Hoc; LIA08 Hoc; LIA11 Hoc; Lyons, Peter; McDermott, Brian; McGinty, Tim; Miller, Chris; Monninger, John; Morris, Scott; OST02 HOC; Pentagon Japan Crisis Team J-4 Desk; Ross-Lee, MaryJane; RST01 Hoc; Sal Golub; Tom Vavoso; Virgilio, Martin; Weber, Michael; Webster, William ; Wiggins, Jim; Zimmerman, Roy
Cc: Bill Froh
Subject:

Agenda for 10:00 Industry Consortium Call

From: RST01B Hoc
Sent: Friday, March 25, 2011 1:18 PM
To: sal.golub@nuclear.energy.gov
Subject: FW:
Attachments: Letter_-_Summary_of_reactor_unit_status_at_25-March_0500.UTC.PDF

FYI Note this is the IAEA report at midnight.
Rich

From: RST01 Hoc
Sent: Friday, March 25, 2011 1:02 PM
To: RST01B Hoc
Subject:

From: RST01 Hoc
Sent: Friday, March 25, 2011 12:34 PM
To: RST01B Hoc
Subject: FW:
Attachments: Meeting Agenda for Industry Support Team 20110325.docx

From: LIA11 Hoc
Sent: Friday, March 25, 2011 8:53 AM
To: Aoki, Steven; Blount, Tom; Boger, Bruce; Casto, Chuck; Dorman, Dan; ET01 Hoc; ET05 Hoc; FOIA Response.hoc Resource; Giitter, Joseph; Good, Charles; Hoc, PMT12; HOO Hoc; LIA01 Hoc; LIA06 Hoc; LIA08 Hoc; LIA11 Hoc; Lyons, Peter; McDermott, Brian; McGinty, Tim; Miller, Chris; Monninger, John; Morris, Scott; OST02 HOC; Pentagon Japan Crisis Team J-4 Desk; Ross-Lee, MaryJane; RST01 Hoc; Sal Golub; Tom Vavoso; Virgilio, Martin; Weber, Michael; Webster, William ; Wiggins, Jim; Zimmerman, Roy
Cc: Bill Froh
Subject:

Agenda for 10:00 Industry Consortium Call

Agenda for Daily Industry Support Team Teleconference Meeting

March 25, 2011 10:00 EDT

800-772-3842 (b)(6)

Purpose of the Meeting: Alignment of US Government and US Nuclear Industry support for Japan in responding to the Fukushima Nuclear Event.

Expected Outcome: Reinforce roles and responsibilities; identify problems and open issues surrounding our support

Meeting Chair: US NRC

- Roll Call
- Continued discussion of organizational Issues / Roles and Responsibilities
 - US Agency Roles and Leads
 - US Industry Support Structure and Roles
- INPO report on status of material requests
- INPO team report status of on-going work on requests for technical support
- Review Current Action Items
- New Actions

From: RST01B Hoc
Sent: Friday, March 25, 2011 9:01 AM
To: trevor.cook@nuclear.energy.gov
Subject: test transmittal
Attachments: 03-25-11 0430 RST Assessment Document.docx

Trevor, I am trying to send you a test transmittal from NRC Incident Response Center.

Rich Stark

Rick Hasselberg,
Sr. Emergency Response Coordinator
Response Program Manager
Reactor Safety Team
Fuel Cycle Safety Team
Office of Nuclear Security & Incident Response
U.S. Nuclear Regulatory Commission
rick.hasselberg@nrc.gov
Office - 301-415-6419

From: Versluis, Rob <ROB.VERSLUIS@nuclear.energy.gov>
Sent: Thursday, March 24, 2011 7:48 PM
To: RST01B Hoc; RST01 Hoc; 'Bill Froh'
Subject: FW: NEGTN02-#205028-v19-STATUS_OF_FUKUSHIMA_DAIICHI_REACTORS
Attachments: NEGTN02-#205028-v19-STATUS_OF_FUKUSHIMA_DAIICHI_REACTORS.docx

fyi

-----Original Message-----

From: Welling, Craig
Sent: Thursday, March 24, 2011 7:45 PM
To: DL-NERT-All
Subject: NEGTN02-#205028-v19-STATUS_OF_FUKUSHIMA_DAIICHI_REACTORS

Attached is the updated NE EOC Watchstander Status Report.
Craig

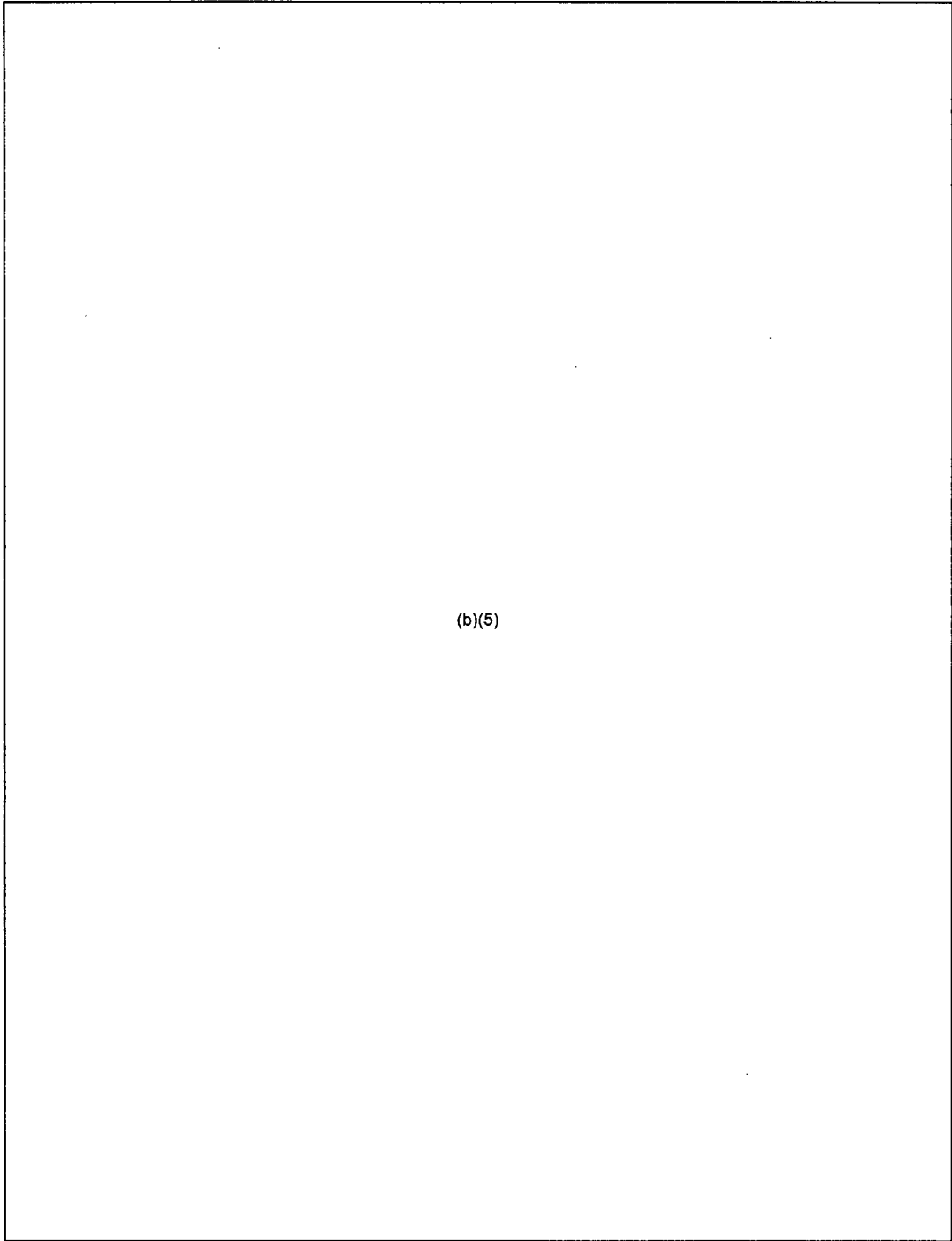
Status of Fukushima Daiichi Reactors
24 March 2011
As of 2000 (EDT)

Underlined text indicates updates to this version. Older items will be deleted as necessary to minimize the size of this report and facilitate quick reading.

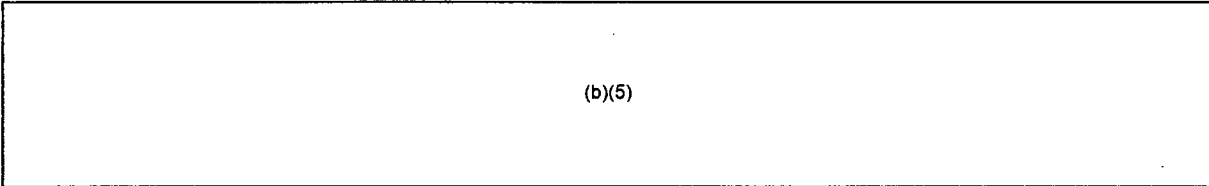
(b)(5)

(b)(5)

(b)(5)



(b)(5)



(b)(5)

(b)(5)

From: RST01B Hoc
Sent: Thursday, March 24, 2011 6:24 PM
To: rob.versluis@nuclear.energy.gov
Subject: FW: DOE-NRC Coordinatin on 3 new questions from Japan

-----Original Message-----

From: Versluis, Rob [mailto:ROB.VERSLUIS@nuclear.energy.gov]
Sent: Thursday, March 24, 2011 10:07 AM
To: RST01B Hoc
Subject: FW: DOE-NRC Coordinatin on 3 new questions from Japan

-----Original Message-----

From: Versluis, Rob
Sent: Thursday, March 24, 2011 10:04 AM
To: Larzelere, Alex; Kelly, John E (NE); Cook, Trevor; Golub, Sal
Cc: Versluis, Rob
Subject: DOE-NRC Coordinatin on 3 new questions from Japan

Following a Japan Cabinet meeting in which the following questions were raised for the US through DART (USAID) to INPO-DOE-NRC, INPO wishes to work with DOE POCs directly to get a coordinated answer back to Japan.

The questions are:

1. List of Gamma spectrometry capabilities in US (both DOE and US industry have lists) 2. Available remote water measurement technology? Robotics? (same) 3. Longer term: available technology for removing spent fuel from the pool

The DOE POCs should interact directly with INPO POCs and keep NRC on cc. Would you nominate DOE POCs; our POCs should speak for all DOE.

Rob

From: RST01B Hoc
Sent: Thursday, March 24, 2011 4:11 PM
To: RST07 Hoc
Subject: FW: RPV impacts.pptx
Attachments: RPV impacts.pptx

From: Versluis, Rob [mailto:ROB.VERSLUIS@nuclear.energy.gov]
Sent: Thursday, March 24, 2011 3:42 PM
To: RST01B Hoc
Subject: FW: RPV impacts.pptx

From: Miller, Tom
Sent: Thursday, March 24, 2011 2:49 PM
To: Kelly, John E (NE); DL-NERT-All
Subject: RPV impacts.pptx

John,

Attached brief on RPV impacts came in from ORNL. If I read this correct, vessel should take the high temperatures in Unit 3.

Tom Miller



U.S. DEPARTMENT OF

ENERGY

Nuclear Energy

**Temperature excursions and
RPV integrity**

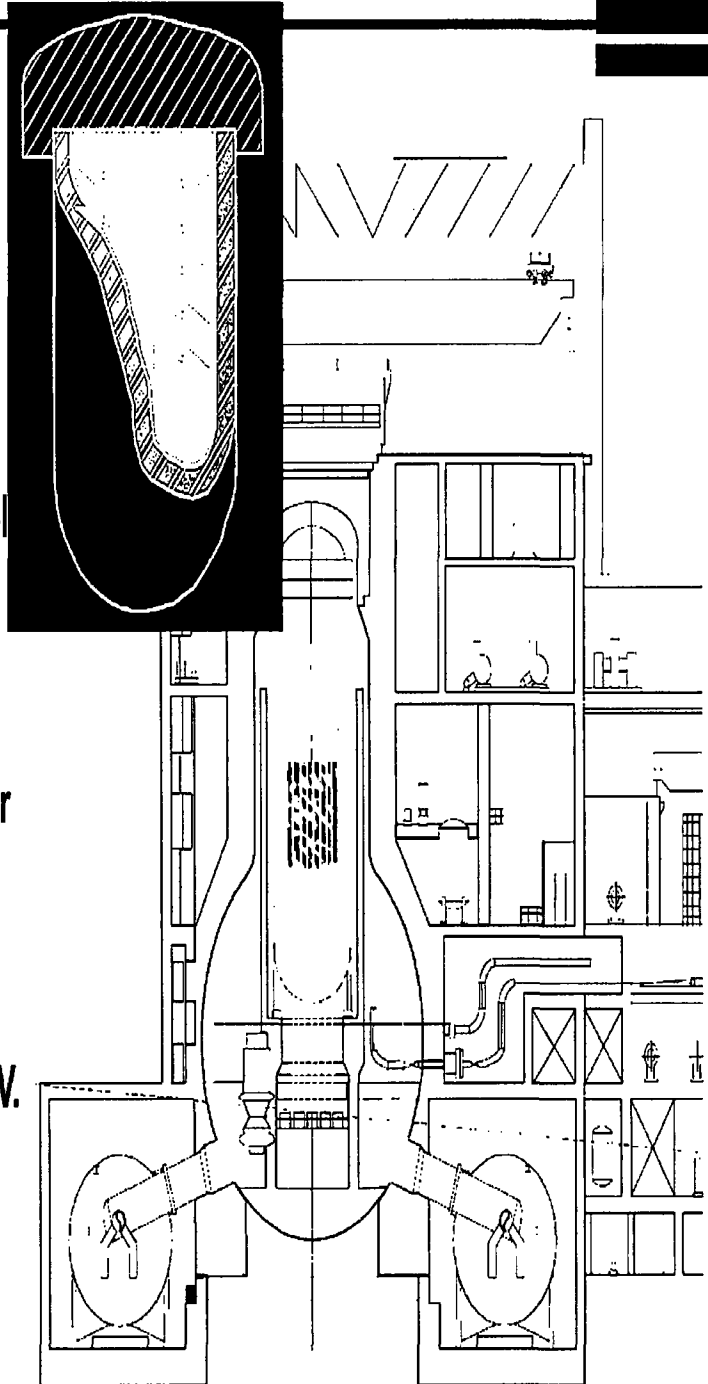


U.S. DEPARTMENT OF
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Recent temperature measurements indicate high temperatures at Unit 1 RPV

- Temperatures on the outside of RPV are reported at 400 C.
- Calculations indicate the inside of the vessel may be at 500 C.
- Pressures of 0.3 MPa inside the vessel and 0.18 MPa outside the vessel are assumed.
- These conditions may have existed for up to 24-48 hours
- Expert opinion was solicited on the impacts of these conditions to the RPV.



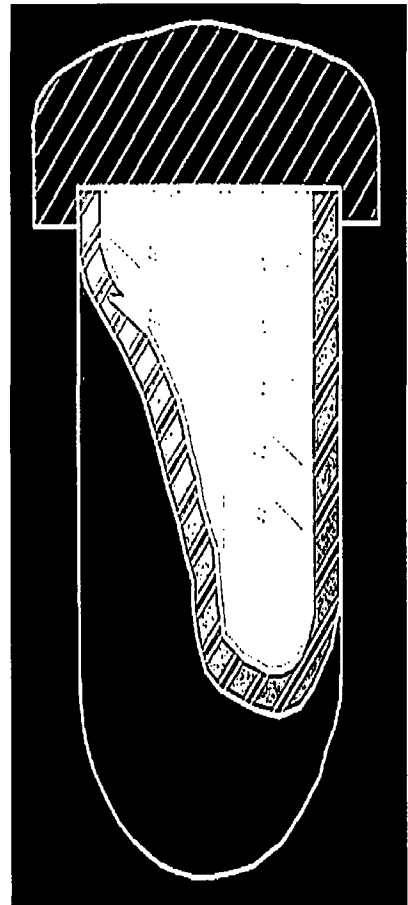


U.S. DEPARTMENT OF
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Nuclear Energy

ASME Code case-499 gives guidance on such issues

- ASME Code Case 499 addresses elevated temperature excursions for RPV's.
- This code permits temperatures up to 427 C for up to 3000 hours at normal operating pressure (~7.6 MPa)
- This code also permits temperatures up to 538 C for up to 1000 hours at normal operating pressure (~ 7.6 MPa)
- The major loss of strength at these temperatures is due to thermal creep.
- The fact that unit 1 is at lower pressure helps in relation to this code case at these temperatures.



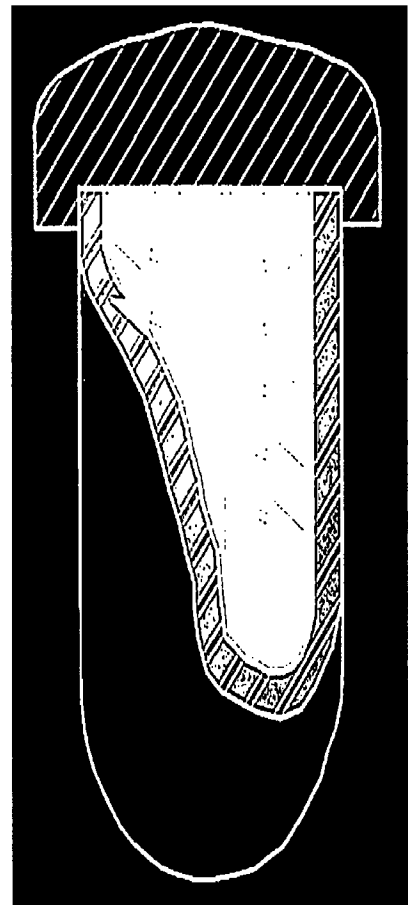


U.S. DEPARTMENT OF
ENERGY

Nuclear Energy

Other considerations regarding RPV conditions

- Penetrations and nozzles may be the most sensitive locations due to geometry effects (bends and radius)
 - Weldments and heat affected zones may be more susceptible due to higher residual stress.
 - However higher temperatures may help reduce residual stresses at weldments
- Exposure to temperatures at or above ~600 C will result in rapid loss of strength (10s of hours) as tempering will occur.
- Neutron embrittlement may have been a concern after 40 years of life. However, after exposure to temperatures around 450 C, irradiation-induced hardening has likely been reduced significantly (annealed), reducing this particular aspect of degradation.
- Exposure to salt or saline solution is clearly not desirable, but significant corrosion will not occur in a matter of days.



From: Versluis, Rob <ROB.VERSLUIS@nuclear.energy.gov>
Sent: Thursday, March 24, 2011 9:50 AM
To: RST01B Hoc; 'Bill Froh'
Subject: FW: NEGTN02-#205028-v17-STATUS_OF_FUKUSHIMA_DAIICHI_REACTORS
Attachments: NEGTN02-#205028-v17-STATUS_OF_FUKUSHIMA_DAIICHI_REACTORS.docx

-----Original Message-----

From: Welling, Craig
Sent: Wednesday, March 23, 2011 8:58 PM
To: DL-NERT-All
Subject: NEGTN02-#205028-v17-STATUS_OF_FUKUSHIMA_DAIICHI_REACTORS

Attached is the updated NE EOC Watchstander Status report.

Dennis Miotla will have the next watch at 0400 on March 24.

Status of Fukushima Daiichi Reactors

23 March 2011

As of 2000 (EDT)

Underlined text indicates updates to this version. Older items will be deleted as necessary to minimize the size of this report and facilitate quick reading.

- General
 - TEPCO has reported black smoke had been seen emerging from Unit 3 as of 1630 on March 23. Officials with Tokyo Electric Power Co. said Wednesday that workers from the entire Fukushima Dai-ichi plant had been temporarily evacuated. Personnel tried to confirm the smoke using search light during the night, but it was difficult to confirm whether still smoke exists.
 - NHK News reported that TEPCO planned to test-run a cooling pump at Unit 3 on Wednesday, March 23 as part of the cooling restoration effort. Also TEPCO reported reactor temperature instruments for Units 1, 2, and 3 were restored to working order over the weekend. These instruments measure reactor vessel external surface temperature. Temperatures were indicating higher values than normal. Unit 1 vessel surface temperature was indicating 394⁰C and Unit 3 was indicating 366⁰C. No information was provided for unit 2. In response, TEPCO increased seawater cooling rates to Unit 1 to cool the reactor down. As of 1800 on March 23 temperature decreased to 305⁰ C for unit 1 and 304⁰ C for unit 3. Unit 2 was reported to be at 102⁰C.
 - NHK News reported strong earthquakes of the Pacific coast of northeastern Japan on Wednesday morning. A quake with a magnitude 6.0 jolted Fukushima Prefecture at around 7:12 AM JST, followed by a magnitude 5.8 tremor about 20 minute later.
 - Tokyo metropolitan government report 210 becquerels per liter of iodine-131 were detected on 3/22 at one of its purification plants in northern Tokyo. A sampling on 3/23 also showed roughly 190 Bq/l. This exceeds safe limits for infants (100 Bq/l). Safe limit for adults is 300 Bq/l.
 - Japan's Health Ministry reported Tuesday finding radioactive materials at levels "drastically exceeding legal limits" in 11 types of vegetable grown in Fukushima Prefecture, including broccoli and cabbage, according to Kyodo News Agency.
 - TEPCO continues work to recover power to all six reactors. External power is available to plant distribution panels for units 1, 2, 3, and 4. Tests to energize existing plant equipment are in progress. Unit 1 and 2 cooling pumps were covered with seawater and maintenance is necessary. Unit 3 main control room recovered power for lighting at 13:43 pm on March 22. Unit 3 Control Room lights have been restored. Electricity to unit 4 control room is expected to be restored on March 23. Reestablishment of power to the existing receiving equipment in Unit 5 and 6

buildings has been completed. The central control center and Residual Heat Removal system are being energized.

- METI reports Unit 5 and Unit 6 received electricity reached to the starting transformer at 19:52 March 20th. The power supply of Unit 5 and Unit 6 was switched from the emergency diesel generator to the external power supply at 11:36am on March 21st and 19:17 on March 22nd.
- JAIF report states temperature instruments measuring the surface of reactors 1, 2, and 3 was restored at 04:15 JST on March 23.
- Per conference call with an NRC representative in Japan at 2200 on 22 March , the Unit 2 SFP has been filled, efforts are being made to connect fresh water to units 1-3 and it is not clear how effective the use of the cement truck is at filling the unit 3 and 4 Spent Fuel Pools.
- The master list on robot capabilities has been passed to Damian Peko.
- Radiation Levels
 - At 1900 JST on March 22, radiation level outside main office building (approximately 1,640 feet from Unit 2 reactor building) of Fukushima Daiichi Nuclear Power Station: 277.5 micro Sv/hour (Previous 2,362micro Sv/hour 1600 JST March 21).
 - NRC reported no substantial change in site dose measurements as of 1800 EDT March 21.
 - At 10:30 a.m. Tuesday March 22, TEPCO reported high levels of radioactive substances have been found in seawater near the damaged Fukushima Daiichi nuclear power plant. Levels of iodine-131 in the seawater were 126.7 times higher than government-set standards, the electric company said on its website. Its monitors detected caesium-134, which has a half-life of about two years, about 24.8 times higher than the government standards. Cesium-137 was found to be 16.5 times higher than the standard. The electric company detected these levels in seawater 100 meters (328 feet) south of the nuclear power plant Monday afternoon. Per JAIF, at 1430 JST on March 21 it was announced that radioactive nuclides had been detected from sampling of seawater near the seawater discharge point of unit 1 to 4 (southside).
- Fukushima Daiichi Unit 1 reactor
 - Per NISA, the amount of water injection was increased (2m³/h→18m³/h) to the reactor core by using water supply system in addition to water extinction system.(02:33) March 23rd). The injection rate was later adjusted to 11m³/h at 1100 on March 23.
 - Per NISA, 1800 JST, 3/23: Reactor pressure 0.481 MPa (A) 0.459 MPa (B), reactor water level 1.75 m (A) 1.70 m (B) below the top of the fuel rods, containment vessel 320 kPa, suppression pool 300 kPa.

- Per NISA, 1800, 3/23 reactor temp readings: feedwater nozzle 305 C, bottom head 306C.
 - Previous estimate of fuel rod damage is at 70%. The reactor vessel and primary containment are intact. Unit #1 contains 292 elements.
 - Per METI, 0800 JST, 3/23, there is no risk of a hydrogen explosion in the containment vessel because there is no oxygen in it. There is no high probability of leaking large amount of radioactive material currently.
- Fukushima Daiichi Unit 2 reactor
 - Per the DHS report at 0600 on 21 March 2011, injection of 40 tons of seawater into the spent fuel pool commenced. The water level remains stable and no cooling water has leaked to the reactor containment vessel. TEPCO reports power has been restored and electric water pump injection systems are being tested for damage.
 - Injection of seawater to the Unit 2 reactor via the Fire Extinguishing System Line for cooling continues.
 - Per NISA, 1800 JST, 3/23: Reactor pressure 0.065 MPa (A) 0.065 MPa (B), reactor water level 1.3 m (A) below the top of the fuel rods, containment vessel 110 kPa, suppression pool pressure down scale, spent fuel pool water temp 51C (as of 0420 JST).
 - Per NISA, 1800, 3/23 reactor temp readings: feedwater nozzle 101C, bottom head 107 C.
 - Activities for connecting the commercial electricity grid are underway. Previous estimate of fuel rod damage is at 33%. The reactor vessel and primary containment are intact.
 - Unit#2 SFP contains 587 elements.
 - METI reports injection of 40 tons and 18 tons of seawater to the spent fuel pool of Unit 2 was started (from 15:00 till 17:20 March 20th and from 16:07 till 17:01 March 22nd).
- Fukushima Daiichi Unit 3 reactor
 - The water level remains stable and no cooling water has leaked to the reactor containment vessel. Pressure has stabilized and venting measures are not necessary.
 - TEPCO reports in-plant power recovery efforts are underway. METI reports that lighting in the main control room was recovered at 2243 JST on March 22rd.
 - Pumping of seawater to the RPV via the Fire Extinguishing System Line for cooling continues.
 - Per NISA, 1800 JST, 3/23: Reactor pressure 0.135 MPa (A) -0.003 MPa (C), reactor water level 1.8 m (A) 2.3 m (B) below the top of the fuel rods, containment vessel 100 kPa, suppression pool pressure down scale.
 - Per NISA, 1800, 3/23 reactor temp readings: feedwater nozzle 304 C, bottom head 225 C.
 - Unit #3 SFP contains 514 elements.
 - Per NISA, 35Tons of seawater was injected to the SFP via the Cooling and Purification line.
 - Per NISA, blackish smoke was generated from the Unit 3 Reactor Building at 1620 on March 23.

- Fukushima Daiichi Unit 4 reactor
 - The reactor water level remains stable and no cooling water has leaked to the reactor containment vessel. TEPCO reports local substation power connection efforts are underway.
 - Unit 4 is shutdown with the core removed to the spent fuel pool in December for maintenance on the reactor. Unit #4 SFP contains 1331 elements
 - A concrete pumping vehicle sprayed 130 tons of seawater on spent fuel pool at unit 4, from 1000 to 1302 on March 23. A camera was set at the end of the water spray arm. They will assess the status of the pool after the spray when they retrieve the camera.
 - Works for laying electricity cable to the Power Center was completed. (At around 15:00 March 21st). Power Center received electricity. (10:35 March 22nd).

- Fukushima Daiichi Unit 5 reactor
 - Per the DHS report at 0600 on 21 March 2011, reactor achieved cold shutdown conditions (less than 100°C). The Residual Heat Removal (RHR) system was restarted and is providing cooling water to the reactor. Pumps are operating intermittently and result in some fluctuations in temperature and pressure. Reactor parameters appear stable.
 - Unit 5 was in a refueling outage at the time of the earthquake.
 - As a result of restarting the Residual Heat Removal (RHR) pump (C), the Spent Fuel Pool is being maintained at 35.5°C at 1700 JST on March 22. Unit #5 SFP contains 946 elements.
 - Holes have been made in the roof to provide a vent path to reduce the potential for a hydrogen explosion.
 - Per NISA, 1800 JST, 3/23: Reactor pressure 0.108 MPa, reactor water level 1.744 m above the top of the fuel rods, spent fuel pool water temp 39.0C.
 - Power supply to Unit 5 was switched from the Emergency Diesel Generator to external power supply. (11:36 March 21st).
 - RHR seawater tripped at 1720 on March 23. This happened when operator switched temporary pump power supply. They are planning to start a stand by unit in the morning of March 24.

- Fukushima Daiichi Unit 6 reactor
 - Per the DHS report at 0600 on 21 March 2011, Reactor achieved cold shutdown conditions (less than 100°C). Cooling of the reactor cores continues.
 - Unit 6 was in a refueling outage at the time of the earthquake.
 - Cooling function of the Unit 6 Spent Fuel Pool (SFP) was restored at 10:00pm on March 19.
 - Unit #6 SFP contains 876 elements.
 - Holes have been made in the roof to provide a vent path to reduce the potential for a hydrogen explosion.
 - Per NISA, 1800 JST, 3/23: Reactor pressure 0.109 MPa, reactor water level 2.701 m above the top of the fuel rods, spent fuel pool water temp 20.0C.
 - Power supply to Unit 6 was switched from the Emergency Diesel Generator to external power supply. (19:17 March 22nd).

- Fukushima Daiichi Common Spent Fuel Pool
 - At 10:00AM on March 18, it was confirmed that water level in the pool was secured.
 - Japanese authorities have confirmed that fuel assemblies there are fully covered by water, and the temperature was 61 °C as of 21 March, 1630JST (NISA)
 - NISA reports water spray over the Common SFP was started at 10:37JST March 21.

- Fukushima Daiichi Dry Cask Storage Building
 - At 10:00AM on March 18, it was confirmed that there was no damage by visual checking of external appearance.

- OTHER: No new information.

Sources include:

Federation of Electric Power Companies of Japan

Links:

<http://www.jaif.or.jp/english/>

<http://www.tepco.co.jp/en/index-e.html>

<http://nei.cachefly.net/newsandevents/information-on-the-japanese-earthquake-and-reactors-in-that-region/>

<http://www.iaea.org/>

<http://www.mext.go.jp/english/>

<https://portalwc.doe.gov/>

<http://www.nisa.meti.go.jp/english/>

From: RST01B Hoc
Sent: Wednesday, March 23, 2011 4:09 PM
To: RST01 Hoc; RST07 Hoc
Cc: RST01B Hoc
Subject: FW: FW: Instrumentation Data and Background - Draft for Review
Attachments: ATT00002.jpg; Timeline and Data 3-22-11.xls; plant instrumentation -r4.docx

From: Versluis, Rob [mailto:ROB.VERSLUIS@nuclear.energy.gov]
Sent: Wednesday, March 23, 2011 11:50 AM
To: RST01B Hoc
Subject: FW: FW: Instrumentation Data and Background - Draft for Review

From: McCaughey, Bill
Sent: Wednesday, March 23, 2011 11:46 AM
To: DL-NERT-All; DL-NITsolutions
Subject: FW: FW: Instrumentation Data and Background - Draft for Review

Timeline and plant instrumentation trends being compiled for the first time. Note caveats on the data.

From: Joy L Rempe [mailto:Joy.Rempe@inl.gov]
Sent: Wednesday, March 23, 2011 9:43 AM
To: Schwab, Patrick
Cc: Larzelere, Alex; McCaughey, Bill; gehinjc@ornl.gov; McFarlane, Harold; Kelly, John E (NE); Sorenson, Ken B; Schwab, Patrick; Golub, Sal; Bari, Robert A
Subject: Re: FW: Instrumentation Data and Background - Draft for Review

Hi,

I sent Pat a quick note on my blackberry, but just so there's no confusion. It appears that all of the spent fuel pool data come from the same source. However, IAEA explicitly report 3 different times for obtaining 84 C values (others, such as JAIF only report the value without a time at later dates, indicating that it was measured on 3/14). It appears that they must go and read the data in the building (see WORD document). We also wondered about this information (e.g., why did IAEA report more details than we saw from other sources). Yesterday, I checked their website, and it still had three distinct time (so we agreed to leave the three data points). Today, the IAEA has updated their website, and they now report 1 time. We will update the plots.

As noted in the spreadsheet, we also noted other discrepancies in the reports that we received (e.g., some references reported pressures as abs, others reported gauge, and others just reported a pressure). We cross-compared and tried to understand their logic.

The vessel temperatures reported by Yamagata-san are the first that I've seen. We will start to include them (and assume that they mean C, but it might be good to ask.. the text we messed up).

Thanks,
Joy



Joy Rempe · Idaho National Laboratory
 Phone: (208) 526-2897 • Cell: (208) 520-3708 • Fax: (208) 526-2930 •
 Email: Joy.Rempe@inl.gov

"Schwab, Patrick" <Patrick.Schwab@nuclear.energy.gov>

03/23/2011 05:25 AM

To "Kelly, John E (NE)" <JohnE.Kelly@nuclear.energy.gov>, "Golub, Sal" <sal.golub@nuclear.energy.gov>, "Larzelere, Alex" <alex.larzelere@nuclear.energy.gov>
 cc "McFarlane, Harold" <harold.mcfarlane@inl.gov>, "McCaughey, Bill" <Bill.McCaughey@nuclear.energy.gov>, "Schwab, Patrick" <Patrick.Schwab@nuclear.energy.gov>, "Joy L Rempe" <Joy.Rempe@inl.gov>, "Sorenson, Ken B" <kbsoren@sandia.gov>, "gehinic@ornl.gov" <gehinic@ornl.gov>

Subject FW: Instrumentation Data and Background - Draft for Review

John,

(b)(4),(b)(5)

it.

Pat

(b)(4),(b)(5)

-----Original Message-----

From: Joy L Rempe [mailto:Joy.Rempe@inl.gov]
 Sent: Wednesday, March 23, 2011 12:52 AM
 To: Schwab, Patrick
 Cc: Gehin, Jess C.; Sorenson, Ken B; McFarlane, Harold; Douglas E Burns; spburns@sandia.gov; RobertP.Martin@inl.gov; Kurt L Davis; John.Kelly@netzsch.com; farmer@anl.gov; Finck, Phillip; taiwo@anl.gov; cgrandy@anl.gov; Robert W Youngblood; William C Phoenix; Nam T Dinh; Mark R Cox; Trevor Cook
 Subject: Instrumentation Data and Background - Draft for Review

Hi,

(b)(4),(b)(5)

(b)(4)(b)(5)

Thanks,
Joy

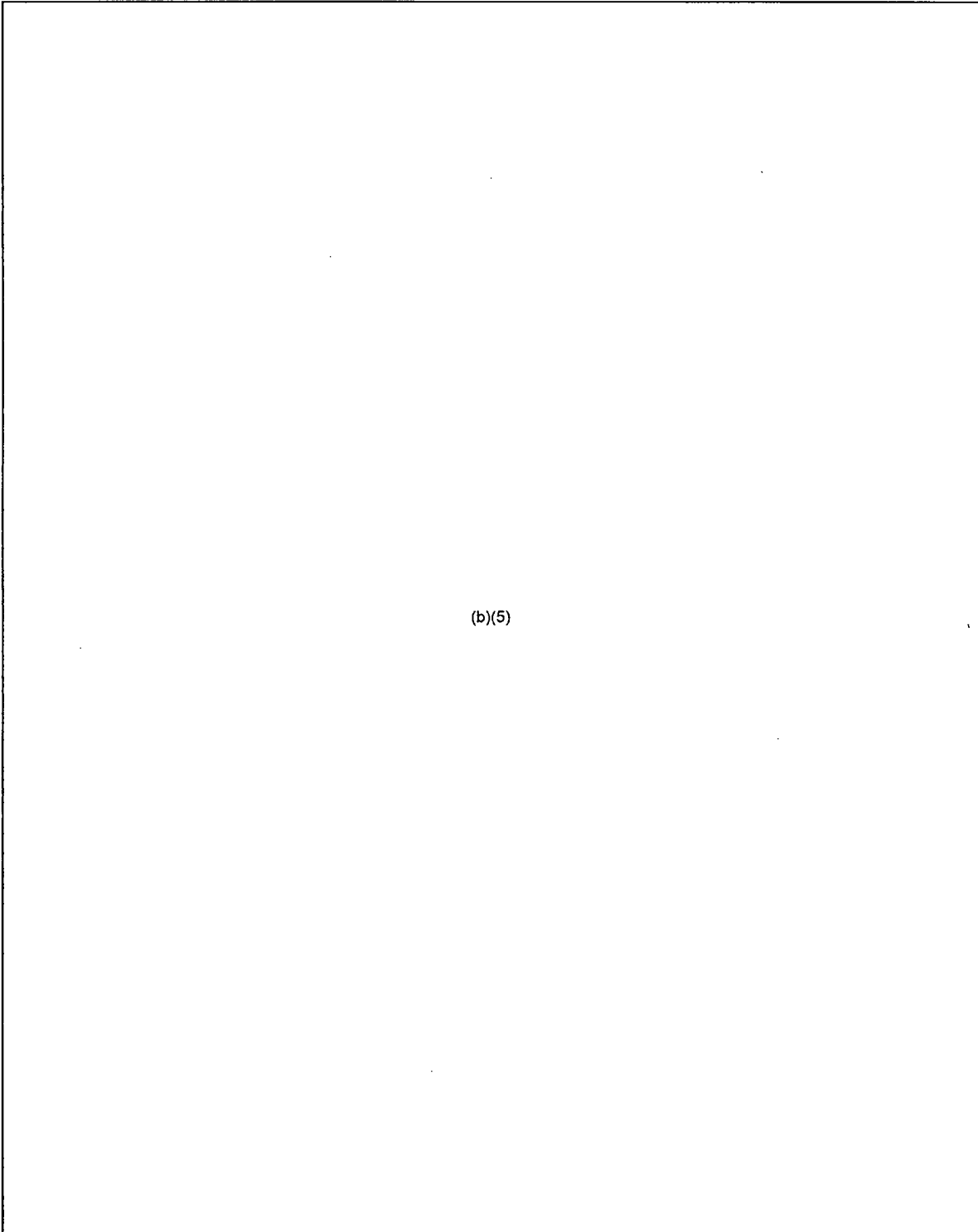


Joy Rempe · Idaho National Laboratory

Phone: (208) 526-2897 • Cell: (b)(6) • Fax: (208) 526-2930 •
Email: Joy.Rempe@inl.gov

Current Instrumentation (available, will be updated as additional data becomes available)

TEPCO Response [Q&As to G. Bisconti, 3/22/11]:



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From: Versluis, Rob <ROB.VERSLUIS@nuclear.energy.gov>
Sent: Wednesday, March 23, 2011 12:36 PM
To: RST01B Hoc; RST01 Hoc
Subject: (b)(4)(b)(5)
Attachments: 03_22_11 Continue feed and bleed with fresh water.doc

(b)(4)(b)(5)

From: Kelly, John E (NE)
Sent: Wednesday, March 23, 2011 12:06 PM
To: DL-NERT-All
Subject: FW: Suggestion to use fresh water for "feed and bleed (steam) cooling of reactors, rather than use fresh water flow to remove salt.

From: Richard L Garwin [mailto:rlg2@us.ibm.com]
Sent: Tuesday, March 22, 2011 10:30 AM
To: Adams, Ian
Cc: Brinkman, Bill; Hurlbut, Brandon; Brian Sheron; McFarlane, Harold; Adams, Ian; Kelly, John E (NE); Grossenbacher, John (INL); Owens, Missy; Per Peterson; Lyons, Peter; Finck, Phillip; Dick Garwin; Bob Budnitz; Rolando Szilard; Aoki, Steven; Koonin, Steven; Steve Fetter; Binkley, Steve
Subject: (b)(4)(b)(5)

(b)(4)(b)(5)

For John Kelly in particular, and analysis by INL and others.

(b)(4)(b)(5)

Dick Garwin

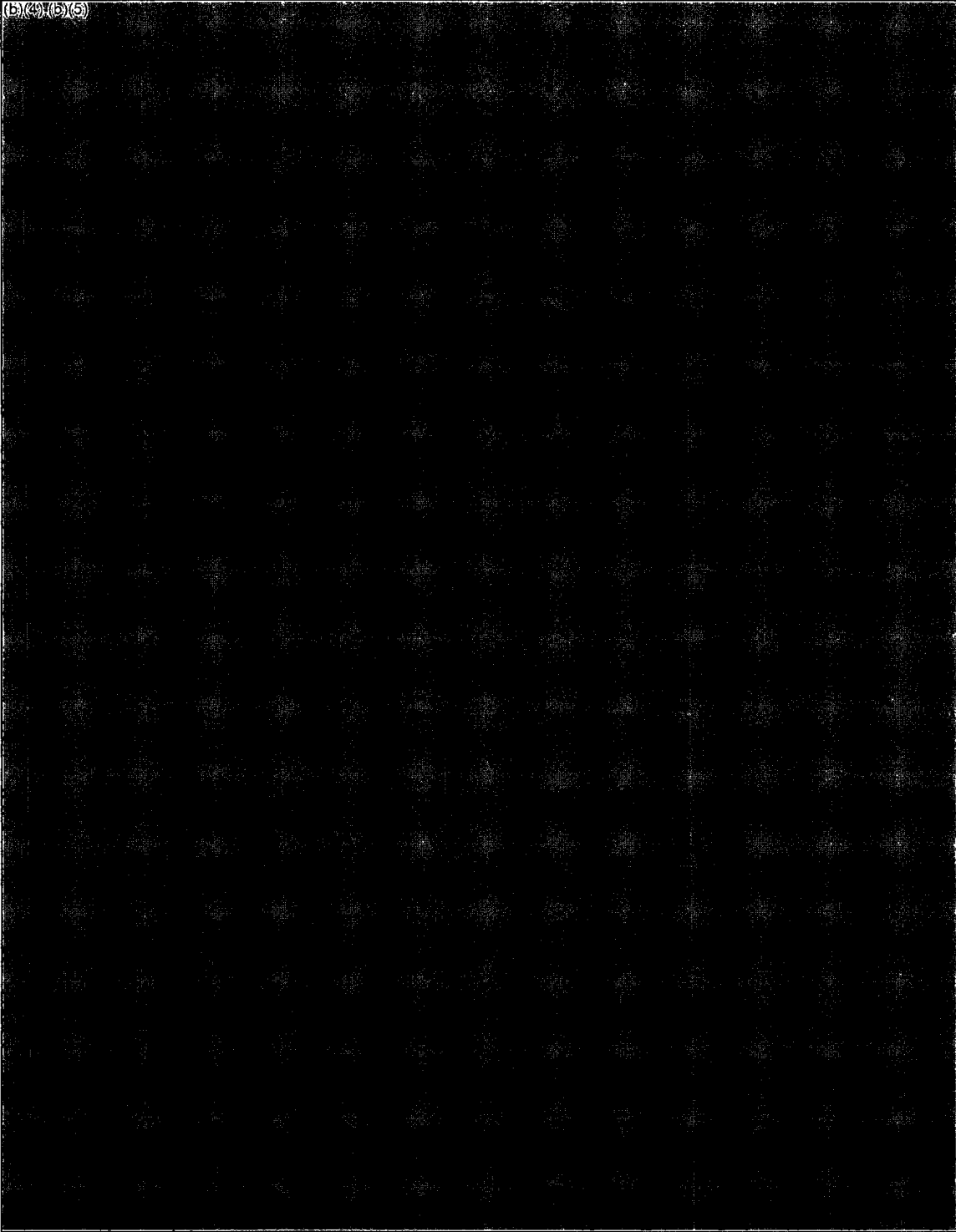
03_22_11 Continue feed and bleed with fresh water.doc
(03/22/2011 at 10:00 am EDT by Dick Garwin)

1. Cooling by feed (water) and bleed (steam).

(b)(4),(b)(5)



(b)(4)(b)(5)



Dick Garwin

From: Versluis, Rob <ROB.VERSLUIS@nuclear.energy.gov>
Sent: Wednesday, March 23, 2011 12:31 PM
To: RST01B Hoc; RST01 Hoc
Subject: FW: core in-vessel coolability under sea water
Attachments: ATT00001.gif; Salt Impact.pdf

This is an alternate evaluation of salt deposits and consequences on coolability of fuel. Should be of interest to your FeednBleed and salt team.

Rob

From: Kelly, John E (NE)
Sent: Wednesday, March 23, 2011 12:05 PM
To: DL-NERT-All
Subject: FW: core in-vessel coolability under sea water

From: Richard L Garwin [mailto:rlg2@us.ibm.com]
Sent: Sunday, March 20, 2011 11:34 AM
To: Kelly, John E (NE)
Subject: RE: core in-vessel coolability under sea water

Exactly right, John. So this is a problem for the cores of the reactors shut down by the EQ March 11-- not for the spent-fuel pools.

Don't know whether you have my early estimate and the INL calculation, so here it is.

Dick Garwin

From: "Kelly, John E (NE)" <JohnE.Kelly@Nuclear.Energy.Gov>
To: "Bob Budnitz" <rbudnitz@lbl.gov>, SCHU <SCHU@hq.doe.gov>, (b)(6)
Cc: "Per F. Peterson" <peterson@nuc.berkeley.edu>, Richard L Garwin/Watson/Contr/IBM@IBMUS, "Huribut, Brandon" <Brandon.Huribut@hq.doe.gov>, Doug Bums <douglas.bums@inl.gov>, "Adams, Ian" <Ian.Adams@hq.doe.gov>, "Grossenbacher, John (INL)" <john.grossenbacher@inl.gov>, "Lyons, Peter" <Peter.Lyons@Nuclear.Energy.Gov>, (b)(6), "Aoki, Steven" <Steven.Aoki@nnsa.doe.gov>, (b)(6), "Koonin, Steven" <Steven.Koonin@science.doe.gov>, "brian.sheron@nrc.gov" <brian.sheron@nrc.gov>, "johnkelly@nuclear.energy.gov" <johnkelly@Nuclear.Energy.Gov>, "McFarlane, Harold" <harold.mcfarlane@inl.gov>, "Binkley, Steve" <Steve.Binkley@science.doe.gov>
Date: 03/19/2011 08:22 PM
Subject: RE: core in-vessel coolability under sea water

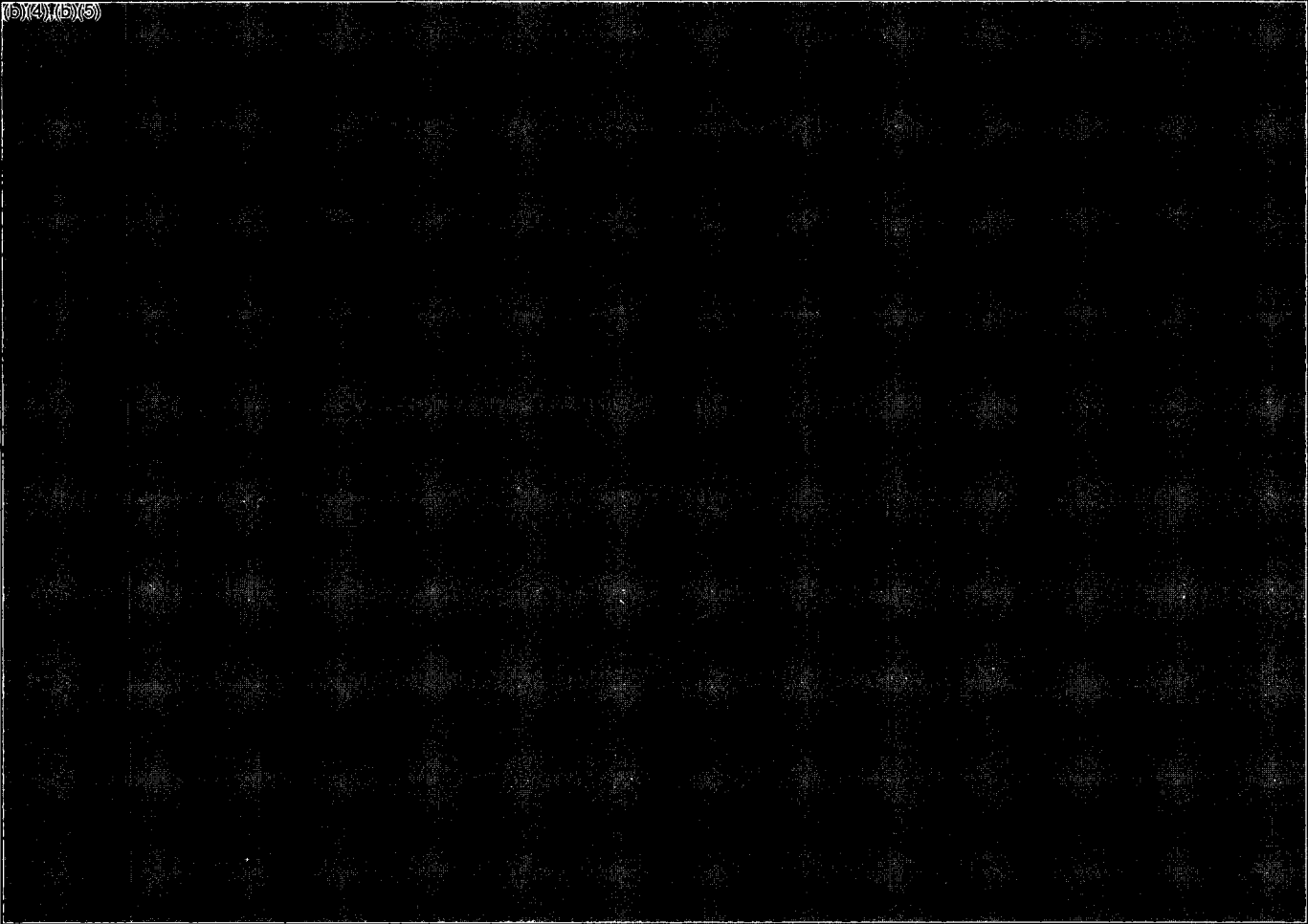
Bob

(b)(4),(b)(5)

John

-----*****

From: Richard L Garwin [<mailto:rlg2@us.ibm.com>]
Sent: Monday, March 14, 2011 4:18 PM
To: Fetter, Steve
Cc: Holdren, John P.; Bob Budnitz
Subject: Decay heat disposal via seawater cooling, or seawater flashed to steam.



Dick Garwin

Seawater Cooling in Fukushima Cores

Question: Adverse Effect of Seawater Usage in Core Cooling

The question and first estimate were given by Dr. Richard Garwin

(b)(4), (b)(5)



For input/ questions/comments: Nam.Dinh@inl.gov

Consequences of Seawater Cooling

(b)(4)(b)(5)



Salt Deposits

(b)(4), (b)(5)



From: Versluis, Rob <ROB.VERSLUIS@nuclear.energy.gov>
Sent: Wednesday, March 23, 2011 12:19 PM
To: Versluis, Rob; RST01B Hoc
Subject: March23 NERT Questions

1. Control blades melt before fuel rods - where is the boron? Does it affect the re-criticality calcs?
2. What is the water level in containment? If no direct measurements, can it be inferred?
3. Does the salt interact with the core melt? Where is the salt precipitated?

From: RST01B Hoc
Sent: Wednesday, March 23, 2011 10:47 AM
To: RST01 Hoc
Subject: FW: Mass energy balance
Attachments: mass balance.ppt

-----Original Message-----

From: Versluis, Rob [mailto:ROB.VERSLUIS@nuclear.energy.gov]
Sent: Tuesday, March 22, 2011 3:55 PM
To: RST01B Hoc
Subject: FW: Mass energy balance

-----Original Message-----

From: Peltz, James On Behalf Of Kelly, John E (NE)
Sent: Tuesday, March 22, 2011 2:37 PM
To: Larzelere, Alex; 'Elizabeth A Connell'; Binder, Jeff; 'Douglas.Burns@inl.gov'; Peko, Damian; Beville, Tim; Bisconti, Giulia; Cook, Trevor; Funk, Dan; Golub, Sal; Hutmaker, Matthew; Kelly, John E (NE); Kendall, Rick; McCaughey, Bill; McGinnis, Edward; Miller, Tom; O'Connor, Tom (NE-HQ); Peltz, James; Reister, Richard; Schwab, Patrick; Smith-Kevern, Rebecca; Tyson, Sean; Versluis, Rob; Welling, Craig
Subject: FW: Mass energy balance

FYI

-----Original Message-----

From: Farmer, Mitchell T. [mailto:farmer@anl.gov]
Sent: Tuesday, March 22, 2011 1:45 PM
To: Grandy, Christopher; Gehin, Jess C.; Busby, Jeremy Todd; Binder, Jeff
Cc: Kelly, John E (NE)
Subject: Mass energy balance

This isn't pretty I hope it helps.
Mitch

Mass-Energy Balances

March 21, 12:00 CST

Where is the water going?

- The sea water that becomes steam is being vented through the reactor safety relief valve and passing into the suppression pool.
- Without heat sink, the suppression pool is saturated, requiring venting through the torus pressure relief system.
- Water leaking from the vessel through the recirc pump seals (GE); leakage collecting in drywell.
- At a seawater pumping rate of 80 gpm (GE), then for the current decay heat level of ~ 6 MWt in Units 2-3, ~ 25 gpm is going into steam, leaving 55 gpm to accumulate in the drywell.
 - Drywell is about 1.1 Million gallons in volume, and so drywell will fill in fill in about two weeks.
 - Venting will be required to preclude drywell pressure buildup due to water injection, and allow more water to be pumped through the core.

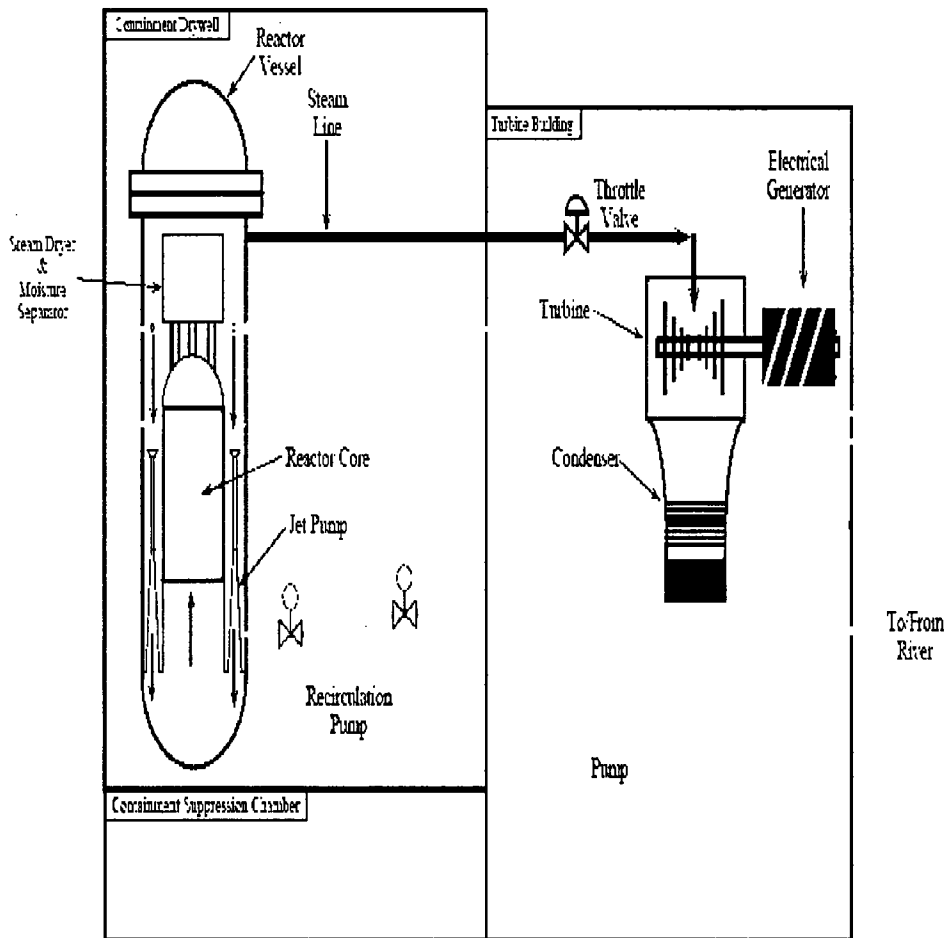
Salt formation rate

- Based on steaming rate, ~4,300 kg of salt (or 2 m³) is being added per day to the RPV for units 2-3.
 - Substantial uncertainties; these numbers are bounding
- Alternatively, information suggests that the steam might be flowing out the reactor pressure relief valve, while saturated water (is draining out the bottom of the core region and through the pump seals).
- So, the system may act as a salt separator with the salt deposited up on the reactor internals (steam dryers, separators etc) while saturated coolant flows out the bottom.
 - If this is the case then the units should be able to run for a while using seawater.

Energy Balances – what is required coolant flowrate?

Unit	Decay Heat (22 March)	Required water inlet flowrate for 100 % saturated steam at core exit and atmospheric pressure
1	2.8 MW	65 liters/minute 17 gpm 3.9 m ³ /hr
2-3	6.4 MW	150 liters/minute 40 gpm 9 m ³ /hr

flowpath



From: RST01B Hoc
Sent: Wednesday, March 23, 2011 9:48 AM
To: RST01 Hoc
Subject: FW: Tokyo March 23
Attachments: Response to TEPCO.DOCX

As discussed

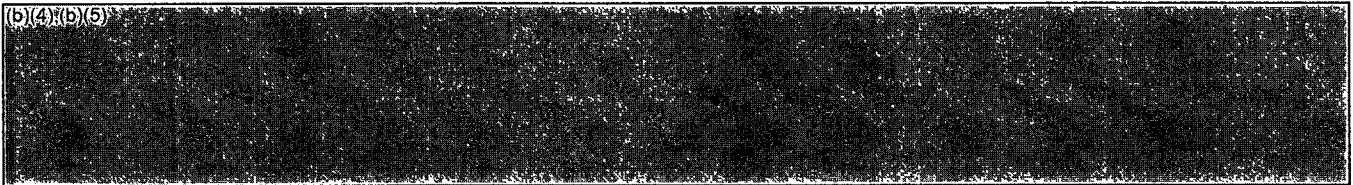
-----Original Message-----

From: Versluis, Rob [mailto:ROB.VERSLUIS@nuclear.energy.gov]
Sent: Wednesday, March 23, 2011 9:31 AM
To: RST01B Hoc
Subject: FW: Tokyo March 23

-----Original Message-----

From: Kelly, John E (NE)
Sent: Wednesday, March 23, 2011 8:33 AM
To: NITSolutions; NITOPS; SCHU
Cc: DL-NERT-All
Subject: FW: Tokyo March 23

(b)(4);(b)(5)



(b)(4);(b)(5) (b)(4);(b)(5)
(b)(5) (b)(4);(b)(5)
(b)(4);(b)(5)

John

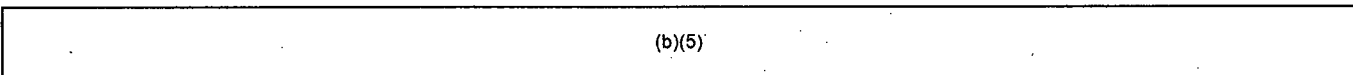
-----Original Message-----

From: Peko, Damian
Sent: Wednesday, March 23, 2011 5:40 AM
To: Peko, Damian; Lyons, Peter; Regalbutto, Monica; Johnson, Shane; Kelly, John E (NE); Lange, Robert; McGinnis, Edward; Boudreau, Robert; Golub, Sal; Harlow, Susan; Herczeg, John; Stark, Richard; Miotla, Dennis; Griffith, Andrew; Goldner, Frank; Duncan, Aleshia (State Dept); Connery, Joyce
Subject: Tokyo March 23

Pete et al

Some particularly important issues this time.

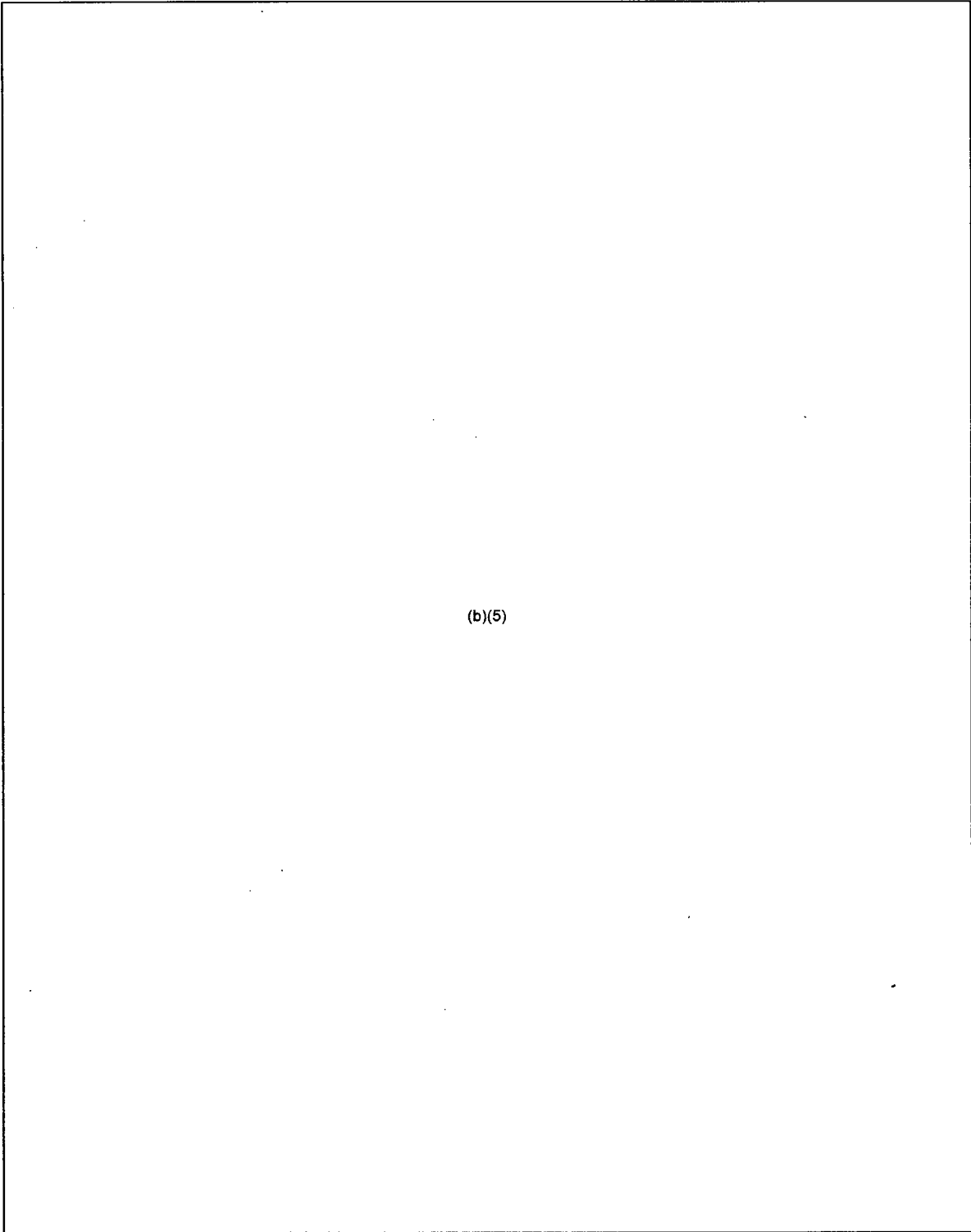
(b)(5)



(b)(5)

(b)(5)

Review of TEPCO Analysis of Salt Accumulation - March 22, 2011



(b)(5)

(b)(5)

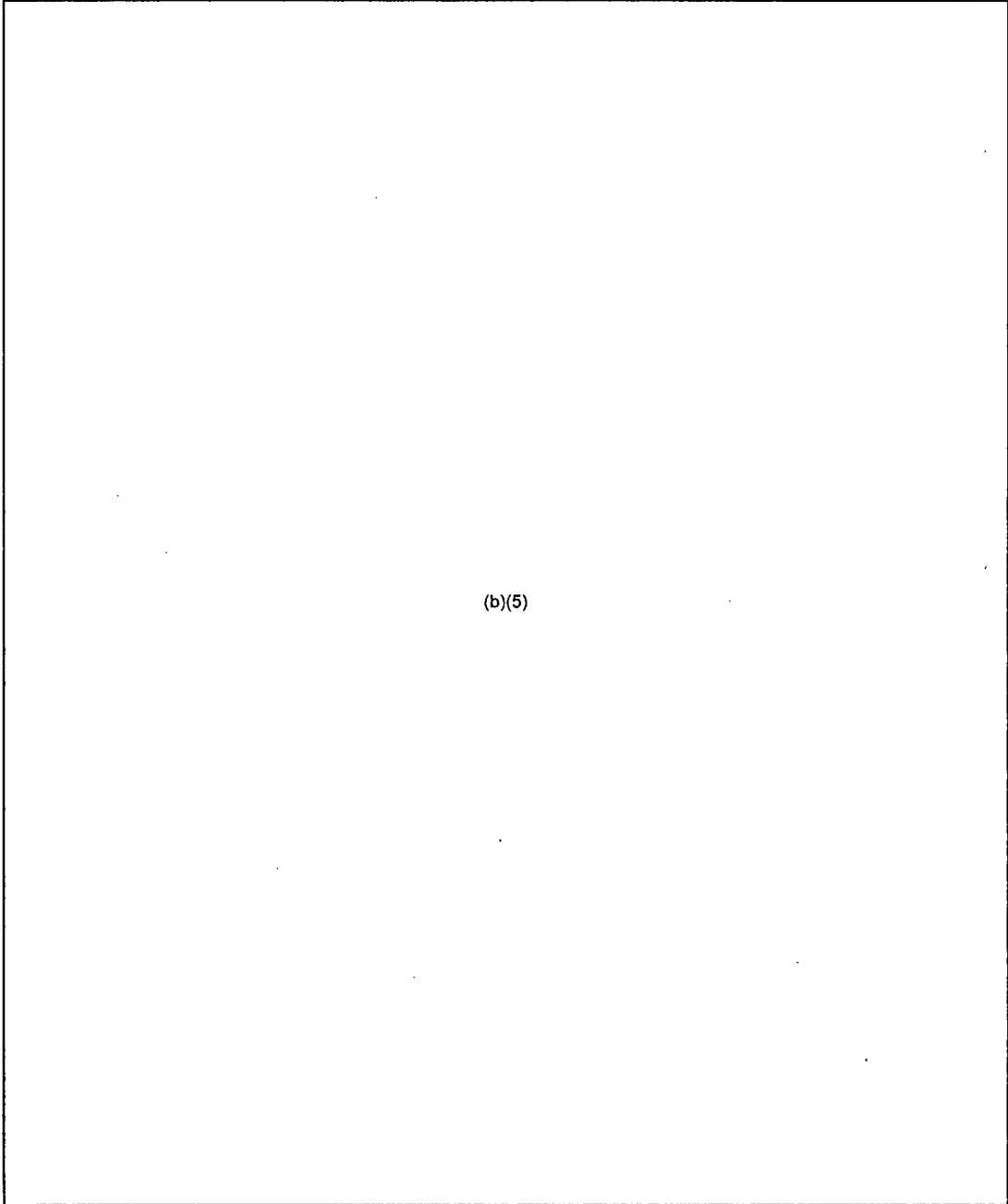
Best wishes as you deal with these extremely difficult circumstances.

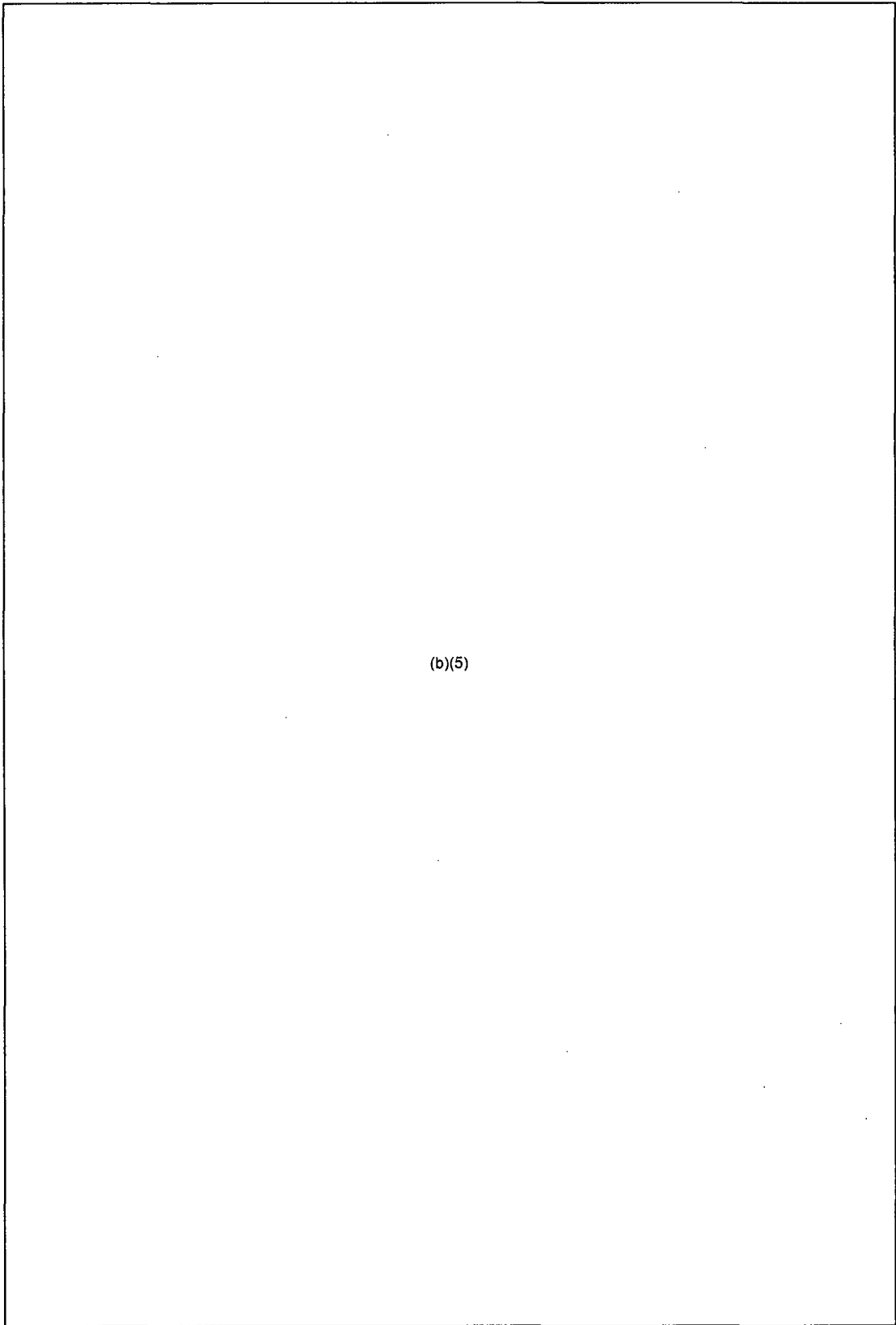
Dr. John E. Kelly
Deputy Assistant Secretary for Nuclear Reactor Technologies
Office of Nuclear Energy
US Department of Energy

Status of Fukushima Daiichi Reactors
19 March 2011
As of 1600 (EDT)

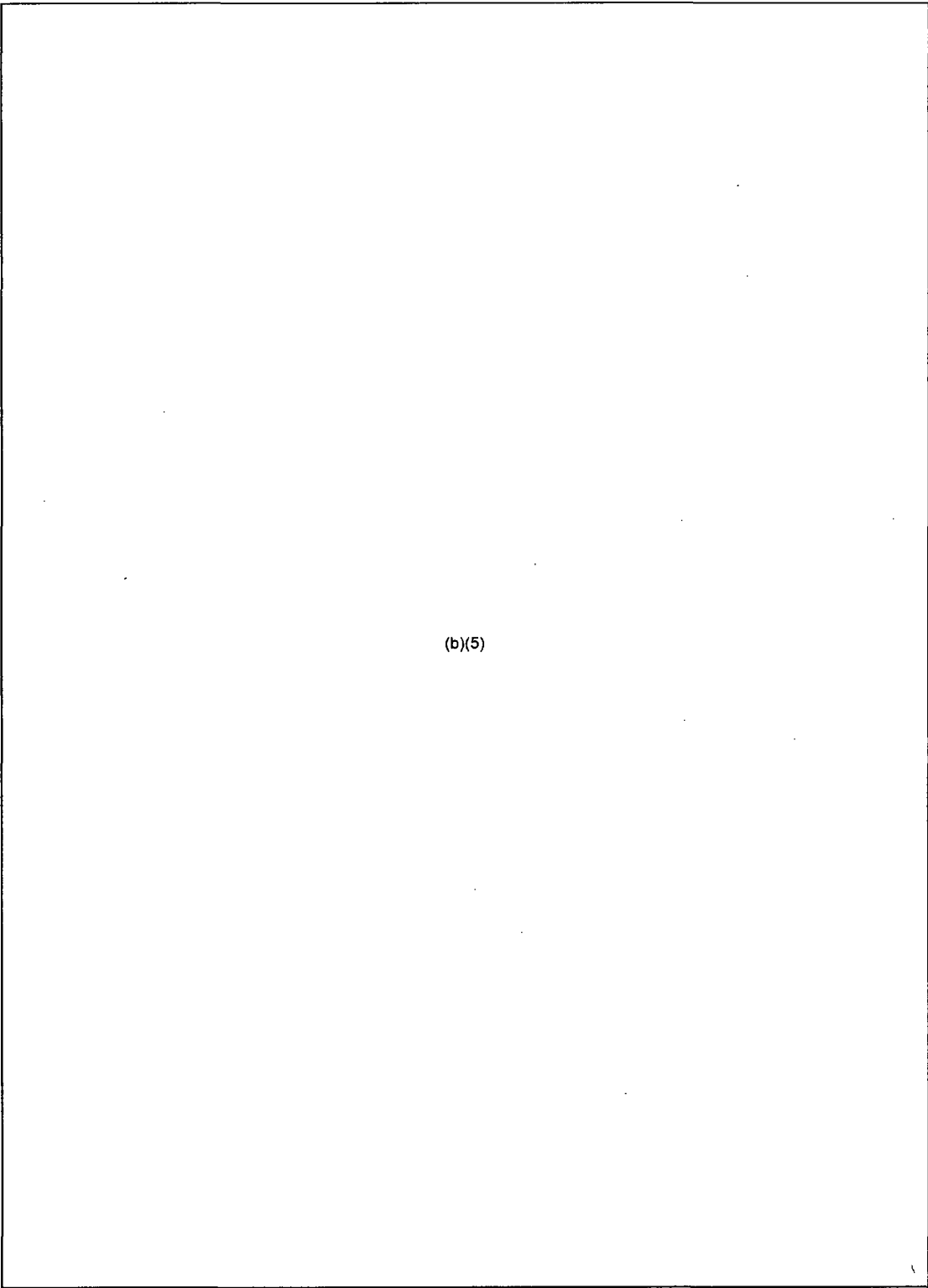
Underlined text indicates updates to this version. Older items will be deleted as necessary to minimize the size of this report and facilitate quick reading.

- **General**

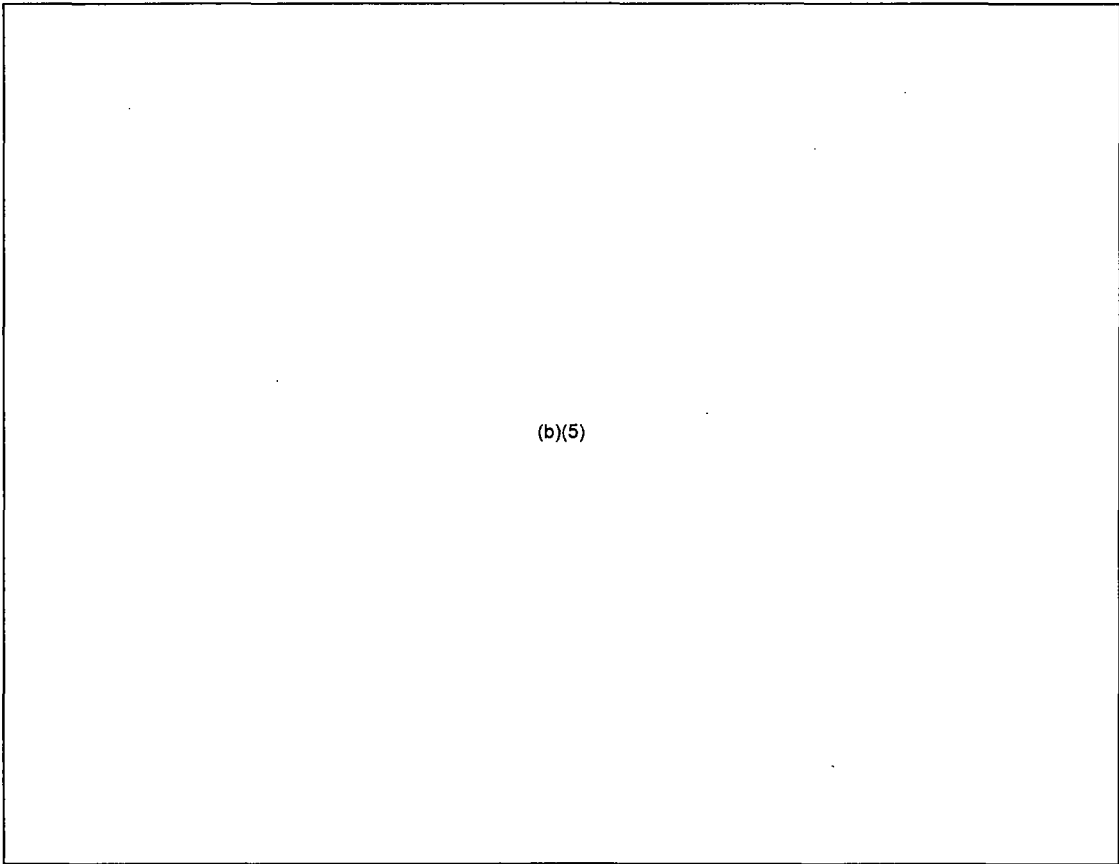




(b)(5)



(b)(5)



Sources include:

Federation of Electric Power Companies of Japan

Links:

<http://www.jaif.or.jp/english/>

<http://www.tepco.co.jp/en/index-e.html>

<http://nei.cachefly.net/newsandevents/information-on-the-japanese-earthquake-and-reactors-in-that-region/>

<http://www.iaea.org/>

<http://www.mext.go.jp/english/>

<https://portalwc.doe.gov/>

<http://www.nisa.meti.go.jp/english/>

From: LIA02 Hoc
Sent: Monday, March 21, 2011 5:31 PM
To: RST01 Hoc; RST01B Hoc
Subject: Smoke informaiton

NISA has reported:

- White smoke generated from Unit 2 (18:22 March 21st).
- Grayish smoke generated from Unit 3 (At around 15:55 March 21st).
- Thereafter the smoke was confirmed to be died down (17:55 March 21st).

TEPCO has reported:

- Smoke from unit 2 reactor building (as of 2100pm, March 21)
- Brown Smoke from unit3 reactor building (as of 2100 pm)

From: Hoc, PMT12
Sent: Friday, April 08, 2011 9:36 AM
To: LIA08 Hoc; LIA06 Hoc
Subject: Please print for Sam
Attachments: Untitled; Radiation data by MEXT

Thanks.

From: RST01 Hoc
Sent: Friday, March 18, 2011 3:45 PM
To: RST01B Hoc
Subject: FYI
Attachments: Japan Aid.xlsx

ITEM NO.	MATERIAL DESCRIPTION	U.O. ML	QUAN TTY	BEAVER MINING				RESURCT EQUIPMENT LIMITED (Ultimate Solution - 88 (Lowest))			CHUBB FIRE & SAFETY				ALGACOMMA				OMN MANUFACTURING & WA POTY TANKS				HOWARD PORTER				BENTCO				REGIONAL TRAILERS				ESTIMATED SIZE	COMMENTS
				UNIT PRICE	AVAIL QTY	TOTAL PRICE	AVAILABILITY	Rental PRICE Per Day	TOTAL PRICE	AVAILABILITY	UNIT PRICE	AVAIL QTY	TOTAL PRICE	AVAILABILITY	UNIT PRICE	AVAIL QTY	TOTAL PRICE	AVAILABILITY	UNIT PRICE	AVAIL QTY	TOTAL PRICE	AVAILABILITY	UNIT PRICE	AVAIL QTY	TOTAL PRICE	AVAILABILITY	UNIT PRICE	AVAIL QTY	TOTAL PRICE	AVAILABILITY	UNIT PRICE	AVAIL QTY	TOTAL PRICE	AVAILABILITY		
1	5" submersible pump 15000 and ancillaries	Each	4					AUD 16,500.00	TBC	2 units available ex-perth																							RESOURCES EQUIPMENT LIMITED (REL) has advised an alternate solution which exceed engineering requirements. Two (2) units available ex-stock (see attachment for details). Engineering to review and confirm.			
2	500 gpm jetting pump PU230 and ancillaries	Each	4					(Included in 1)																												
3	500 gpm spray pump PU230 and ancillaries	Each	4					(Included in 1)																												
4	500 gpm water cannon, 2-1/2" male cam-lock connection Stang Industries or equal	Each	4					(Included in 1)																										BEAVER MINING attached are the possible options of Cannon available ex-stock Melbourne. Engineering to review and advice if acceptable. RESOURCES EQUIPMENT LIMITED 2 units available ex-stock (see attachment for details). Contact Chris Wale, Mobile: 0438 414 545		
5	8" C.S. cam-lock male adaptor with 8" flange to mount to booster pump section	Each	4	TBC	4			Ex-Perth, Australian Flange	(Included in 1)																											
6	2-1/2" C.S. cam-lock male adaptor with 2-1/2" flange to mount to booster pump section	Each	8	TBC	8			Ex-Perth, Australian Flange	(Included in 1)																											
7	2-1/2" high pressure fire hose with 2-1/2" C.S. cam-lock couplings. Each hose length to have a male fitting on one end and female on the other.	Meters	3,353	TBC	3,353			Ex-Sydney 12x100 meter (No Couplings) 10000m (No Couplings)-RED 41130m (No Couplings)-Yellow Ex-Melbourne 21130m (with camlock couplings)-RED 87300 (No Couplings)-RED Note- Aluminium camlock couplings for the fittings can be arranged based on the confirmation of what type hose is required	(Included in 1)																											
720	8" high pressure fire hose with 1" C.S. cam-lock couplings. Each hose length to have a male fitting on one end and female on the other.	Meters	3,353	#####	1,335	#####	335M ex-perth, 1320m ex-sydney, 30100m ex-melbourne	(Included in 1)	#####	300	#####	300 meter available	#####	800	#####	800 meter available	Ex-Melbourne, Brisbane & Sydney 100 PSI rating																		Only 2435 meter available against total requirement of 3,353 meter	
720	Beaver Couplings, 1500G Galv Steel Complete Set	Each	350	#####	350	#####	Ex-Perth	(Included in 1)																												
720	Clamp Double-End Galv 151-185mm	Each	75	#####	75	#####	Ex-Perth/Gesackon	(Included in 1)																												
8	C.S. Water Jet Eductor, 2-1/2" at 500 GPM with 1" chemical mixing jet connection, 2-1/2" C.S. male cam-lock fittings: at supply and discharge	Each	4	Not Quoted				(Included in 1)																										Need more technical info		
9	1" diesel fuel oil hose 27' length fitted with 1" hose male threaded fittings each end (6 metre length)	Meters	48	#####	48	#####	Ex-Stock Perth	(Included in 1)																												
10	1" brass ball valves with female third end	Each	8	#####	8	AUD 80.00	Ex-Stock Perth	(Included in 1)																												
11	2-1/2" C.S. Cam-lock fittings with 2-1/2" hose shank ends in oper, provide a male/female sets	Each	20	TBC	20		Ex-Perth, Australian Flange	(Included in 1)																												
11	175gal fuel oil tank (suitable for mounting on a trailer)	Each	16					(Included in 1)																										COATES: Half a dozen diesel tanks available with Coates ex-Perth. Awaiting confirmation from their management that these are available for purchase		
11	Fuel oil tank (suitable for mounting on a trailer) 800 Litres	Each	6					(Included in 1)																												
11	Fuel oil tank (suitable for mounting on a trailer) 800 Litres	Each	2					(Included in 1)																												
11	Fuel oil tank (suitable for mounting on a trailer) 600 Litres	Each	8					(Included in 1)																												
13	500 gal plastic tank for bonon storage	Each	4		4																															
14	Flatbed Trailer - 40 ft by 8 ft, with tongue and pin connection, front and back axle, rubber tires, front axle steerable, tongue with pin connection for towing (w/axlelock and pintle)	Each	5		5																															
14	Flatbed Trailer - 40 ft by 8 ft, with tongue and pin connection, front and back axle, rubber tires, front axle steerable, tongue with pin connection for towing. For delivery (Ready for delivery)	Each	1		1																														13.7Mx2.5Mx1.4M, 7800kg	
14	Flatbed Trailer - 40 ft by 8 ft, with tongue and pin connection, front and back axle, rubber tires, front axle steerable, tongue with pin connection for towing. For delivery (Ready for delivery)	Each	3		3																														13.7Mx2.5Mx1.4M, 7800kg	
15	Trailer - 12 ft by 6 feet with axle front and back axle, rubber tires, tongue with pin connection for towing	Each	16		16																														13.7Mx2.5Mx1.4M, 7800kg	

From: RST01B Hoc
Sent: Thursday, March 17, 2011 10:58 AM
To: Thomas, Eric
Subject: Talking Points Provided by DHS National JIC
Attachments: Talking Points Provided by DHS National JIC.pdf

**Talking Points Provided by DHS – NATIONAL JIC
2:54pm, March 16, 2011**

IF ASKED about any questions about harmful radiation headed towards the US: NRC Chairman Jaczko continues to say the following: "You just aren't going to have any radiological material that, by the time it traveled those large distances, could present any risk to the American public."

Topline Points

- The United States is continuing to do everything in its power to help Japan and American citizens who were there at the time of these tragic events.
- USAID is coordinating the overall U.S. government efforts in support of the Japanese government's response and are currently directing individuals to www.usaid.gov for information about response donations.
- The President is being kept up to date and is constantly being briefed by his national security staff. The National Security staff in the White House is also coordinating a large interagency response with experts meeting around the clock to monitor the latest information coming out of Japan.
- We have offered our Japanese friends includes disaster response experts, search and rescue teams, technical advisers with nuclear expertise and logistical support from the United States military.
- In response to the deteriorating situation at the Fukushima Nuclear Power Plant, the United States Nuclear Regulatory Commission (NRC), the Department of Energy and other technical experts in the U.S. Government have reviewed the scientific and technical information they have collected from assets in country, as well as what the Government of Japan has disseminated. Consistent with the NRC guidelines that would apply to such a situation in the United States, we are recommending, as a precaution, that American citizens who live within 50 miles (80 kilometers) of the Fukushima Nuclear Power Plant evacuate the area or to take shelter indoors if safe evacuation is not practical.
- We want to underscore that there are numerous factors in the aftermath of the earthquake and Tsunami, including weather, wind direction and speed, and the nature of the reactor problem that affect the risk of radioactive contamination within this 50 mile radius or the possibility of lower-level radioactive materials reaching greater distances.
- To support our citizens there, the Embassy is working around the clock, we have our consular services available 24 hours a day to determine the whereabouts and well-being of all U.S. citizens in Japan. U.S. citizens in need of emergency assistance should send an e-mail to JapanEmergencyUSC@state.gov with detailed information about their location and contact information, and monitor the U.S. Department of State website at travel.state.gov.

As I said earlier, we have offered our Japanese friends disaster response experts, search and rescue teams, technical advisers with nuclear expertise and logistical support from the United States military.

- Secretary Chu announced that DOE offered and Japan accepted an Aerial Measuring System capability, including detectors and analytical equipment used to provide assessments of contamination on the ground. In total, the DOE team includes 34 people.
- USAID set up a Response Management Team in DC and sent a Disaster Assistance Response Team to Tokyo, which includes people with nuclear expertise from the Departments of Energy and Health and Human Services as well the Nuclear Regulatory Commission (NRC). The NRC members are experts in boiling water nuclear reactors and are available to assist their Japanese counterparts.
- Two Urban Search and Rescue Teams (LA County and Fairfax County teams) which total 144 members plus 12 search and rescue canines and up to 45 metric tons of rescue equipment have begun searching for survivors.
- The Department of Defense has the USS Reagan on station off the coast of Japan and is currently using an air facility in Misawa as a forward operating base.
- The American Red Cross (ARC) International Services team is supporting the Japanese Red Cross Society (JRCS) to assess the impact, determine response efforts, and assist the people of Japan.
- USAID is hosting a daily conference call with Congressional staff, including participation from DoD, DoS, NRC, DoE, and HHS. The U.S. officials will continue to provide a brief overview of each agency's efforts in the response to Japan and respond to questions from the Congressional staff regarding humanitarian assistance, military assistance, and the nuclear plant situation.
- Currently nearly 5300 US military members are supporting the disaster relief efforts. There are 8 ships, including the aircraft carrier USS Ronald Reagan, transport aircraft and more than 100 military helos are being repositioned to northern Japan to support the efforts.
- The US military has flown reconnaissance flights and provided the Japanese government with images of the areas affected by the earthquake and tsunami. Search and rescue flights and missions along the coast continue, relief operations including delivery of food, water and other relief supplies also continue.
- Yokota Air Base is serving as a humanitarian relief operations staging area and Misawa Air Base is serving as both a logistical hub for humanitarian relief and rescue workers as well as an operating base for U.S., Japanese and other international helos and aircraft.

Here at a home, the government is doing a number of things as well.

- The US Government will be studying every aspect of the Japanese disaster and the Japanese government's response, with the goal of learning as much as possible from that review.
- As the Nuclear Regulatory Commission has said, we do not expect to see radiation at harmful levels reaching the U.S. from damaged Japanese nuclear power plants. As part of the federal government's continuing effort to make our activities and science transparent and available to the public, the Environmental Protection Agency (EPA) will continue to keep all RadNet data available in the current online database. In addition, EPA plans to work with its federal partners to deploy additional monitoring capabilities to parts of the western U.S. and U.S. territories.
- As always, EPA is utilizing this existing nationwide radiation monitoring system, RadNet, which continuously monitors the nation's air and regularly monitors drinking water, milk and precipitation for environmental radiation. The RadNet online searchable database contains historical data of environmental radiation monitoring data from all fifty states and U.S. territories.
- The FDA and USDA continues to ensure all our imported food remains safe as they do everyday
- If there were to be a nuclear accident here, we are prepared to respond and FEMA and the Department of Homeland Security exercise these preparedness plans with the rest of the government and state and local officials as well. Release of radioactive materials can be accidental or intentional and we have a detailed plan to respond regardless of the cause. The Nuclear/Radiological Incident Annex to the National Response Framework outlines which department or agency would have the lead for the Federal response depending on the source and type of release. For example, the Nuclear Regulatory Commission (NRC) would coordinate a response to a release at nuclear power facilities licensed by the NRC. The Department of Energy would coordinate a response to a release involving nuclear weapons in DOE custody. The Department of Homeland Security would coordinate a response to a deliberate attack using improvised nuclear devices or radiological dispersal devices.
- Given the range of potential causes, from an earthquake to a terrorist attack, the plan provides the flexibility and agility we need to respond aggressively and effectively. In addition, state and local officials and nuclear facilities have detailed emergency plans that include specific protective actions, evacuation routes, and methods to alert the public of actions to take in the event of an emergency. There is a robust and active nuclear power plant accident exercise program that includes Federal, State, and local involvement to test plans and keep them current, and just last year we conducted such an exercise. Federal protective action guides are used at all nuclear power plants and are widely accepted and used in planning and exercises, and we will continue our efforts to plan and prepare for the safety and security of the American people.

From: RST01B Hoc
Sent: Thursday, March 17, 2011 10:57 AM
To: Thomas, Eric
Subject: Talking points
Attachments: boardfile.pdf

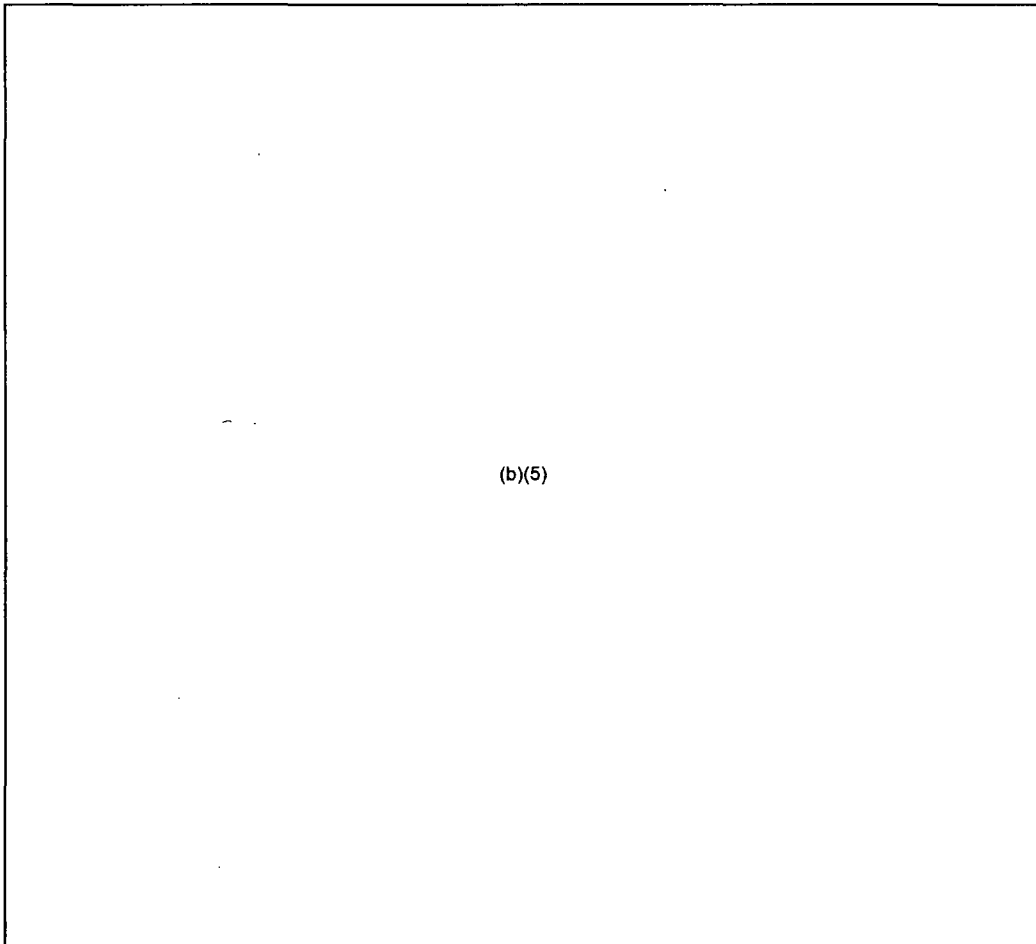
OPA

TALKING POINTS

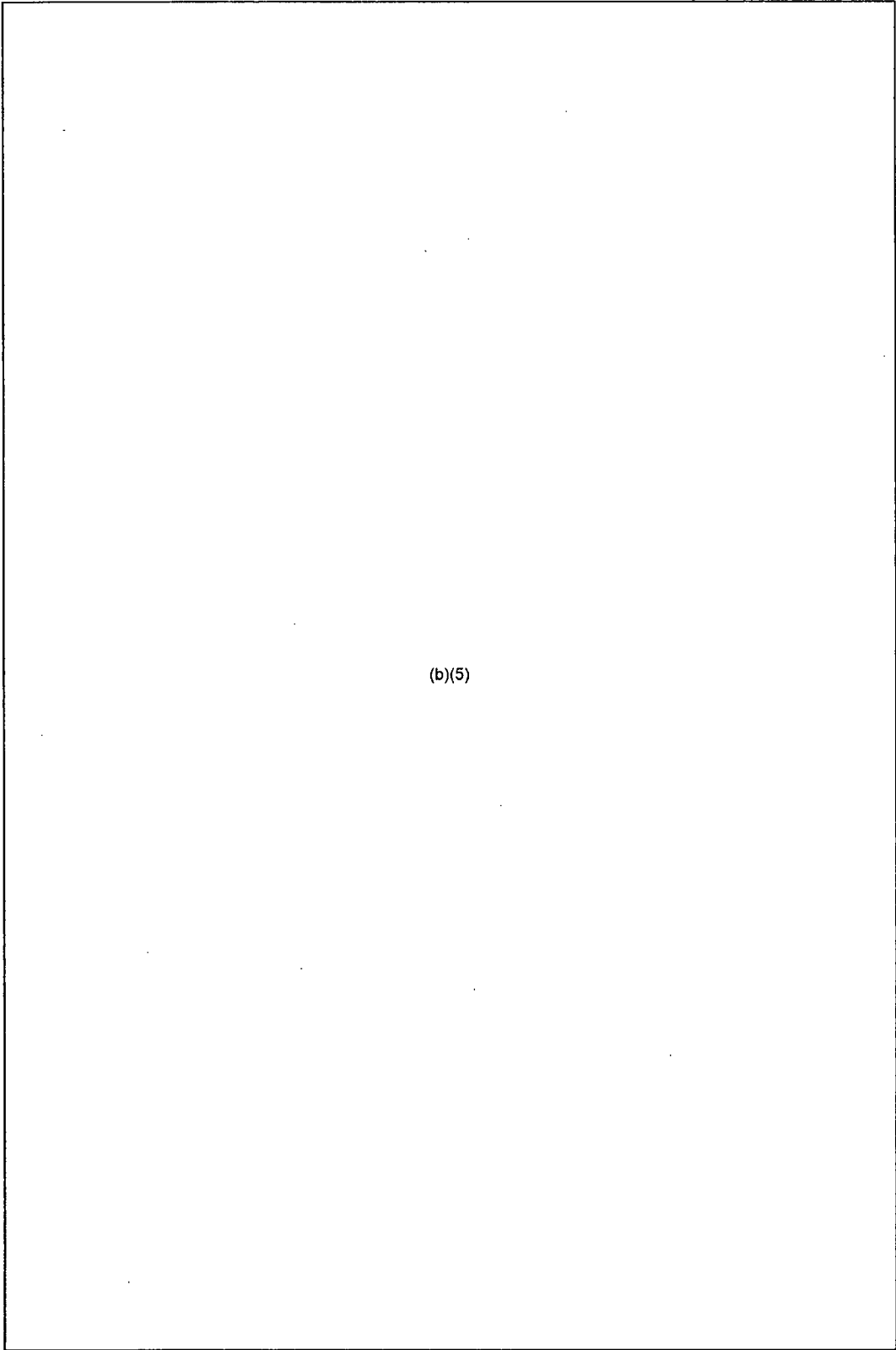
JAPAN NUCLEAR SITUATION

As of 3/16/2011 7:15 p.m. EDT

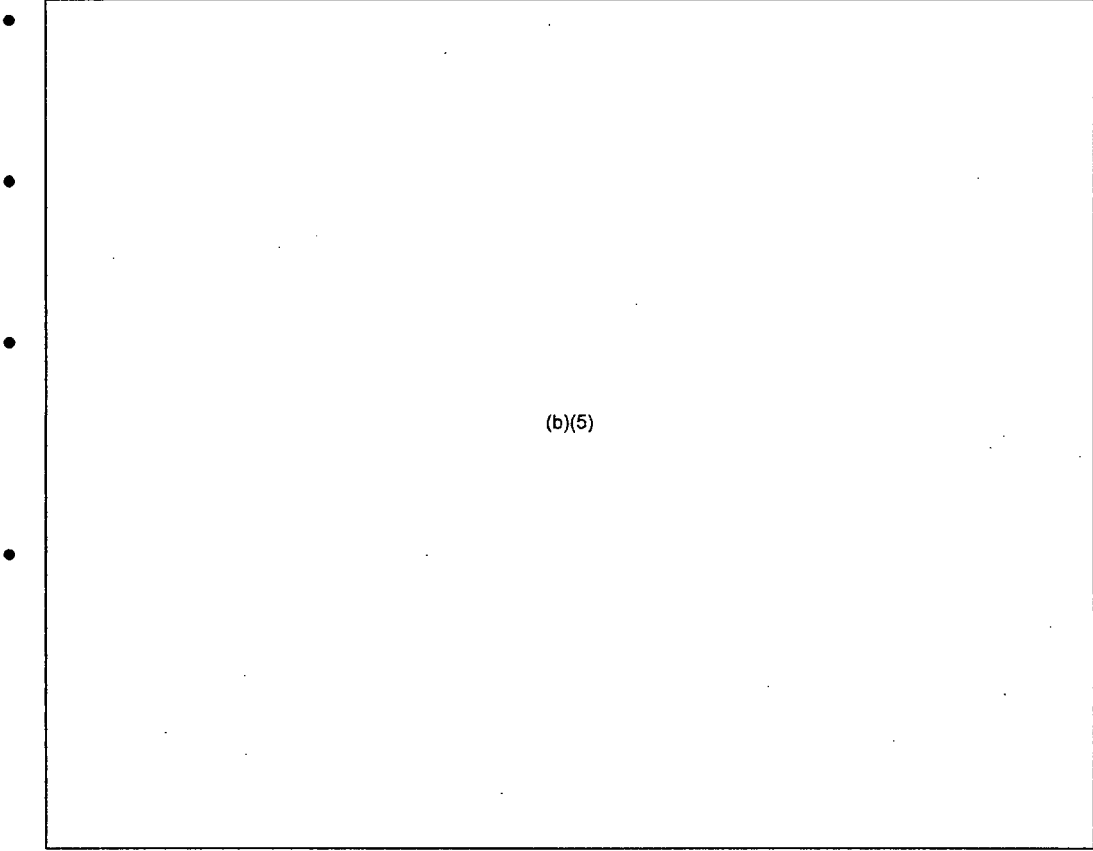
Update: Addition of bullet on status of SFPs

- 
-
-

(b)(5)



(b)(5)



(b)(5)

From: Emche, Danielle
Sent: Wednesday, March 16, 2011 3:43 PM
To: LIA02 Hoc; LIA03 Hoc; RST01B Hoc; RST01 Hoc
Subject: NISA news releasase
Attachments: NISA1.pdf

Resending!

There's a time delay due to translation mostly but it was just posted.
Danielle

From: Emche, Danielle
Sent: Wednesday, March 16, 2011 2:45 PM
To: RST01 Hoc; RST01B Hoc; LIA02 Hoc; LIA03 Hoc
Subject: Emailing: ENGNEWS01_1300240000P.pdf
Attachments: ENGNEWS01_1300240000P.pdf

Attached is an update to the Japan Atomic Industrial Forum Estimates. The japan desk previously provided an update at 0800 hours March 16. A hardy copy with the deltas indicated is on its way to the Ops Center.

	Not Damaged	Damage Suspected	Not Damaged	Not Damaged	Not Damaged	Not Damaged
er				Not necessary	Not necessary	Not neces
power				Not necessary	Not necessary	Not neces
		Slightly Damaged		Partially Damaged	Not Damaged	Not Dam
ssel				Safe	Safe	Safe
el	Stable	Fluctuating	Stable	Safe	Safe	Safe
	Stable	D/W: Unknown, S/P: Atmosphere	Stable	Safe	Safe	Safe
				Not necessary	Not necessary	Not neces
ment Vessel		to be decided	to be decided	Not necessary	Not necessary	Not neces
		Preparing		Not necessary	Not necessary	Not neces
	(No info)	(No info)	(No info)		SFP Level Decreasing	SFP Level De

NPS border: 6308 μ Sv/h at 23:35, Mar. 15

20km from NPS

* People who live between 20km to 30km from the Fukushima #1NPS are to stay indoors.

Level 4 (estimated by NISA)

A fire broke on the 4th floor of the Unit-4 Reactor Building around 6AM, Mar. 15, and the radiation monitor readings increased outside of the building: 30mSv between Unit-2 and Unit-3, 400mSv beside Unit-3, 100mSv beside Unit-4 at 10:22, Mar. 15. It is estimated that spent fuels stored in the spent fuel pit heated and hydrogen was generated from these fuels, resulting in explosion. TEPCO later announced the fire had been extinguished. Another fire was observed at 5:45, Mar. 16, and then disappeared later. Other staff and workers than fifty TEPCO employees who are engaged in water injection operation have been evacuated.

Fukushima #2 Nuclear Power Station				
	1	2	3	4
ut (MWe)	1100 / 3293			
quake occurred	BWR-5 Service	BWR-5 Service	BWR-5 Service	BWR-5 Service
	Not Damaged	Not Damaged	Not Damaged	Not Damaged
	Not Damaged	Not Damaged	Not Damaged	Not Damaged
er	Functioning	Functioning	Functioning	Functioning
power	Not necessary	Not necessary	Not necessary	Not necessary
	Not Damaged	Not Damaged	Not Damaged	Not Damaged
ssel	(No info)	(No info)	(No info)	(No info)
el	(No info)	(No info)	(No info)	(No info)
	(No info)	(No info)	(No info)	(No info)
	Not necessary	Not necessary	Not necessary	Not necessary
ment Vessel	Not necessary	Not necessary	Not necessary	Not necessary
	Not necessary	Not necessary	Not necessary	Not necessary
	NPS border: 8.99 μ Sv/h at 0:00, Mar. 16			
	10km from NPS			
	(No Info)			
	(No Info)			
	All the units are in cold shutdown.			

[Significance]

: low

From: Hasselberg, Rick
Sent: Tuesday, March 15, 2011 2:25 PM
To: RST01B Hoc
Subject: FW: NBC deadline question for NRC on seismic hazard estimates
Attachments: NBC_questions_2.docx; image001.gif

From: Sigmon, Rebecca
Sent: Tuesday, March 15, 2011 2:22 PM
To: Thomas, Eric
Cc: Meighan, Sean; Nguyen, Quynh; Hasselberg, Rick
Subject: FW: NBC deadline question for NRC on seismic hazard estimates

FYI, these are answers to the questions from the NBC reporter regarding recent NRC seismic research that were put together by Kamal Manoly in NRR and Ben Beasley in RES. They have been provided to OPA.

Rebecca Sigmon
Reactor Systems Engineer
NRR/DIRS/IOEB
Operating Experience Branch
(301) 415-4018
Rebecca.Sigmon@nrc.gov

From: Manoly, Kamal
Sent: Tuesday, March 15, 2011 2:15 PM
To: Sigmon, Rebecca
Subject: FW: NBC deadline question for NRC on seismic hazard estimates

From: Beasley, Benjamin
Sent: Tuesday, March 15, 2011 12:52 PM
To: Couret, Ivonne
Cc: Wilson, George; Manoly, Kamal; Ake, Jon; Stutzke, Martin; Kammerer, Annie; Murphy, Andrew; Munson, Clifford; Kauffman, John
Subject: RE: NBC deadline question for NRC on seismic hazard estimates

Ivonne,

Answers are provided in the attached Word document. I will be in a low priority meeting for the next couple of hours. If you want us to support a telephone interview, please call me at (b)(6)

Ben

From: Couret, Ivonne
Sent: Tuesday, March 15, 2011 11:31 AM
To: Beasley, Benjamin

Cc: Wilson, George
Subject: RE: NBC deadline question for NRC on seismic hazard estimates

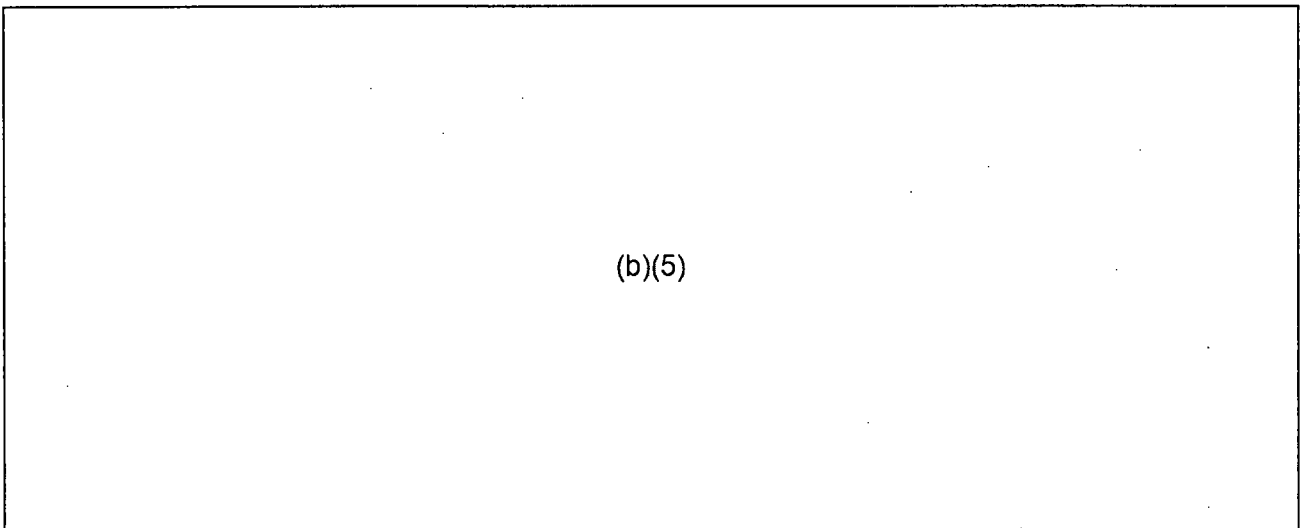
I just spoke to the reporter if we can give him written responses and coordinate a phone interview/review of items. When you guys are ready we can do this before 5p.m. Thanks for ALL you do! Ivonne

From: Beasley, Benjamin
Sent: Tuesday, March 15, 2011 11:29 AM
To: Couret, Ivonne
Cc: Wilson, George
Subject: FW: NBC deadline question for NRC on seismic hazard estimates
Importance: High

Ivonne,

I am coordinating the assembly of answers for the NBC reporter on GI-199. We are still working, but draft answers are:

- 1.
- 2.
- 3.
- 4.



I will send an update after I get final information. Please let me know if there is something else we can do.

Ben Beasley



U.S. Nuclear Regulatory Commission

Benjamin Beasley, Chief
Operating Experience and Generic Issues Branch
Division of Risk Analysis
Office of Nuclear Regulatory Research
301-251-7676
Benjamin.Beasley@nrc.gov
[Generic Issues Program](#)
[Operating Experience Databases](#)

From: Wilson, George
Sent: Tuesday, March 15, 2011 9:31 AM
To: Beasley, Benjamin
Subject: FW: NBC deadline question for NRC on seismic hazard estimates
Importance: High

fyi

From: Hiland, Patrick
Sent: Tuesday, March 15, 2011 9:20 AM
To: Wilson, George; Manoly, Kamal
Cc: Stutzke, Martin; Ake, Jon; Coe, Doug; Skeen, David; Scales, Kerby
Subject: FW: NBC deadline question for NRC on seismic hazard estimates
Importance: High

Need to work with OPA, and RES. Kamal should coordinate with RES, and I suggest Marty/Jon respond directly through RES. Doug Coe is good source also for the GI. Get OPA involved.

From: Bill Dedman [mailto:Bill.Dedman@msnbc.com]
Sent: Tuesday, March 15, 2011 9:06 AM
To: Manoly, Kamal; Sheron, Brian; Hiland, Patrick; OPA Resource
Subject: NBC deadline question for NRC on seismic hazard estimates

Good morning,

My name is Bill Dedman. I'm a reporter for NBC News and msnbc.com, writing an article today about:

SAFETY/RISK ASSESSMENT RESULTS FOR GENERIC ISSUE 199, "IMPLICATIONS OF UPDATED PROBABILISTIC SEISMIC HAZARD ESTIMATES IN CENTRAL AND EASTERN UNITED STATES ON EXISTING PLANTS"

I reached out to NRC Public Affairs yesterday but have not heard back, and my deadline is end-of-day today. I'm hoping to get on the phone today with someone from NRC to make sure I'm conveying this information accurately to the public. If nothing else, I'm hoping one of the technical people can help clarify the points below. My telephone number is (b)(6)

(b)(6)

I've read Director Brian Sheron's memo of Sept. 2, 2010, to Mr. Patrick Hiland; the safety/risk assessment of August 2010; its appendices A through D; NRC Information Notice 2010-18; and the fact sheet from public affairs from November 2010.

I have these questions:

1. I'd like to make sure that I accurately place in layman's terms the seismic hazard estimates. I need to make sure that I'm understanding the nomenclature for expressing the seismic core-damage frequencies. Let's say there's an estimate expressed as "2.5E-06." (I'm looking at Table D-2 of the safety/risk assessment of August 2010.) I believe that this expression means the same as 2.5×10^{-6} , or 0.0000025, or 2.5 divided by one million. In layman's terms, that means an expectation, on average, of 2.5 events every million years, or once every 400,000 years. Similarly, "2.5E-05" would be 2.5 divided by 100,000, or 2.5 events every 100,000 years, on average, or once every 40,000 years. Is this correct?
2. These documents give updated probabilistic seismic hazard estimates for existing nuclear power plants in the Central and Eastern U.S. What document has the latest seismic hazard estimates (probabilistic or not) for existing nuclear power plants in the Western U.S.?
3. The documents refer to newer data on the way. Have NRC, USGS et al. released those? I'm referring to this: "New consensus seismic-hazard estimates will become available in late 2010 or early 2011 (these are a product of a joint NRC,

U.S. Department of Energy, U.S. Geological Survey (USGS) and Electric Power Research Institute (EPRI) project). These consensus seismic hazard estimates will supersede the existing EPRI, Lawrence Livermore National Laboratory, and USGS hazard estimates used in the GI-199 Safety/Risk Assessment."

4. What is the timetable now for consideration of any regulatory changes from this research?

Thank you for your help.

Regards,

Bill Dedman

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From Bill Dedman, a reporter for NBC News and msnbc.com,
He has these questions:

1. I'd like to make sure that I accurately place in layman's terms the seismic hazard estimates. I need to make sure that I'm understanding the nomenclature for expressing the seismic core-damage frequencies. Let's say there's an estimate expressed as "2.5E-06." (I'm looking at Table D-2 of the safety/risk assessment of August 2010.) I believe that this expression means the same as 2.5×10^{-6} , or 0.0000025, or 2.5 divided by one million. In layman's terms, that means an expectation, on average, of 2.5 events every million years, or once every 400,000 years. Similarly, "2.5E-05" would be 2.5 divided by 100,000, or 2.5 events every 100,000 years, on average, or once every 40,000 years. Is this correct?

(b)(5)

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(b)(5)

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(b)(5)

4. What is the timetable now for consideration of any regulatory changes from this research?

(b)(5)

From: LIA02 Hoc
Sent: Tuesday, March 15, 2011 12:50 PM
To: RST01 Hoc; RST01B Hoc
Subject: FW: Japanese Nuclear Plant Status

FYI from WANO

From: NSD.EMERGENCY@hse.gsi.gov.uk [mailto:NSD.EMERGENCY@hse.gsi.gov.uk]
Sent: Tuesday, March 15, 2011 12:48 PM
To: vperm@international.gc.ca; NSD.EMERGENCY@hse.gsi.gov.uk; Anthony.Hinton@international.gc.ca; Shawn.Caza@international.gc.ca; ShafferMr@state.gov; LIA02 Hoc
Subject: FW: Japanese Nuclear Plant Status

For your information, please see info below which came from WANO.

ND Incident Suite
nsdemergency@hse.gsi.gov.uk
0044-151-951-4161

Sent: Tue Mar 15 11:05:26 2011
Subject: Re: Japanese Nuclear Plant Status

Dear all
Please correct 0.4 MPa instead of 4 MPa of unit-2 containment pressure.

>>> Bob Cockrell 15/03/2011 10:58 >>>
WANO UPDATE 8

Fukushima Daiichi Unit 2--The safety relief valve that had closed, interrupting seawater injection was reopened and injection resumed around 0200. During the early morning (~0600 JST) on 15 March a noise similar to an explosion was heard in the vicinity of the lower portion of the unit 2 containment or suppression pool. Subsequently the suppression pool pressure went off-scale low. However, containment pressure is reported stable at about 4 MPa, which is close to containment design pressure.

Fukushima Daiichi Unit 4--A loud noise was heard in the vicinity of the top floor of the reactor building, also at about 0600 JST. The wall panels and roof of the upper reactor building were subsequently observed to be deformed. About three hours later, a fire occurred on a recirculation system motor-generator set on the third floor of the reactor building based on observation from outside. This fire appeared to go out as preparations were being made to fight it. The unit had been in an outage at the time of the earthquake and all the fuel is in the spent fuel pool. Fuel pool cooling is unavailable. Pool temperature readings are ~84 C, but reliability of the readings are unknown.

General--Radiation levels have increased and are becoming very high in some areas, particularly in the vicinity of units 1 through 3. Readings have been reported ranging from 32 mSv/hr (3.2 Rem/hr) to 400 mSv/hr (40 Rem/hr) in the vicinity of units 1 through 4. Off site measurements are detecting readings above normal. The control rooms for units 1-3 are not habitable and are unmanned. Status of manning of unit 4 control room unknown.

.....
Please note : Incoming and outgoing email messages are routinely monitored for compliance with our policy on the use of electronic communications and may be automatically logged, monitored and / or recorded for lawful purposes by the GSI service provider.
Interested in Occupational Health and Safety information?
Please visit the HSE website at the following address to keep yourself up to date
www.hse.gov.uk
Or contact the HSE Infoline on 0845 345 0055 or email hse.infoline@natbrit.com
.....

The original of this email was scanned for viruses by the Government Secure Intranet virus scanning service supplied by Cable&Wireless Worldwide in partnership with MessageLabs. (CCTM Certificate Number 2009/09/0052.) On leaving the GSi this email was certified virus free.
Communications via the GSi may be automatically logged, monitored and/or recorded for legal purposes.

From: LIA02 Hoc
Sent: Monday, March 14, 2011 10:10 PM
To: RST01B Hoc
Subject: FW: Request for Assistance from Tokyo Electric & Power

From: Cooper, Justin D [mailto:CooperJD@state.gov]
Sent: Monday, March 14, 2011 9:43 PM
To: USFJ-CAT-CHIEF
Cc: LIA02 Hoc
Subject: Request for Assistance from Tokyo Electric & Power

Just received call from Mr Katano from Tokyo Power & Electric:

- Unit 4 Fukushima now has fire on site
- Request help to extinguish
- Nuclear Fuel / Oil on fire
- Request assistance with firetrucks to extinguish fire
- Request assistance with helicopters as well
- Extinguish requires water / boron / boric acid
- They will designate safe area for responders

Justin D. Cooper II
Captain USN
Defense Attache
Senior Defense Official
U.S. Embassy, Tokyo, Japan

Ph: 03-3224-5375

1-10-5, Akasaka
Minato-ku, Tokyo 107-8420

This email is UNCLASSIFIED.

To: Trapp, James
Subject: Request for Assistance from Tokyo Electric and Power

Just received call from Mr. Katano from Tokyo Power & Electric:

Unit 4

From: RST01B Hoc
Sent: Monday, March 14, 2011 12:54 PM
To: Trapp, James; Ulses, Anthony
Subject: Resend: Quad City SAMGs
Attachments: Quad City SAMG-2, Daiichi 2 & 3.pdf; Quad City SAMG-1 Daiichi 2 & 3.pdf

Jim & Tony, (with Attachments this time)

Here are the Severe Accident Guidelines For Quad City, similar to Daiichi Units 2 & 3.

They are large but that's for minimum readability.

Daiichi can use these for strategies for Units 2 & 3.

Dresden sent in previous email.

Peter Alter
BWR Trainer now with Coordination Branch
(w) 301-415-7996
or RST Room in Ops Center

external sources except drywell sprays.

2. IF.....you still cannot stay below the Primary Containment Pressure Limit (Fig D),

THEN.. • Vent the primary containment (QCOP 1600-13) to control torus pressure below the Primary Containment Pressure Limit (Fig D).

• IF.....you reach the Primary Containment Pressure Limit (Fig D),

AND.....you can hold RPV water level above -287 in. (BAF),

THEN...stop RPV injection from outside the primary containment except boron injection from SBLC.

CONTAINMENT VENTING

I When:

- As necessary to increase RPV injection.
- As necessary to help flood containment.
- To control torus pressure below the Primary Containment Pressure Limit (Fig D) (see Containment Level/Pressure Limits above).
- As required by SAMG-2.



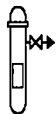
I Methods:

- See QCOP 1600-13.

RPV VENTING

I When:

- Primary containment water level is higher than RPV water level.



I Methods:

- See Detail F.

DRYWELL SPRAYS

I When:

- As required by SAMG-2.



I Initiate only if:

- You can hold RPV water level above -287 in. (BAF),
- AND
- Drywell temperature is below the Drywell Spray Initiation Limit (Fig K),
- AND

external sources except drywell sprays.

2. IF.....you still cannot stay below the Primary Containment Pressure Limit (Fig D),

THEN.. • Vent the primary containment (QCOP 1600-13) to control torus pressure below the Primary Containment Pressure Limit (Fig D).

• IF.....you reach the Primary Containment Pressure Limit (Fig D),

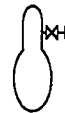
AND.....you can hold RPV injection above the Minimum Debris Retention Injection Rate (Fig Z),

THEN...stop RPV injection from outside the primary containment except boron injection from SBLC.

CONTAINMENT VENTING

■ When:

- As necessary to increase RPV injection.
- As necessary to help flood containment.
- To control torus pressure below the Primary Containment Pressure Limit (Fig D) (see Containment Level/Pressure Limits above).
- As required by SAMG-2.



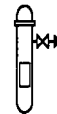
■ Methods:

- See QCOP 1600-13.

RPV VENTING

■ When:

- Primary containment water level reaches 50 ft.



■ Methods:

- See Detail F.

DRYWELL SPRAYS

■ When:

- As required by SAMG-2.



■ Initiate only if:

- You can hold RPV injection above the Minimum Debris Retention Injection Rate (Fig Z),
- AND
- Drywell temperature is below the Drywell Spray Initiation Limit (Fig K),
- AND

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breaches the RPV.

	<ul style="list-style-type: none">☛ OK to exceed release rate limits.☛ OK to defeat interlocks.
Further cooldown required	<p>Cool down to cold shutdown condition using pressure control systems (Detail O).</p> <ul style="list-style-type: none">☛ Stop cooldown if reactor is not shutdown.☛ OK to defeat interlocks.

O

Pressure Control Systems

- ADS valves...only if torus level is above 5 ft.
- Main turbine bypass valves (QCOP 0250-01)
- HPCI (QCOP 2300-06)
 - ☛ CAUTION: Exceeding NPSH/Vortex Limits may cause system damage.
- RCIC (QCOP 1300-02)
 - ☛ CAUTION: Exceeding NPSH/Vortex Limits may cause system damage.
- RWCU, blowdown mode...only if no boron injected (QCOP 1200-07).
- RWCU, recirculation mode (QCOP 1200-11)
 - ☛ Bypass filter/demins.
- Main steam line drains (QCOP 0250-05)
- Head vent
- Shutdown Cooling...only if no boron injected (QCOP 1000-05).

From: RST01B Hoc
Sent: Monday, March 14, 2011 11:26 AM
To: Trapp, James; Ulses, Anthony
Subject: Dresden SAMGs
Attachments: Dresden SAMG-2 Daiichi 1.pdf; Dresden SAMG-1 Daiichi 1.pdf

Jim & Tony,

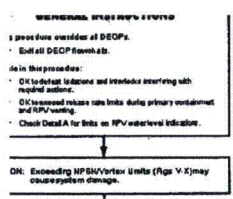
Here are the Severe Accident Guidelines For Dresden, similar to Daiichi Unit 1.

They are large but that's for minimum readability.

Daiichi can use these for strategies for Unit 1.

Quad Cities coming in next email.

Peter Alter
BWR.Trainer now with Coordination Branch
(w) 301-415-7996
or RST Room in Ops Center



Has core debris breached the RPV (TSG-1; Detail H)?

Yes → []
No → []

RPV breached, pressure suppression no longer required. Cool the debris in primary containment.

RPV/CONTAINMENT INJECTION

PARTIES:

Run Drywell Spray with at least 2400 gpm flow from location RPV injection from within primary containment. Activate drywell spray containment injection from external source. Activate RPV injection from the lines.

Methods:

- Use Group 1 system (Detail Q) if possible.
- Use Group 2 system (Detail Q) if necessary to restore and hold RPV water level above -143 in. (TAF).
- Advise from outside primary containment only if necessary to restore and hold RPV water level above -143 in. (TAF).

CONTAINMENT LEVEL/PRESSURE LIMITS

Approaching or above the Primary Containment Pressure Limit (Fig. 5).

1. Stop direct injection into the primary containment from external sources.

2. If you add RPV injection, then stop RPV injection from outside the primary containment until RPV water level above -143 in. (TAF).

CONTAINMENT VENTING

As necessary to help feed the containment.

To control top bottom pressure below the Primary Containment Pressure Limit (Fig. 5) use Containment Level/Pressure Overrides above.

RPV VENTING

As required by SAMO-2.

DRYWELL SPRAYS

As required by SAMO-2.

TORUS SPRAYS

As required by SAMO-2.

Can you restore and hold RPV water level above -143 in. (TAF)?

Yes → []
No → []

Restored the RPV to submerge the core.

RPV/CONTAINMENT INJECTION

PARTIES:

Run Drywell Spray with at least 2400 gpm flow from location RPV injection from within primary containment. Activate drywell spray containment injection from external source. Activate RPV injection from the lines.

Methods:

- Use Group 1 system (Detail Q) if possible.
- Use Group 2 system (Detail Q) if necessary to restore and hold RPV water level above -143 in. (TAF).
- Advise from outside primary containment only if necessary to restore and hold RPV water level above -143 in. (TAF).

CONTAINMENT LEVEL/PRESSURE LIMITS

Approaching or above the Primary Containment Pressure Limit (Fig. 5).

1. Stop direct injection into the primary containment from external sources.

2. If you add RPV injection, then stop RPV injection from outside the primary containment until RPV water level above -143 in. (TAF).

CONTAINMENT VENTING

As necessary to help feed the containment.

To control top bottom pressure below the Primary Containment Pressure Limit (Fig. 5) use Containment Level/Pressure Overrides above.

RPV VENTING

As required by SAMO-2.

DRYWELL SPRAYS

As required by SAMO-2.

TORUS SPRAYS

As required by SAMO-2.

Can you restore and hold RPV water level above -288 in. (BAF)?

Yes → []
No → []

Core debris is not expected to melt through RPV. Flood above TAF for long-term cooling.

RPV/CONTAINMENT INJECTION

PARTIES:

Run Drywell Spray with at least 2400 gpm flow from location RPV injection from within primary containment. Activate drywell spray containment injection from external source. Activate RPV injection from the lines.

Methods:

- Use Group 1 system (Detail Q) if possible.
- Use Group 2 system (Detail Q) if necessary to restore and hold RPV water level above -288 in. (BAF).
- Advise from outside primary containment only if necessary to restore and hold RPV water level above -288 in. (BAF).

CONTAINMENT LEVEL/PRESSURE LIMITS

Approaching or above the Primary Containment Pressure Limit (Fig. 5).

1. Stop direct injection into the primary containment from external sources.

2. If you add RPV injection, then stop RPV injection from outside the primary containment until RPV water level above -288 in. (BAF).

CONTAINMENT VENTING

As necessary to help feed the containment.

To control top bottom pressure below the Primary Containment Pressure Limit (Fig. 5) use Containment Level/Pressure Overrides above.

RPV VENTING

As required by SAMO-2.

DRYWELL SPRAYS

As required by SAMO-2.

TORUS SPRAYS

As required by SAMO-2.

Can you restore and hold RPV injection above the Minimum Debris Retention Injection Rate (Fig. 2)?

Yes → []
No → []

Core debris is not expected to melt through RPV. Flood above TAF for long-term cooling.

RPV/CONTAINMENT INJECTION

PARTIES:

Run Drywell Spray with at least 2400 gpm flow from location RPV injection from within primary containment. Activate drywell spray containment injection from external source. Activate RPV injection from the lines.

Methods:

- Use Group 1 system (Detail Q) if possible.
- Use Group 2 system (Detail Q) if necessary to restore and hold RPV injection above the Minimum Debris Retention Injection Rate (Fig. 2).
- Advise from outside primary containment only if necessary to restore and hold RPV injection above the Minimum Debris Retention Injection Rate (Fig. 2).

CONTAINMENT LEVEL/PRESSURE LIMITS

Approaching or above the Primary Containment Pressure Limit (Fig. 5).

1. Stop direct injection into the primary containment from external sources.

2. If you add RPV injection, then stop RPV injection from outside the primary containment until RPV injection above the Minimum Debris Retention Injection Rate (Fig. 2).

CONTAINMENT VENTING

As necessary to help feed the containment.

To control top bottom pressure below the Primary Containment Pressure Limit (Fig. 5) use Containment Level/Pressure Overrides above.

RPV VENTING

As required by SAMO-2.

DRYWELL SPRAYS

As required by SAMO-2.

TORUS SPRAYS

As required by SAMO-2.

Inside the Pressure Suppression Pressure (Fig. 4)?

Yes → []
No → []

Core debris is not expected to melt through RPV. Maintain pressure suppression capability.

RPV/CONTAINMENT INJECTION

PARTIES:

Run Drywell Spray with at least 2400 gpm flow from location RPV injection from within primary containment. Activate drywell spray containment injection from external source. Activate RPV injection from the lines.

Methods:

- Use Group 1 system (Detail Q) if possible.
- Use Group 2 system (Detail Q) if necessary to restore and hold RPV injection above the Minimum Debris Retention Injection Rate (Fig. 2).
- Advise from outside primary containment only if necessary to restore and hold RPV injection above the Minimum Debris Retention Injection Rate (Fig. 2).

CONTAINMENT LEVEL/PRESSURE LIMITS

Approaching or above the Primary Containment Pressure Limit (Fig. 5).

1. Stop direct injection into the primary containment from external sources.

2. If you add RPV injection, then stop RPV injection from outside the primary containment until RPV injection above the Minimum Debris Retention Injection Rate (Fig. 2).

CONTAINMENT VENTING

As necessary to help feed the containment.

To control top bottom pressure below the Primary Containment Pressure Limit (Fig. 5) use Containment Level/Pressure Overrides above.

RPV VENTING

As required by SAMO-2.

DRYWELL SPRAYS

As required by SAMO-2.

TORUS SPRAYS

As required by SAMO-2.

Outside the Pressure Suppression Pressure (Fig. 4)?

Yes → []
No → []

Core debris is not expected to melt through RPV. Pressure suppression capability, containment may fail.

RPV/CONTAINMENT INJECTION

PARTIES:

Run Drywell Spray with at least 2400 gpm flow from location RPV injection from within primary containment. Activate drywell spray containment injection from external source. Activate RPV injection from the lines.

Methods:

- Use Group 1 system (Detail Q) if possible.
- Use Group 2 system (Detail Q) if necessary to restore and hold RPV injection above the Minimum Debris Retention Injection Rate (Fig. 2).
- Advise from outside primary containment only if necessary to restore and hold RPV injection above the Minimum Debris Retention Injection Rate (Fig. 2).

CONTAINMENT LEVEL/PRESSURE LIMITS

Approaching or above the Primary Containment Pressure Limit (Fig. 5).

1. Stop direct injection into the primary containment from external sources.

2. If you add RPV injection, then stop RPV injection from outside the primary containment until RPV injection above the Minimum Debris Retention Injection Rate (Fig. 2).

CONTAINMENT VENTING

As necessary to help feed the containment.

To control top bottom pressure below the Primary Containment Pressure Limit (Fig. 5) use Containment Level/Pressure Overrides above.

RPV VENTING

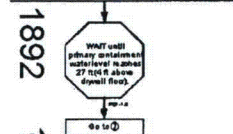
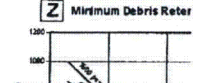
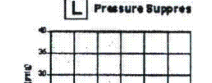
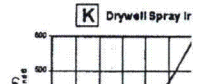
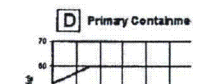
As required by SAMO-2.

DRYWELL SPRAYS

As required by SAMO-2.

TORUS SPRAYS

As required by SAMO-2.



START

GENERAL INSTRUCTIONS

- This procedure overrides all DEOPs.
Ex of DEOP Functions

HYDROGEN / OXYGEN

Table with 2 columns: IF, THEN. IF: Hydrogen or oxygen monitor is measurable. THEN: Sample the drywell and torus for hydrogen and oxygen.

Control gas concentrations in the Drywell and Torus. Change state when concentrations change.

REACTOR POWER

Place mode switch in SHUTDOWN

Isolate RARI

- Inject SBLC. Trip pump when SBLC tank level reaches 1%. Insert control rods (DEOP 500-5).

RPV PRESSURE

Initiate IC to maximum flow

- If... torus water level is above 0 ft. THEN, open all AGVs. OK to exceed 100°F/hr cooldown. Before primary containment water level reaches 30 ft, open MD 2(2)220-1, MSB DRH RVV. OK to exceed isolation (DEOP 500-3).

Table with 2 columns: IF, THEN. IF: Any ADSV cannot be opened AND RPV to drywell D/P more than 0.5 psid. THEN: Use other pressure control systems (Detail O) to depressure. Hold RPV to drywell D/P less than 0.5 psid. OK to exceed 100°F/hr cooldown. OK to exceed release rate limits. Further cooldown required. Cool down to cold shutdown conditions using pressure control systems (Detail O). Stop cooldown if reactor is not shutdown.

PRIMARY CONTAINMENT

Torus Temperature: Control torus temperature below 60°F. Use LPCI for torus cooling only. Drywell Temperature: Control drywell temperature below 100°F using drywell cooling. Primary Containment Pressure: Reduce primary containment pressure to reduce the available NPSH for pumps taking suction from the torus. Emergency Depressurization Systems: ADSVs, IC, Malfunction bypass valves, Man Recycle Reboiler, SVAES, Grand Seal steam, Offgas preheater, Main steam line drains, HPCI.

REACTOR RADIOACTIVITY

- Reactor Build: Operate area coolers. Reactor Shut: Operate area building Max Normal Temp. Reactor Build: Operate area building Max Normal Temp. Reactor Shut: Operate area building Max Normal Temp. Reactor Build: Operate area building Max Normal Temp.

DRYWELL

and O2 levels in the Drywell and Torus. If H2 and O2 levels using the following chart.

Chart for Drywell O2 levels. Columns: 0-1%, 2-5% or unknown. Rows: No action, 1, 2, 3, 4.

TORUS

1. Determine H2 and O2 levels in the Drywell and Torus. 2. Control Torus H2 and O2 levels using the following chart.

Chart for Torus O2 levels. Columns: 0-1%, 2-5% or unknown. Rows: No action, 1, 2, 3, 4.

1. Vent and purge (if not required by other SAMOs) to reduce the drywell H2 and O2 levels to meet LCD.

4. Sample the primary containment atmosphere for radiolabel. If... release rate is expected to stay below the LCD during venting. THEN, vent and purge the primary containment.

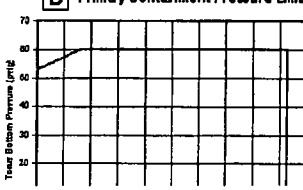
2. Vent and purge (if not required by other SAMOs) to reduce the drywell and torus H2 and O2 levels to meet LCD.

5. Sample the primary containment atmosphere for radiolabel. If... release rate is expected to stay below the LCD during venting. THEN, vent and purge the primary containment.

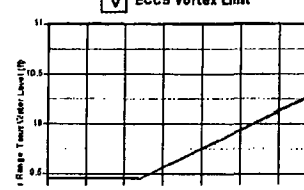
3. Vent and purge (if not required by other SAMOs) to reduce the drywell and torus H2 and O2 levels to meet LCD.

6. Vent and purge the primary containment: OK to defect all isolations. OK to exceed release rate limits. IF permitted by SAMOs.

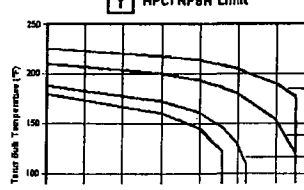
D Primary Containment Pressure Limit



V ECCS Vortex Limit



Y HPCI NPSH Limit



S Reactor Build

Table with 2 columns: Area, Description. Areas include HPCI Room, Shutdown Cooling Pump, Shutdown Cooling HX, Clean Up Demin Room, Clean Up Pump & HX, Isolation Condensate Area.

T Reactor Building

Table with 2 columns: Area, Description. Areas include HPCI Isolation Unit, East LPCI Pump Area, West LPCI Pump Area, East CRD Module Area, West CRD Module Area, Vessel Instrument Rack A, Clean Up System Area, Isolation Condensate Area.

From: Hasselberg, Rick
Sent: Monday, March 14, 2011 11:01 AM
To: RST01B Hoc
Subject: FW: sub for Bill Ruland

From: Ruland, William
Sent: Monday, March 14, 2011 10:32 AM
To: Hasselberg, Rick
Subject: sub

Rick,

Can you find someone to sub for me from 4 to 5 today? I have an EDO briefing I need to attend.

Bill

From: Hasselberg, Rick
Sent: Monday, March 14, 2011 8:03 AM
To: Kolb, Timothy
Cc: RST01 Hoc; RST01B Hoc
Subject: RE: IRC Coverage - Tim Kolb

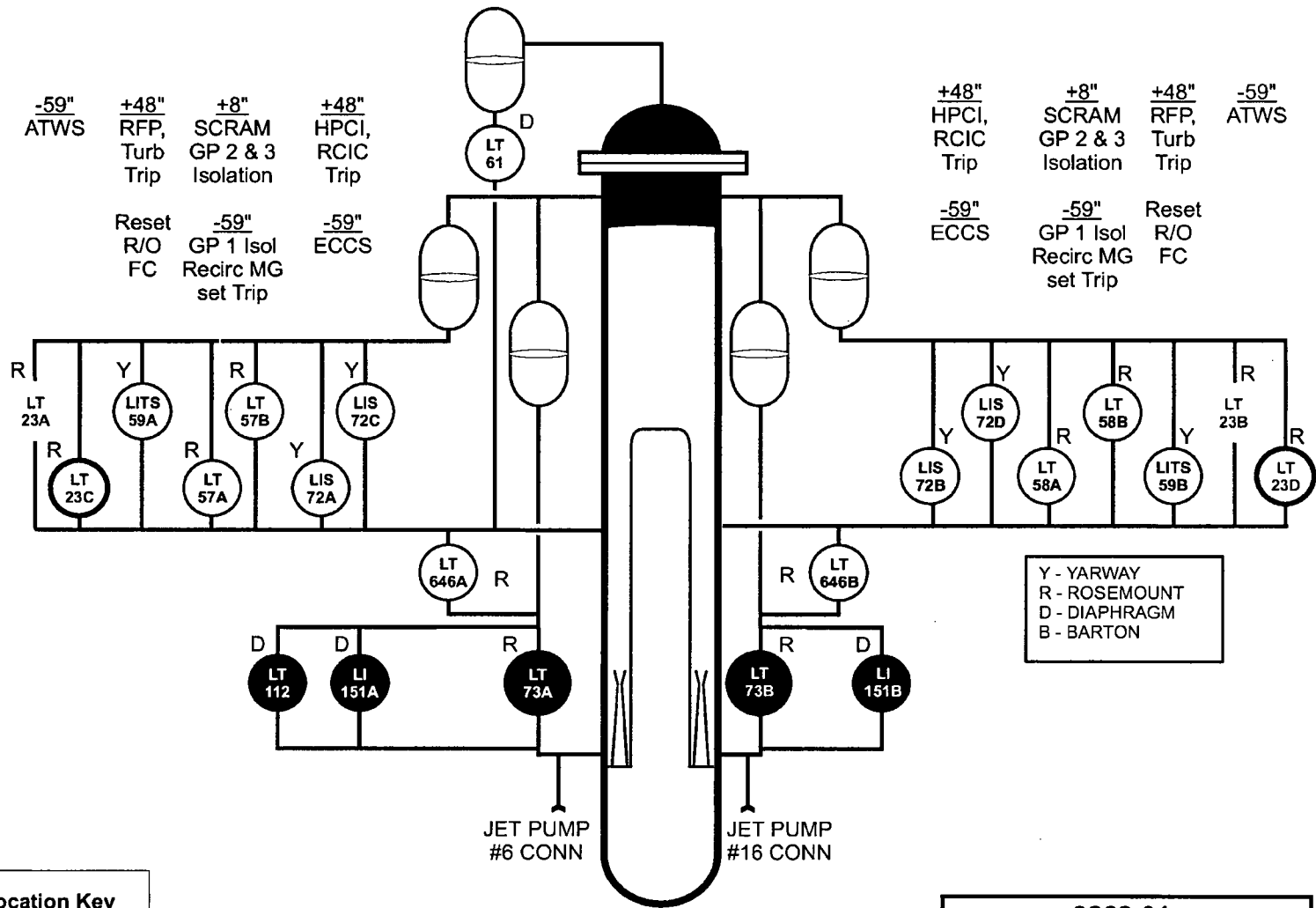
We'll take care of that, Tim. I saw you on the Today Show this morning...

From: Kolb, Timothy
Sent: Monday, March 14, 2011 6:22 AM
To: Hasselberg, Rick
Subject: IRC Coverage

Rick,
I won't be able to cover the BWR Analyst position on Friday. I have to go out of town. Is there any way you can replace me?
Thanks,

Timothy Kolb
Senior Reactor Engineer
NRR/DIRS/IOLB
Location: O-07H19
301-415-1428
"First rule of nuclear power - transfer heat"

From: RST01B Hoc
Sent: Monday, March 14, 2011 1:20 AM
To: RST01B Hoc; RST01 Hoc
Subject: Rx Water Level Instrumentation
Attachments: Rx Water Level Instrument.pdf



-59"
ATWS

+48"
RFP,
Turb
Trip

+8"
SCRAM
GP 2 & 3
Isolation

+48"
HPCI,
RCIC
Trip

+48"
HPCI,
RCIC
Trip

+8"
SCRAM
GP 2 & 3
Isolation

+48"
RFP,
Turb
Trip

-59"
ATWS

Reset
R/O
FC

-59"
GP 1 Isol
Recirc MG
set Trip

-59"
ECCS

-59"
ECCS

-59"
GP 1 Isol
Recirc MG
set Trip

Reset
R/O
FC

Y - YARWAY
R - ROSEMOUNT
D - DIAPHRAGM
B - BARTON

Transmitter Panel Location Key

○	220X - 5	○	225X - 75A
○	220X - 6	○	225X - 75C
●	220X - 7	○	225X - 75B
●	220X - 8	○	225X - 75D

0263-01	
Control Room Reactor Water Level Instrument	
Date: 03/30/00	Revision: 1
P&ID: N/A	

DK 710 of 1892

From: Rick Hasselberg <(b)(6)>
Sent: Saturday, March 12, 2011 2:12 PM
To: RST01B Hoc; rst01bhoc@nrc.gov
Subject: <http://earthquake.usgs.gov/earthquakes/shakemap/global/shake/c0001xgp/>

From: RST01B Hoc
Sent: Saturday, March 12, 2011 1:17 AM
To: (b)(6)
Subject: tepco website

<http://www.tepco.co.jp/en/challenge/energy/nuclear/plants-e.html>

Rick Hasselberg,
Sr. Emergency Response Coordinator
Response Program Manager
Reactor Safety Team
Fuel Cycle Safety Team
Office of Nuclear Security & Incident Response
U.S. Nuclear Regulatory Commission
rick.hasselberg@nrc.gov
Office - 301-415-6419

From: Virgilio, Martin
Sent: Saturday, March 12, 2011 8:26 AM
To: OST02 HOC; Kotzalas, Margie; McDermott, Brian
Subject: Fw: Call?

----- Original Message -----

From: Jaczko, Gregory
To: Virgilio, Martin; Doane, Margaret
Sent: Sat Mar 12 08:02:56 2011
Subject: FW: Call?

please be aware if a call comes in.
thanks

From: Poneman, Daniel [Daniel.Poneman@hq.doe.gov]
Sent: Saturday, March 12, 2011 7:59 AM
To: Jaczko, Gregory
Cc: Lyons, Peter; Aoki, Steven; DAgostino, Thomas; Connery, Joyce
Subject: Fw: Call?

Greg: forwarding msg from kondo-san. Trying to set up call. Dan

----- Original Message -----

From: shunsuke.kondo@cao.go.jp <shunsuke.kondo@cao.go.jp>
To: Poneman, Daniel
Sent: Sat Mar 12 02:22:43 2011
Subject: RE: Call?

Poneman-san

Thank you very much for your kind actions. I have just received a report on the new progress at 1F1, a significant reduction of CV pressure due to the use of SGTS line to vent the Wet-Well atmosphere, recovering the operation of air compressor to operate AOV. We hope the pressure will become below its design pressure soon, as well as unconfirmed report on the sound of explosion in the building.

As TEPCO team is required to be careful to the attack of tsunami, they are very slow in the action to recover the sea water cooling system. Therefore I am expecting the team will arrive at the conclusion about the next step they will take as an alternative to that relies on that line, paying due attention to the existence of hydrogen.

Therefore it is very kind of you to convey this information to Chairman Jaczko. I will also ask Chairman of Nuclear Safety Commission Dr. Madarame to contact with him.

Yours,
Shunsuke Kondo

-----Original Message-----

From: Poneman, Daniel [mailto:Daniel.Poneman@hq.doe.gov]
Sent: Saturday, March 12, 2011 3:11 PM
To: 近藤 駿介 (原子力委員会)
Subject: RE: Call?

Kondo-san:

(b)(5)

I am turning in soon but if you need me you may call through our DOE Operations Center, 202-586-8100. My BB is

(b)(6)

(b)(6)

Sincerely,

Dan

Daniel B. Poneman
Deputy Secretary
US Department of Energy
Washington, DC 20585
(202) 586-5500

-----Original Message-----

From: shunsuke.kondo@cao.go.jp [mailto:shunsuke.kondo@cao.go.jp]
Sent: Friday, March 11, 2011 10:59 PM
To: Poneman, Daniel
Subject: RE: Call?

Poneman-san

It was very nice to talk with you on phone. The following is my note on the current situation. I will continue to update it as appropriate.

Current (12:00 of 2011/03/12) Situation of Fukushima Daiichi (1F, six units) and Fukushima Daini (2F, four units) Nuclear Power Plants Hit by Tohoku-chiho Taiheiyoku-oki EQ (TT-EQ) on March 11, 2011

The TT-EQ caused automatic shutdown of all operating units of 1F, unit 1, 2, 3 and 2F, unit1, 2, 3, 4. Simultaneously, the off-site powers to these units were also lost due to the damage in fossil and some of hydro power generating stations in the network with which these units were connected. Furthermore, the emergency diesel generators (EDGs) of these units could not start operation due to extraordinary high Tsunami that damage heat sink line for these EDGs.

(b)(5)

Difficulty in the execution was found, however, as the vital power source was not available due to the flooding of the building: this power source is to be used to supply power to sustain I&C system that is used to monitor plant status and operate motor operated valve (MOV) necessary in this operation in particular.

Therefore TEPCO has gathered power supply trucks and batteries from available sources near-by and the team is fighting to limit the probability of occurrence of large-scale release utilizing them.

1F1 is in most difficult situation as the radiation level around the unit rouse gradually at around 4:00 AM today due probably to the partial core damage due to the occasional suspension of core cooling (water injection, this is my personal viewpoint) and recognizing this and as a precaution the government asked evacuation to the people within 10 km from the plant.

The team started the water injection using fire-fighting car or fire engines to stabilize core condition and just succeeded to open the valve for CV venting under high radiation condition. We are very lucky that the wind direction is from land to sea at this time. However, the water level in the Reactor Pressure Vessel is reported to be stabilized due to the injection of the water, though it is now below the top of the core, probably due to the reason I mentioned above.

I am expecting that the team will start feed and breed (F&B) operation in any units as smoothly as possible (at least complete the preparation to perform the operation in parallel with making their best to recover sea water line, as key operation in these situation is the F&B operation utilizing venting line until we can recover the operation of sea water system as a heat sink and can use ECCS system.

Yours,

Shunsuke Kondo
Chairman

Japan Atomic Energy Commission

Tel: 03-3581-9806 mobile (b)(6)

Email: shunsuke.kondo@cao.go.jp

From: RST01B Hoc
Sent: Friday, March 11, 2011 4:27 PM
To: Monninger, John; Batkin, Joshua; Brenner, Eliot; Hayden, Elizabeth; Harrington, Holly; McDermott, Brian
Subject: Natural Phenomena Response Requirements for Region IV NPPs
Attachments: Natural Phenomina Response Requirements for NPPs (2009).docx

The is the Natural Phenomena Response Requirements for Region IV NPPs, as requested by the Chairman. Similar info is available for sites in other regions.

Rick Hasselberg,
Sr. Emergency Response Coordinator
Response Program Manager
Reactor Safety Team
Office of Nuclear Security & Incident Response
U.S. Nuclear Regulatory Commission
rick.hasselberg@nrc.gov
Office - 301-415-6419

Licensee Natural Phenomena Response Requirements

Arkansas Nuclear One, Units 1 and 2

LICENSEE EMERGENCY PLAN REQUIREMENTS	<u>NOUE</u>	<u>ALERT</u>	<u>SITE AREA EMERGENCY</u>
TECHNICAL SPECIFICATION OPERATING REQUIREMENTS	NONE		

Flooding - Lake level >340' and rising with forecasted lake level >350'

Loss of Dardanelle Reservoir - Lake level <337' AND forecasted by the U.S. Army Corps of Engineers (USACE) to reach 335'

Earthquake - Verified earthquake accompanied by 0.1g alarm.

Tornado/High Wind/Thunderstorms
- Tornado observed on the ground within the exclusion area

Flooding - Flood waters >350' AND forecasted by the USACE to reach or exceed 354' OR any natural event resulting in the potential or actual loss of **one** train of any ES system.

Loss of Dardanelle Reservoir - lake level <335' elevation OR any natural event resulting in the potential or actual loss of **one** train of any ES system

Earthquake - Verified earthquake accompanied by 0.1g alarm OR any natural event resulting in the potential or actual loss of **one** train of any ES system.

Tornado/High Wind/Thunderstorms - Tornado striking vital facility structures (e.g. housing ES related equipment) OR in the event of sustained winds of >60 mph (10 minute average as reported by RDACS from either the 10 or 57 meter instruments) OR any natural event resulting in the potential or actual loss of **one** train of any ES system.

Flooding - flood water is >361' OR any natural event resulting in the potential or actual loss of **both** trains of any ES system.

Loss of Dardanelle Reservoir -lake level <335' elevation and Emergency Cooling Pond not available OR any natural event resulting in the potential or actual loss of **both** trains of any ES system.

Earthquake - verified earthquake greater than 0.2 g, or any natural event resulting in the potential or actual loss of **both** trains of any ES system.

Tornado/High Wind/Thunderstorms - Sustained winds of >67 mph (10 minute average as reported by RDACS from either the 10 or 57 meter instruments), OR or any natural event resulting in the potential or actual loss of **both** trains of any ES system.

Licensee Natural Phenomena Response Requirements

Arkansas Nuclear One, Units 1 and 2

SHUTDOWN REQUIREMENTS	If expected to lose the lake as a SW suction source, then S/D to Mode 3 per Rapid Plant Shutdown procedure (1203.045) If seismic annunciator in alarm AND earthquake is felt physically, then S/D to Mode 3 per Rapid Plant Shutdown procedure (1203.045) When directed by management during a flooding event, then S/D to Mode 3 per Rapid Plant Shutdown procedure (1203.045)
APPLICABLE OPERATING PROCEDURES	"Emergency Action Level Classification" - Procedure 1903.010, Change 039 "Natural Emergencies" - Procedure 1203.025, Change 020-03-0 "Natural Emergencies" - Procedure 2203.008, Change 012

Licensee Natural Phenomena Response Requirements

Callaway Nuclear

LICENSEE EMERGENCY PLAN REQUIREMENTS	<u>NOUE</u>	<u>ALERT</u>	<u>SITE AREA EMERGENCY</u>
TECHNICAL SPECIFICATION OPERATING REQUIREMENTS			
SHUTDOWN REQUIREMENTS			

Tornado – Report by plant personnel or tornado or high winds >100mph striking within protected area.

Earthquake – A seismic event identified by any two of the following:

- Receipt of Annunciator 98E (Seismic Recorder On), verified by Procedure OTO-SG-0001, Seismic Activity. Annunciator 98E is activated by a ground force acceleration of 0.02 sensed at the containment base slab or the containment operating floor.
- An earthquake felt in the plant
- Earthquake confirmed by earthquake information center

Tornado – Tornado or high winds > 100 mph within protected area boundary and resulting in visible damage to any Table H-1 structure or equipment or control room indication or degraded performance of those system. (Table H1 is shown below)

Earthquake – OBE exceeded OTO-SG-0001, Seismic Activity, as indicated by Annunciator 98D, Operating Basis Earthquake (Set point is .12g from Stron Motion Accelerometer) and confirmed by the following:

- An earthquake felt in the plant
- Earthquake confirmed by earthquake information center
- Control room indication of degraded performance of systems required for the safe shutdown of the plant.

Tornado - N/A

Earthquake - N/A

Licensee Natural Phenomena Response Requirements

Columbia Generating Station

LICENSEE EMERGENCY PLAN REQUIREMENTS	<u>NOUE</u>	<u>ALERT</u>	<u>SITE AREA EMERGENCY</u>
TECHNICAL SPECIFICATION OPERATING REQUIREMENTS			
SHUTDOWN REQUIREMENTS	Volcano activity causing the following limits to be exceeded - total uncompacted ash depth of 4 inches - ash fall rate > 1.0 in/hr		
APPLICABLE OPERATING PROCEDURES	"Emergency Plan Implementing Procedures" - Procedure 13.1.1 "Abnormal Conditions Procedure - Tornado/High Winds" - Procedure ABN-Wind "Abnormal Conditions Procedure - Ash Fall" - Procedure ABN-Ash		

Licensee Natural Phenomena Response Requirements

Comanche Peak

LICENSEE EMERGENCY PLAN REQUIREMENTS	<u>NOUE</u>	<u>ALERT</u>	<u>SITE AREA EMERGENCY</u>
	<p><u>High Winds/Tornado</u> - Weather Service warning of wind speeds >80MPH OR Tower wind speed >80MPH sustained OR Tornado observed to have touched down within the Exclusion Area Boundary</p> <p><u>Flooding</u> - Safe Shutdown Impoundment (SSI) level >790.5' elevation (USGS level meter)</p> <p><u>Earthquake</u> - Earthquake felt in the plant OR detected by seismic instruments</p>	<p><u>High Winds/Tornado</u> - Weather service warning of wind speeds >110mph OR Tower wind speed >100MPH sustained OR Tornado strikes a facility inside the Protected Area (plant structures or equipment, potentially damaging functions needed for safe shutdown)</p> <p><u>Flooding</u> - SSI level >796' elevation (USGS level meter)</p> <p><u>Earthquake</u> - Indicated earthquake > Operating Basis Earthquake</p>	<p>Conditions exist which indicate actual or likely major failure of plant functions needed for the protection of the public.</p>
TECHNICAL SPECIFICATION OPERATING REQUIREMENTS	N/A		
SHUTDOWN REQUIREMENTS			
APPLICABLE OPERATING PROCEDURES	<p>"Acts of Nature" - Procedure ABN-907</p> <p>"Assessment of Emergency Action Levels, Emergency Classification and Plan Activation" - Procedure EPP-201</p>		

Licensee Natural Phenomena Response Requirements

Cooper Nuclear Station

LICENSEE EMERGENCY PLAN REQUIREMENTS	<u>NOUE</u>	<u>ALERT</u>	<u>SITE AREA EMERGENCY</u>
	<p><u>Flooding</u> - River level > 899' or < 867'</p> <p><u>Tornado</u> - Tornado touching down in OCA</p> <p><u>High Winds</u> - Sustained wind speed > 74 mph</p> <p><u>Earthquake</u> - Ground motion > 0.01g as indicated by control room seismic monitor</p>	<p><u>Flooding</u> - River Level > 902' or < 865'</p> <p><u>Tornado</u> - Tornado touching down in Protected Area</p> <p><u>High Winds</u> - Sustained wind speed >95 mph.</p> <p><u>Earthquake</u> - Ground motion > 0.1g as indicated by control room seismic monitor</p>	<p><u>Flooding</u> - Flooding from any source (External or Internal) which renders multiple ECCS systems inoperable when required to be OPERABLE OR Low river level which results in complete loss of Service Water System.</p> <p><u>Tornado/High Winds</u> - Sustained wind speed >100 mph.</p> <p><u>Earthquake</u> - Ground motion > 0.1g as indicated on the Control Room seismic monitoring panel AND reports of major plant damage.</p>
TECHNICAL SPECIFICATION OPERATING REQUIREMENTS			
SHUTDOWN REQUIREMENTS	<p>River level at 902' MSL OR forecast to be \geq 902' within next 36 hours OR Floodwater accumulates in any of the following: Either Diesel Generator Room, Any Reactor Building Quadrant, Control Building Basement OR Plant conditions warrant reactor shutdown.</p> <p>River level at 873' MSL AND forecast to reach 865'</p>		
APPLICABLE OPERATING PROCEDURES	<p>"Operations During Weather Watches and Warnings" - Emergency Procedure 5.1Weather</p> <p>"Earthquake" - Emergency Procedure 5.1Quake</p> <p>"Flood" - Emergency Procedure 5.1Flood</p> <p>"Service Water Casualties" - Emergency Procedure 5.2SW</p> <p>EPIP 5.7.1 "Emergency Classification"</p>		

Updated 05/05/2009

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Licensee Natural Phenomena Response Requirements

Diablo Canyon

LICENSEE EMERGENCY PLAN REQUIREMENTS	<u>NOUE</u>	<u>ALERT</u>	<u>SITE AREA EMERGENCY</u>
	<p><u>Tsunami/Hurricane</u> – Hurricane warning or Tsunami (actual or warning) affecting the Protected Area</p> <p><u>Tornado</u> – Report by plant personnel of tornado or high winds > 80 mph striking within Protected Area boundary</p> <p><u>Earthquake</u> – Seismic event identified by ANY TWO of the following: - Earthquake felt in plant - Seismic event confirmed by PK15-24 main annunciator "SEISMIC INSTR SYSTEM" - U.S. Geological survey</p> <p><u>Flooding</u> – Uncontrolled flooding in any area Table H-1 area that has the potential to affect safety related equipment needed for the current operating mode</p> <p><u>Other</u> – Report of turbine failure resulting in casing penetration or damage to turbine or generator seals</p>	<p><u>Hurricane/Tornado</u> – Tornado or high winds > 80 mph within Protected Area boundary and resulting in visible damage to any Table H-1 plant structures/equipment or Control Room indication of degraded performance of those systems</p> <p><u>Earthquake</u> – Earthquake Force Monitor "Alert" alarm or CP M-4, "Earthquake" indicates Operating Basis Earthquake (> 0.2g)</p> <p><u>Flooding/Post-tsunami</u> – Uncontrolled flooding in any Table H-1 area that results in degraded safety system performance as indicated in the Control Room or that creates industrial safety hazards (e.g., electric shock) that precludes access necessary to operate or monitor safety equipment</p> <p><u>Other</u> – Turbine failure-generated missiles result in any visible damage to or penetration of any Table H-1 area.</p> <p><u>Other</u> – Vehicle crash within Protected Area boundary and resulting in visible damage to any Table H-1 plant structures or equipment or control indication of degraded performance of those systems (Note 2)</p>	<p><u>None</u></p> <p style="text-align: center;"><u>Table H-1 Vital Areas</u></p> <ul style="list-style-type: none"> - Containment - Auxiliary Building - Fuel Handling Building - Turbine Building - Intake Structure - RWST - CST <p>Note 2: If vehicle crash is a hostile action, see Subcategory H.4 EALs for possible classification</p>
TECHNICAL SPECIFICATION OPERATING REQUIREMENTS	LCO 3.7.8 Two ASW trains shall be OPERABLE		
SHUTDOWN REQUIREMENTS	S/D required if ASW unavailable due to Tsunami/Flooding/Post-Tsunami (extreme low water) condition		
APPLICABLE OPERATING PROCEDURES	CP M-4 Earthquake, CP M-5 Emergency Classification and Emergency Plan Activation		

Licensee Natural Phenomena Response Requirements

Fort Calhoun Station

LICENSEE EMERGENCY PLAN REQUIREMENTS	<p style="text-align: center;"><u>NOUE</u></p> <p><u>Flooding</u> - River level >1004' MSL but ≤1009' MSL</p> <p><u>Tornado</u> - Tornado touching down in OCA</p> <p><u>Earthquake</u> - Earthquake is felt in plant or the "STRONG MOTION SEISMIC EVENT IN PROGRESS" alarm (valid) is actuated.</p> <p><u>Low River Level</u> - River is ≤978' MSL but >976' 9" MSL</p>	<p style="text-align: center;"><u>ALERT</u></p> <p><u>Flooding</u> - River level >1009' MSL but ≤1014' MSL</p> <p><u>Tornado</u> - Tornado causes damage to any plant vital areas</p> <p><u>Earthquake</u> - Earthquake causes damage to any plant vital areas.</p> <p><u>Low River Level</u> - River level ≤976' 9" MSL but >973' 9" MSL</p>	<p style="text-align: center;"><u>SITE AREA EMERGENCY</u></p> <p><u>Flooding</u> - River level >1014' MSL.</p> <p><u>Low River Level</u> - River level is ≤973' 9" MSL</p>
TECHNICAL SPECIFICATION OPERATING REQUIREMENTS	None		
SHUTDOWN REQUIREMENTS	<ul style="list-style-type: none"> • The Reactor must be placed in Hot Shutdown within six hours if either of the following conditions is met: 1) the recorded acceleration at the 991' elevation exceeds 0.1944g horizontal or 0.1068g vertical, or 2) the recorded acceleration at the 1045' elevation exceeds 0.2306g horizontal or 0.1068g vertical. • If the river level is expected to rise above elevation 1009 feet due to catastrophic flooding, then shutdown the plant per AOP-05, Emergency Shutdown, and place the plant in cold shutdown per OP-3A, Plant Shutdown. When river level reaches 1004 feet and is expected to reach 1007 feet, then shutdown the plant per one of the following procedures: 1) AOP-05, Emergency Shutdown, or 2) OP-4, Load Change and Normal Power Operation. If the river level reaches 1009 feet, then place the plant in cold shutdown per OP-3A, Plant Shutdown. • There are no specific criteria to shutdown the plant in the event of a tornado. 		
APPLICABLE OPERATING PROCEDURES	"Emergency Plan Implementing Procedure" - Procedure EPIP-OSC-1, Rev. 44 AOP-01, Acts of Nature, Rev. 22		

Licensee Natural Phenomena Response Requirements

Grand Gulf

LICENSEE EMERGENCY PLAN REQUIREMENTS	<u>NOUE</u>	<u>ALERT</u>	<u>SITE AREA EMERGENCY</u>
	<p><u>Hurricane</u> - Severe weather with indication of sustained high winds ≥ 74 mph within the protected area boundary</p> <p><u>Tornado</u> - Report by plant personnel of a tornado striking within the PROTECTED AREA boundary</p> <p><u>Earthquake</u> - Valid indication of a felt earthquake: Vibratory ground motion felt in the PROTECTED AREA and recognized as an earthquake AND Activated seismic switches as indicated by activation of the Seismic Monitoring System</p> <p><u>Flooding</u> - Uncontrolled flooding in the Auxiliary Building (Table H1) that has the potential to affect safety related equipment needed for the current operating mode</p>	<p><u>Hurricane</u> - Severe weather with indication of sustained winds ≥ 74 mph within PROTECTED AREA boundary and resulting in VISIBLE DAMAGE to Plant Structures containing Functions or Systems Required for Safe Shutdown (Table H2) or has caused damage as evidenced by Control Room indication of degraded performance of those systems</p> <p><u>Tornado</u> - Tornado striking within the PROTECTED AREA boundary and resulting in VISIBLE DAMAGE to any of the Plant Structures containing Functions or Systems Required for Safe Shutdown (Table H2) or Control Room indication of degraded performance of those systems</p> <p><u>Earthquake</u> - Valid indication of a seismic event greater than an Operating Basis Earthquake:</p> <ul style="list-style-type: none"> • Receipt of all of the following indications on SH13P856: <ul style="list-style-type: none"> ○ Containment Operating Basis Earthquake ○ Drywell Operating Basis Earthquake 	None

Licensee Natural Phenomena Response Requirements

Palo Verde

LICENSEE EMERGENCY PLAN REQUIREMENTS	<u>NOUE</u>	<u>ALERT</u>	<u>SITE AREA EMERGENCY</u>
TECHNICAL SPECIFICATION OPERATING REQUIREMENTS			
SHUTDOWN REQUIREMENTS			
APPLICABLE OPERATING PROCEDURES	"Acts of Nature" - Procedure 40AO-9ZZ21		

Tornado - Tornado affecting the protected area(s) **OR** Tornado affecting a loaded spent fuel storage cask Confinement Boundary

Flooding - Flooding affecting a loaded spent fuel storage cask Confinement Boundary **OR** Flooding affecting the protected area(s)

Earthquake - Valid "Event Trigger" indicated on Seismic Warning Panel **OR** seismic activity affecting a loaded spent fuel storage cask Confinement Boundary.

Tornado - Visible damage to permanent structures and equipment, affecting plant operations **OR** Sustained winds >105 mph (design levels) or tornado with average winds >300MPH (design basis)

Flooding - Flooding potentially affecting safety systems required for the current operating mode **OR** visible structural damage to any building containing safe shutdown equipment.

Earthquake - OBE annunciator alarm in control room **AND** earthquake >0.12g horizontal and vertical as indicated by light "OSG-AE-1" or "OSG-AE-2" **OR** visible structural damage to any building containing safe shutdown equipment

All Hazards - Other conditions exist which, in the judgement of the Shift Manager/ Emergency Coordinator, indicate actual or likely major failure of plant functions needed for protection of the public.

Licensee Natural Phenomena Response Requirements

River Bend Station

<p>LICENSEE EMERGENCY PLAN REQUIREMENTS</p>	<p style="text-align: center;"><u>NOUE</u></p> <p><u>Hurricane</u> - Severe weather or hurricane conditions with indication of SUSTAINED high winds greater than or equal to 74 mph in the PROTECTED AREA.</p> <p><u>Tornado</u> - Report by plant personnel of a tornado striking within the PROTECTED AREA boundary.</p> <p><u>Flooding</u> - Uncontrolled flooding in the Auxiliary Building (Table H1) that has the potential to affect safety related equipment needed for the current operating mode.</p>	<p style="text-align: center;"><u>ALERT</u></p> <p><u>Hurricane</u> - Hurricane or high SUSTAINED wind conditions greater than 74 mph within PROTECTED AREA boundary AND resulting in VISIBLE DAMAGE to plant structures containing equipment necessary for safe shutdown (Table H2), OR has caused damage as evidence by control room indication of degraded performance of those systems.</p> <p><u>Tornado</u> - Tornado striking within the PROTECTED AREA boundary AND resulting in VISIBLE DAMAGE to any of the plant structures (Table H2) or equipment therein OR control room indication of degraded performance of those systems.</p> <p><u>Flooding</u> - Uncontrolled flooding in the Auxiliary Building 70' elevation that results in degraded safety system performance as indicated in the control room OR that creates industrial safety hazards (e.g., electrical shock) that precludes access necessary to operate OR monitor safety equipment.</p>	<p style="text-align: center;"><u>SITE AREA EMERGENCY</u></p> <p style="text-align: center;">N/A</p> <p style="text-align: center;"><u>Table H2</u></p> <p style="text-align: center;"><u>Structures Containing Functions or Systems Required for Safe Shutdown</u></p> <p>Reactor Building Auxiliary Building Control Building Standby Cooling Tower Diesel Generator Building Tunnels (B, D, E, F, G)</p>
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Licensee Natural Phenomena Response Requirements

San Onofre

LICENSEE EMERGENCY PLAN REQUIREMENTS	<p style="text-align: center;"><u>NOUE</u></p> <p>Hurricane - National Weather Service (NWS) issues hurricane warning AND SONGS is in the projected path OR Severe wind or storm flooding which causes inoperability of a safety related system to the extent that reactor shutdown has initiated as specified in the applicable Tech Spec.</p> <p>Tornado - NWS issues a tornado warning AND a tornado is observed touching down in the protected area or ISFSI area OR Severe wind or storm flooding which causes inoperability of a safety related system to the extent that reactor shutdown has initiated as specified in the applicable Tech Spec.</p> <p>Tsunami - NOAA issues a tsunami warning AND predicted wave height of >30ft mllw is calculated in SO23-13-8, Att 5</p> <p>Earthquake - Earthquake causing receipt of a valid seismic trigger alarm</p>	<p style="text-align: center;"><u>ALERT</u></p> <p>Hurricane/Tornado/Tsunami - Causing the loss of ability to achieve or maintain <u>cold</u> shutdown</p> <p>Earthquake - Earthquake >0.33g (Operating Basis Earthquake)</p>	<p style="text-align: center;"><u>SITE AREA EMERGENCY</u></p> <p>All Hazards - Natural phenomena event causing the loss of ability to achieve or maintain <u>hot</u> shutdown</p>
TECHNICAL SPECIFICATION OPERATING REQUIREMENTS			
SHUTDOWN REQUIREMENTS	Plant S/D required if predicted tsunami wave height is between $\geq +20$ feet and $\leq +30$ feet mean lower low water level (mllw). Plant S/D should be considered if basic wind velocity is expected to exceed 73 mph or tornado total wind velocity is expected to exceed 157 mph.		
APPLICABLE OPERATING PROCEDURES	"Emergency Plan Implementation Procedure" - Procedure SO123-VIII-1 "Abnormal Operating Instruction - Severe Weather" - Procedure SO23-13-8 "Abnormal Operating Instruction - Earthquake" - Procedure SO23-13-3		

Licensee Natural Phenomena Response Requirements

South Texas Project

LICENSEE EMERGENCY PLAN REQUIREMENTS	<u>NOUE</u>	<u>ALERT</u>	<u>SITE AREA EMERGENCY</u>
	<p>Hurricane - S/D of the facility required due to actual or predicted natural phenomena</p> <p>Tornado - Tornado striking facilities within the PA</p> <p>Earthquake - Earthquake detected by seismic monitoring system AND confirmed by Seismic Event Procedure</p> <p>Flooding - Other conditions exist which in the judgement of the Emergency Director indicate a potential degradation of the level of safety of the plant.</p>	<p>Hurricane/Tornado - Tornado or high winds causing visible structural damage to any of the following plant structures:</p> <ul style="list-style-type: none"> - Reactor Containment Building - ECW Intake Structure - Mechanical/Electrical Aux Building - Isolation Valve Cubicle* - Fuel Handling Building - EDG Building <p>(*) Note: Loss of Isolation Valve Cubicle blow-off roof is not considered structural damage.</p> <p>Missile hazards not consider credible. (See UFSAR 3.5) Considerations for flooding addressed in FUSAR 3.4.3.2.</p> <p>Earthquake - Seismic motion exceeding Operating Basis Earthquake as indicated by Seismic monitor alarm AND confirmed by procedure</p> <p>Flooding - Floodwater entering safety related structures such that the function of safety related equipment is jeopardized or predicted OR Actual breach of Main Cooling Reservoir retaining Dike along the North Wall</p>	<p>Other conditions exist which in the judgement of the Emergency Director indicate actual or likely major failures of plant functions needed for the protection of the public.</p>

Licensee Natural Phenomena Response Requirements

Waterford 3

<p>LICENSEE EMERGENCY PLAN REQUIREMENTS</p>	<p><u>NOUE</u> (affects the plant PROTECTED AREA)</p> <p><u>Hurricane</u> – Site predicted to experience a hurricane with hurricane force winds (>74 mph) on site within 12 hours as projected by the National Weather Service</p> <p><u>Tornado</u> – Report by plant personnel of tornado or high winds > 100 mph striking within the PROTECTED AREA boundary</p> <p><u>Flooding</u> – > +27' MSL at the intake OR uncontrolled flooding in RAB or CT areas, that has the potential to affect safety-related equipment needed for the current operating mode</p> <p><u>Earthquake</u> – Earthquake felt in plant and detected on station seismic equipment</p>	<p><u>ALERT</u> (affects the plant VITAL AREA)</p> <p><u>Hurricane</u> – Same as tornado</p> <p><u>Tornado</u> – Tornado or high winds > 100 mph within the PROTECTED AREA boundary and resulting in VISIBLE DAMAGE to any of the following plant structures/equipment or Control Room indication of degraded performance of those systems</p> <ul style="list-style-type: none"> • Containment • Reactor Auxiliary Building • Turbine Building • Cooling Tower Areas <p><u>Flooding</u> – Uncontrolled flooding in Reactor Auxiliary Building or Cooling Tower Areas, that results in degraded safety system performance as indicated in the Control Room or that creates industrial safety hazards that preclude access necessary to operate or monitor safety equipment</p> <p><u>Earthquake</u> – RED light on the plant seismic monitor panel indicates a VALID seismic event > operating basis earthquake</p>
<p>TECHNICAL SPECIFICATION OPERATING REQUIREMENTS</p>		
<p>SHUTDOWN REQUIREMENTS</p>	<p>Shutdown required 12 hours prior to arrival of hurricane conditions on site. (Ref. OP-901-521,</p>	
<p>APPLICABLE OPERATING PROCEDURES</p>	<p>"Recognition and Classification of Emergency Conditions" - Procedure EP-001-001 "Severe Weather and Flooding" - Procedure OP-901-521</p>	

Licensee Natural Phenomena Response Requirements

Wolf Creek

<p>LICENSEE EMERGENCY PLAN REQUIREMENTS</p>	<p style="text-align: center;"><u>NOUE</u></p> <p>Tornado – Tornado reported in the protected area</p> <p>Earthquake – Earthquake felt in the plant AND control room annunciator 00-98E, SEISMIC RECORDER ON, is alarm, >=0.02g</p> <p>All Hazards – If the event caused the loss of a safety related train and has the potential to be a common mode failure</p>	<p style="text-align: center;"><u>ALERT</u></p> <p>Tornado – 1) Report of wind speed greater than 95 mph. OR 2) Report of a tornado striking within the protected area and there is visible or other plant indication of damage to any of the following: Reactor Bldg, Control Bldg, Fuel Bldg, Aux Bldg, EDG Bldg, EDG FOST access valvults, Turb Bldg (structural integrity only), Comm Corridor (structural integrity only), ESW</p> <p>Earthquake - Earthquake >0.05g ground acceleration (Control Room annunciators for OBE or OBE exceeded are in alarm)</p>	<p style="text-align: center;"><u>SITE AREA EMERGENCY</u></p> <p style="text-align: center;"><u>None</u></p>
<p>TECHNICAL SPECIFICATION OPERATING REQUIREMENTS</p>			
<p>SHUTDOWN REQUIREMENTS</p>			
<p>APPLICABLE OPERATING PROCEDURES</p>	<p>"Natural Events" - Procedure OFN SG-003 "Severe Weather" - Procedure AI 14-006 "Emergency Classification" - Procedure EPP 06-005 "R SPCTRM OBE EXCEED," Alarm Response Procedure 00-98C "OBE," Alarm Response Procedure 00-98D "Seismic Recorder On," Alarm Response Procedure 00-98E</p>		

Licensee Natural Phenomena Response Requirements

C:\FoiaProject\FoiaPDFExport\PSTs\RST01B_HOC\Emails\00301\00002.docx

From: Dyer, Jim
Sent: Friday, March 11, 2011 2:51 PM
To: Decker, David
Cc: Schmidt, Rebecca; Powell, Amy; Golder, Jennifer
Subject: darft testimony 3/16

The only comment I have are optional changes/enhancements

1.

2.

(b)(5)

Jim

From: Schmidt, Rebecca
Sent: Saturday, March 12, 2011 5:40 AM
To: Dacus, Eugene
Subject: (b)(6)

(b)(6)

From: Powell, Amy
Sent: Tuesday, March 15, 2011 10:24 PM
To: Batkin, Joshua
Cc: Schmidt, Rebecca
Subject: FYI re: hearing
Attachments: Formal Submission of Petition for Rulemaking; FW: Did Not Get Confirmation

Importance: High

Missed this earlier – FYI in case you had not seen it. Petitioner states he will provide copy to E&C

From: Helton, Shana
Sent: Tuesday, March 15, 2011 3:50 PM
To: Andersen, James
Cc: Bladey, Cindy; Reed, Timothy; Powell, Amy; McGinty, Tim; Quay, Theodore; Blount, Tom; Boger, Bruce; Leeds, Eric; Meyer, David; Wittick, Brian; Virgilio, Martin; Mizuno, Geary; O'Sullivan, Kevin; Danna, James
Subject: FYI: Action: Formal Submission of Petition for Rulemaking
Importance: High

Jim,

(b)(5)

(b)(5)

If the Chairman gets a question regarding this petition:

- -
 -
 -
- (b)(6)

Please contact myself or Cindy Bladey if you have any questions.

Thank you,
Shana

From: Bladey, Cindy
Sent: Monday, March 14, 2011 3:52 PM
To: Jones, Bradley; Helton, Shana; O'Sullivan, Kevin; Danna, James
Cc: Mizuno, Geary; Terry, Leslie; Schoenmann, Sandra; Meyer, David
Subject: Action: Formal Submission of Petition for Rulemaking
Importance: High

See the attached PRM from Thomas Popik, on behalf of the Foundation for Resilient Societies.

I sent you an earlier draft of this PRM on Feb. 7; note that the petitioner states that this version has been extensively modified from the draft submission. He also states he will provide a copy of this PRM to the House Energy and Commerce Committee in anticipation of the March 16 hearing with Commissioner Jaczko and Secretary Chu as witnesses.

Please review the submittal to determine if it meets the sufficiency requirements of 2.802; I'd like your response ASAP; if possible, by COB 3/15/2011.

Thanks,
Cindy

Cindy Bladey, Chief
Rules, Announcements, and Directives Branch
TWB-05-A01
301-492-3667
cindy.bladey@nrc.gov

From: Rulemaking Comments
Sent: Monday, March 14, 2011 3:25 PM
To: Jaegers, Cathy; Bladey, Cindy; Clayton, Kathleen; Mamish, Nader
Cc: Vietti-Cook, Annette; Rulemaking Comments; Giitter, Rebecca; Greathead, Nancy; Julian, Emile; Lewis, Linda; Ngbea, Evangeline; Pierpoint, Christine
Subject: FW: Formal Submission of Petition for Rulemaking
Importance: High

Attached is a Petition for Rulemaking submitted by Thomas Popik, on behalf of the Foundation for Resilient Societies, requesting the NRC adopt regulations that would require facilities licensed under 10 CFR Part 50 to assure long-term cooling and unattended water makeup of spent fuel pools.

ACTION OFFICE: EDO

ACTION: APPROPRIATE

Evangeline S. Ngbea
Rulemakings and Adjudications Staff
Office of the Secretary

From: Darrell Heasley <dheasley@caci.com>
Sent: Thursday, March 17, 2011 8:38 AM
To: Schmidt, Rebecca
Subject: FW: Rebecca's Picture

Darrell Heasley
Director
Intelligence Support Programs
Office: 703 460-1371
Cell: (b)(6)

From: Milton Schwab [mailto:(b)(6)]
Sent: Wednesday, March 16, 2011 9:17 PM
To: Darrell Heasley
Subject: Rebecca's Picture

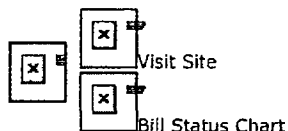
Darrell,

Check out the picture along with this article if you haven't seen it already..... Milton

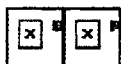
<http://finance.yahoo.com/news/NRC-No-water-in-spent-fuel-apf-2091500355.html?x=0&sec=topStories&pos=main&asset=&ccode=>

From: CQ Budget Tracker <budgettracker-owner@cqrollcall.com>
Sent: Friday, March 11, 2011 7:03 AM
To: Schmidt, Rebecca
Subject: CQ Budget Tracker Newsletter





Chuck Conlon, Editor, budget@cq.com



Action Moves Behind the Scenes

Efforts to reach a compromise on spending for the remainder of the fiscal year are moving behind closed doors, as leaders prepare to extend current stopgap funding to allow those negotiations to occur.

The two sides yesterday were still absorbing the consequences of Wednesday's votes in the Senate, with each calling on the other to make the first move toward a compromise. "Yesterday's budget votes didn't bring us any closer to a conclusion, but it did make one thing very clear," said Senate Majority Leader Harry Reid, D-Nev., referencing the solid rejection of both GOP and Democratic spending plans. "That lesson is this: One party alone will not reach a resolution without the other's cooperation and consent." Reid said Democrats had accepted "the lesson" of Wednesday's votes and were willing "to make sacrifices to reach consensus," adding, "Perhaps Republicans are willing to offer more reasonable cuts that the Democratic caucus can support." House Speaker John A. Boehner, R-Ohio, meanwhile, noted that Democrats still didn't have a spending plan that had been approved by the Senate. When asked whether he was willing to back off from the House's position, he replied, "To where? Where is the Senate Democrat plan?"

[Reid Floor Statement](#)

GOP leaders yesterday pushed back against Democratic suggestions that cuts to mandatory spending and tax increases become a part of the debate over current discretionary spending. "What's before us at the moment is the domestic discretionary spending reductions," Senate Minority Leader Mitch McConnell, R-Ky., said yesterday in an MSNBC interview. But indicating his continued desire to begin addressing the growing cost of major entitlements, he added, "We need to do entitlement reform. But we can't do that without the president's complicity, involvement and signature." Boehner told reporters, "To try to muddle the current issue with entitlement programs, tax increases, that's what the next budget process is for, and we'll have plenty of opportunities to talk about that."

[CQ Transcript: McConnell on MSNBC](#)

House Republican leaders may be trying to prepare GOP conservatives



Updated 12:37 a.m., Friday 3/11

FY 2011 Spending / Cuts



Negotiations move behind the scenes in the wake of

Wednesday's Senate votes, where both

the GOP and Democratic plans were

rejected. House leaders expect to

unveil a new extension of stopgap

spending to allow negotiations to

continue. [CQ Today Story](#) | [Complete](#)

[Bill Coverage](#)

for a possible compromise on current spending, however, by assuring them that there will be more opportunities in coming weeks and months. House Budget Committee Chairman Paul D. Ryan, R-Wis., in coming weeks will be unveiling the House GOP's budget resolution, which is expected to propose cuts in both discretionary spending and entitlement spending. And Congress will soon have to deal with legislation to increase the statutory debt limit, which Republicans have vowed to oppose unless it is accompanied by spending cuts and controls on spending. The left-leaning Center on Budget and Policy Priorities (CBPP) yesterday released a paper arguing that the spending cut proposals made by Republicans and Democrats are both very substantial. Noting that the media focus has been on the difference between the two positions, CBPP says: "This focus has obscured the fact that the proposed cuts from both sides are quite deep when compared to last year's enacted funding levels, adjusted for inflation — the usual measuring stick for funding proposals." CBPP calculates that the House-passed GOP bill ([HR 1](#)) would actually cut discretionary funding by \$92 billion below the 2010 level, adjusted for inflation, while the Senate Democratic alternative would cut funding by \$40 billion below the inflation-adjusted 2010 level.

[CQ Today Story](#)

[CBPP Analysis of Spending Cut Proposals](#)

House GOP appropriators expect to unveil their next extension of stopgap funding today. Current stopgap funding expires next Friday, March 18, and aides yesterday said it hadn't been decided how long the next CR extension would run. Anywhere from two to four weeks is possible. Like the last CR extension, however, it would cut about \$2 billion in spending for each week it runs. Those cuts are also expected to be similar to the last extension, focusing on accounts that in fiscal 2010 had been earmarked and on programs that President Obama proposed to cut or terminate in his fiscal 2012 budget plan.

[CQ Today Story](#)

MORE HURDLES AHEAD: Moving legislation in the Senate is always difficult given the ability of individual senators to filibuster a bill, and it's becoming more difficult as senators continue to put up potential roadblocks.

Ten GOP senators on Thursday announced they will block all legislation except bills cutting spending in an effort to jump-start debate on government spending and debt in advance of any vote on raising the debt limit. "With our national debt poised to reach its \$14.3 trillion limit in the very near future, taxpayers expect Congress to work

together to reduce wasteful and unnecessary spending and be more vigilant about how we spend public funds. The American people want Congress to deal with the tough issues of cutting spending, and almost every member of the Senate has agreed that we must address our fiscal situation immediately," they said in a letter to Majority Leader Reid. The senators, led by Louisiana's David Vitter, complained that there had been little debate on the two spending cut alternatives voted on Wednesday, and that no amendments were permitted. And pointing to the 2009 Christmas Eve vote on the Democrats' health care overhaul bill, which they said was intended "to force hurried debate," they indicated that they didn't want to repeat "that flawed process" with respect to the debt limit. "If the Senate agrees to dedicate significant floor time to debate this issue well in advance of the federal government reaching our statutorily mandated debt limit," they would not try to block other legislation, the conservative senators wrote.

[CO Today Story](#) | [Vitter Release & Letter](#) | [Reid Spokesman's Response](#)

Five of the 10 GOP senators were part of a group of eight conservative Republicans who last week announced that they will block consideration of any legislation they consider "fiscally irresponsible."

That effort, led by Oklahoma's Tom Coburn, established various criteria for bills that must be met, including that any new spending be offset by spending cuts elsewhere, that bills creating new programs eliminate any duplicative program or consolidate similar programs, and that all programs and agencies have "sunsets" so Congress can decide whether they will be continued. The five senators on both GOP initiatives are Jim DeMint of South Carolina, John Ensign of Nevada, Kelly Ayotte of New Hampshire, Mike Lee of Utah and Rand Paul of Kentucky. In addition to Vitter, the other four senators on the new initiative are Jeff Sessions of Alabama, Marco Rubio of Florida, Patrick J. Toomey of Pennsylvania, and Roger Wicker of Mississippi.

[Coburn et al Dear Colleague](#)

Meanwhile, Senate Appropriations Chairman Daniel K. Inouye called for a return to "regular order" on the budget and appropriations process, lest the government end up being funded by CR again when fiscal 2012 starts in October. "We must find a way to accomplish the tasks that the Constitution has assigned to us," the Hawaiian Democrat said in a speech on the Senate floor. "To do this, we need a budget resolution; we need the House to send over appropriation bills in a timely fashion; we need floor time; and we need a willingness to vote on amendments. Without these four things, there is no doubt in my mind that I will be standing in this chamber in late September, yet again, seeking passage of a continuing resolution in order

to avoid shutting down the government.” Inouye noted that spending bills have frequently been “held hostage” by the desire of members to offer “message amendments” on the floor, but he argued that Senate Democrats must allow some such amendments to get the bills passed. “If a more open amendment process for relevant amendments will enable these bills to move forward, we should be open to such an approach, even if that means taking some uncomfortable votes. This chamber is split 53-47. Both sides will need to give a little bit, and in so doing, it is my hope that we can get the bipartisan appropriations process back on track.”

Inouye Floor Speech

Developing an annual budget resolution that is acceptable to both the Republican House and Democratic Senate will be a very tall order, however, given the wide political gulf between the two parties on spending. A final budget resolution sets an annual cap on discretionary spending (the so-called 302(a) allocation), which the Appropriations Committees in both chambers then split between their 12 spending bill. In the absence of a final budget, each chamber can adopt a “deeming resolution” to set its own spending cap, but they can be at very different levels — making it difficult to eventually reconcile spending between the two chambers, similar to the current situation with fiscal 2011 spending. “The House must step up to the plate with a budget that is workable,” Inouye said. “It cannot hide behind vague rhetoric and arbitrary spending caps. It should not insist upon irrational programmatic cuts that would devastate the everyday lives of the American people. Likewise, it is imperative that the Senate do its part in moving a budget through a responsible and regular order process.”

GOVERNMENT LOGS RECORD DEFICIT FOR A SINGLE MONTH: As the government cruises toward what is expected to be a record deficit this year in dollar terms, the Treasury Department on Thursday reported that it had also set a new record deficit for a single month.

The deficit for February was \$222.5 billion, exceeding the previous high of \$221 billion recorded last February, Treasury reported in its monthly statement. It represents only the second time the deficit for a single month has exceeded \$200 billion, and the 23rd time that a monthly deficit has exceeded \$100 billion — with 18 of those instances occurring since the end of calendar year 2007, when the nation’s economy fell into a recession. The government has not run a monthly surplus since September 2008. February’s deficit raised the cumulative deficit for the first five months of fiscal 2011 to \$641 billion, or \$10 billion less than the cumulative deficit for the comparable

period last year. The Congressional Budget Office (CBO) has projected that the deficit for the year will reach \$1.48 trillion. So far for the year, Treasury reports that revenues are up 8.5 percent (\$68.5 billion) while spending is up 4 percent (\$58 billion).

[Treasury's Monthly Statement](#) | [Treasury Summary of Past Monthly Deficits](#)

HOUSE APPROPRIATORS QUESTION OBAMA'S EDUCATION

PRIORITIES: A leading House GOP appropriator on Thursday pressed Education Secretary Arne Duncan to give appropriators a fiscal 2012 budget proposal based on current law, rather than the agency's vision for rewriting the nation's education law.

Labor-HHS-Education Appropriations Chairman Denny Rehberg warned Duncan that his panel would likely have to mark up its annual spending bill before Congress rewrites the nearly decade-old education law, known as No Child Left Behind. "Nobody believes they can be done that quickly," Rehberg, R-Mont., said at his panel's hearing on President Obama's fiscal 2012 Education budget request, referring to possible changes by the authorizing committees. "If we're going to have to make decisions based upon the current law, I need a budget so that I can see what your priorities are and not try to guess." The law has become widely unpopular, and Duncan reiterated that he wants Congress to pass a reauthorization bill to modify the law before the start of the next school year. Rep. Rodney Alexander, R-La., initially raised the timing issue, asking Duncan how he would propose to distribute funding under the current education structure ([PL 107-110](#)). "Absent action from the authorizing committee, it is difficult for us to fund programs under the vast and different structure that you've proposed," Alexander said.

But Duncan was noncommittal in his response to Rehberg's call for a new spending blueprint, emphasizing the need for the legislative and executive branches to find common ground on education funding.

"Congress and the administration have to work together to protect our nation's students — and Congress should not let process and procedure get in the way of what the right thing to do is," Duncan said. "Well, process and procedure is called the law," countered Rehberg. "And we don't have any choice. If something does not make it through the House, the Senate, the conference committee and signed by the president, it doesn't matter what I want or you want. . . . We're going to have to make a decision."

[Duncan Prepared Testimony](#)

Panel Democrats expressed concern that the president's education

proposal represents a move away from formula funding, a worry that Senate Budget Committee members from both parties raised with Duncan during a hearing last week. California Democratic Reps. Lucille Roybal-Allard and Barbara Lee questioned whether requests for new competitions, including \$900 million for a third round of Race to the Top funding, indicate a preference for competitive programs. "My fear is that these competitive grants will favor school districts with the resources and the capacity to write grant applications at the expense of those districts which have the greatest need, but have fewer resources and fewer expertise at writing these grants," Roybal-Allard said. As he told the Senate Budget panel, however, Duncan assured lawmakers that 84 percent of the budget continues to be formula-based. "We're actually looking for increases in Title I funding and IDEA [Individuals with Disabilities Education Act] funding and want to continue every single year to increase our investments there," he said. "At the same time, we can't just do formula funding. We have to challenge the status quo to get better."

While Rehberg questioned the administration's proposal to eliminate the year-round Pell award, subcommittee ranking Democrat Rosa DeLauro of Connecticut applauded the president's Pell funding requests. She praised Obama for calling on Congress to maintain the \$5,550 maximum Pell award for low-income college students and blasted Republicans' proposal in the House-passed HR 1 to reduce the maximum grant by \$845. "Cutting back on student financial aid is not something that we ought to be doing when the need is so high," DeLauro said. "That reduction, as I look at it, would take us back almost 40 years on the proportion of college costs that would be covered by Pell." Duncan agreed that further cuts to the Pell program would be "devastating," noting that more than half of those who drop out of college do so for financial reasons. "We cannot scale back on Pell grants," he said.

DeLauro Opening Statement

Obama's fiscal 2012 budget requests \$77.4 billion in discretionary budget authority for the Education Department, a 10.7 percent increase over current spending levels. Duncan said it calls for \$28.6 billion in discretionary funding for the Pell program and would reduce other tuition subsidies by \$100 billion over 10 years to cover the costs. The budget also proposes consolidating 38 education programs into 11 as part of the Elementary and Secondary Education Act reauthorization, he said, and would save \$147 million by eliminating 13 additional programs.

Melissa Atlas contributed to this report.

In Brief

• **Fiscal Realities Will Require Funding Cuts to Pentagon Programs,**

Senators Say: The Senate Budget Committee delivered a bipartisan message to the Defense and State departments Thursday: Even in the midst of war, your budgets will have to come down to help address the national debt. [Full Story](#)

• **State Department Is Warned Funds Are Shrinking Even as Missions**

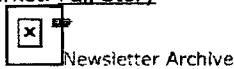
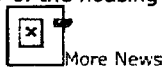
Expand: The top House appropriator responsible for State Department and foreign aid spending bluntly told the Obama administration Thursday that it "will not be possible" to provide full funding for that portion of the 2012 budget request. [Full Story](#)

• **Murray to LaHood: Absence of Blueprint Puts High-Speed Rail at Risk:**

The White House's vision for a network of high-speed passenger trains is threatened by the Transportation Department's failure to produce a congressionally mandated national rail plan on time, the Senate appropriations cardinal who oversees transportation spending said Thursday. [Full Story](#)

• **House Republicans Begin Push to End Foreclosure Assistance Programs:**

The House on Thursday passed the first of four Republican bills aimed at terminating foreclosure assistance programs touted by the Obama administration as critical to recovery of the housing market. [Full Story](#)



New bill information since Tuesday, Mar. 8

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From: Political Bulletin <PoliticalBulletin@bulletinnews.com>
Sent: Friday, March 11, 2011 7:25 AM
To: Schmidt, Rebecca
Subject: Today's Political News From The Editors of Bulletin News

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MEMORANDUM FOR BECKY SCHMIDT

SUBJECT: TODAY'S POLITICAL NEWS

DATE: FRIDAY, MARCH 11, 2011 - 8:00 AM

WASHINGTON NEWS

INSIDE


Washington News
Campaign News
Political Humor




King Hearing On Muslim Radicalization Generates Partisan Heat

Media coverage of the House Homeland Security Committee hearing on the problem of homegrown terrorism gave Chairman Peter King a mostly negative assessment. Rep. Keith Ellison's emotional testimony was generally given very positive reviews, and the charges of McCarthyism and countercharges of political correctness largely subsumed the goal of the hearing to examine radicalization of American Muslims.

ABC World News reported, "There was real tension and tight security today at a congressional hearing on homegrown terror." Ellison, the "first Muslim member of Congress, wept as he told the story of a young man who died on 9/11, trying to save others." Rep. Ellison: "His life should not be identified as just a member of an ethnic group or just a member of a religion, but as an American who gave everything for his fellow Americans." Thomas: "The debate was heated and mostly partisan."


The CBS Evening News reported, "Critics say that by holding the hearing, Peter King is unfairly demonizing an entire religion. King contends Muslim Americans are not doing enough to fight terrorism or to keep young Muslims from being drawn into it." NBC Nightly News reported the hearing "for a time appeared to blow up in the face of" King. After "the Administration said Al Qaeda is trying to recruit inside the US, King says it's his duty to investigate." Democrats "repeatedly protested that this hearing was too narrow and should have included other extremist groups."


AFP  reports the "testimony reached an early emotional peak" when Ellison "broke down in tears as he warned against 'scapegoating' and told the story of a Muslim-American paramedic who died in the attacks on the World Trade Center." The panel "also heard from a Tennessee father whose son converted to Islam, was radicalized and then killed a US Army private, and from the uncle of a Somali-American teenager who was inspired to embrace extremism and travel to Somalia, where he was killed."

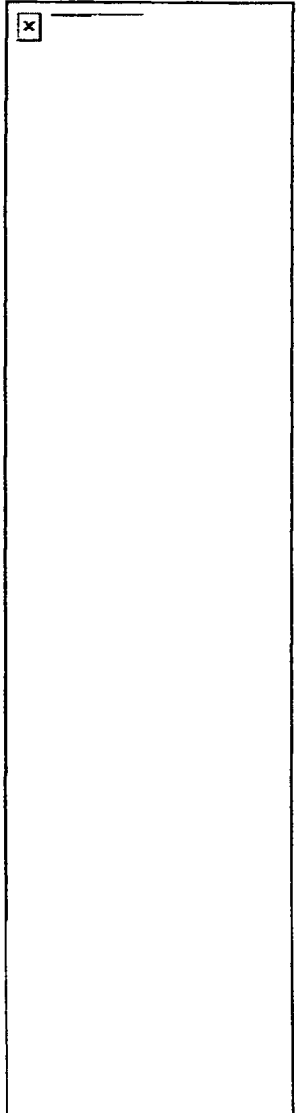
Roll Call  reports a "striking image of the Twin Towers burning down was a backdrop Thursday to" King's hearing. The Los Angeles Times  reports a "defiant King said after the hearing that he had 'broken down a wall of political correctness on an issue that needs to be addressed.' At the beginning, he blasted his many critics, saying they had engaged in 'paroxysms of rage and hysteria.'" The Washington Post  reports Ellison's testimony "was the emotional peak of a dramatic, long-awaited hearing, in which Congress was in the spotlight as much as Islam."

ABC Challenges King's Justification For Hearings ABC World News reported Rep. King "claims there's not enough cooperation from American Muslims in fighting terrorism." But the Administration says "members of the Muslim community" are "cooperating." Attorney General Holder: "Leaders of the Muslim community have contributed significantly to the resolution of the things we have resolved." Thomas: "Second, King claims that a significant number of US mosques have radical elements. We wanted to know if radicalism is rampant in US mosques. Sources say many of those charged were radicalized online or by overseas sources. Others in prison."

Boehner Blames Administration's Energy Policies For Gas Prices

During a news conference Thursday, Politico  reports, Speaker Boehner put the blame for high gas prices on President Obama's energy policies, saying that the Administration's "moratorium on oil drilling in the Gulf, as well as his decision to cancel leases on drilling in national parks, has contributed to the rising prices." Politico points out that "Boehner did not mention the turmoil in the Middle East -- which has largely contributed to the spike in oil prices -- at his press conference."

In a separate story, under the headline "Gas Prices Change Energy Politics," Politico  reports, "Democratic leaders insist that voters won't punish their party for high gas prices -- but the pain at the pump could make it even



harder for them to pass the president's energy agenda." Meanwhile, "Republicans have shown no fear in tying the oil price spikes to anything on the Democratic energy agenda," from President Obama's "stance on offshore drilling permits to long dead cap-and-trade legislation and pending climate change rules for power plants."

House Democrats Introduce Bill To Open SPR The Hill's [redacted] "E2 Wire" blog reports a group of House Democrats, led by Rep. Edward Markey, "introduced legislation Thursday to tap the country's oil reserves in response to rising prices." The bill "would require that over the next six months at least 30 million barrels of oil be released from the [Strategic Petroleum Reserve]," however, the story points out, ultimate authority to release oil from the SPR lies with the President.

Obama To Hold News Conference On Energy Costs This Morning President Obama plans to hold a news conference to address rising oil and gasoline prices Friday morning, the AP [redacted] says. Reports of Saudi Arabian police forces opening fire to break up a protest Thursday "sparked fears that the unrest could spread" to the world's largest oil exporter. Obama's second full news conference of 2011 is scheduled to start at 11:15 a.m. EST.

Wisconsin Assembly Passes Controversial Public Union Bargaining Bill A day after Republicans in the Wisconsin state Senate used procedural maneuvers to pass a bill stripping public unions of most collective bargaining rights, the state Assembly passed the bill, sending it to Gov. Scott Walker. While media reports, including the lead story on NBC, portray the vote as a win for Walker, many outlets note the controversy has energized unions and the Democratic allies.

NBC Nightly News reported the Wisconsin legislation "is being called one of the strongest blows to the power of unions in years." The "legislative fight that has roiled for four weeks was over in barely 30 minutes. Republicans used an unusual parliamentary maneuver to separate the collective bargaining measure from the bill's spending provision. That allowed them to pass the legislation without any of the Senate Democrats, who had blocked a vote by fleeing the state."

The CBS Evening News reported, "Protestors and police shoved each other outside the capital, while inside, authorities forcibly removed demonstrators and locked out the media and even some lawmakers." Inside the Assembly, "the debate was fierce as Democrats fought against an inevitable loss." Democrats "vow they'll fight this legislation in court, challenging the way Republicans brought it to a vote which mean this is battle could continue for months." ABC World News reported, "Protesters scuffled with police who put the building on lockdown after state lawmakers approved the Governor's plan to strip public workers of their right to have a union to negotiate for them."

The AP [redacted] reports the White House "is denouncing a vote by the Wisconsin Senate to strip nearly all collective bargaining rights from government workers, calling it an assault on public employees." White House spokesman Jay Carney said President Obama "believes it is wrong for Wisconsin to use its budget troubles 'to denigrate or vilify public sector employees.'" The Milwaukee Journal Sentinel [redacted] reports "even with the battle won by Republicans, a wider war now remains for both sides, one expected to be fought in the courts and through recall efforts against 16 state senators."

Obama Says Bullying Not "Just A Harmless Rite Of Passage" Thursday's White House Conference on Bullying Prevention [redacted] received more attention on the three broadcast network newscasts than in major newspapers, with all three networks covering the emotional, television-ready issue. By contrast, several newspapers offer only online coverage. Though none of the three networks led with the story, both CBS and NBC used the event as a lead-in to detailed reports on bullying. ABC ran a shorter item. There was also substantial local news coverage across the US.

The CBS Evening News, which aired the longest report, said President Obama "used his bully pulpit today to talk about bullying. Thirty-two percent of middle and high school students say they've been bullied. That's up 18 percent from 2001." NBC Nightly News ran a similar story, reporting, "Bullying is such a big problem in this day and age in this country it got attention from the top today as the White House held a conference on it." ABC World News, in a briefer

item, said President Obama "got personal today, revealing that he was bullied as a boy. It came at a White House conference with parents, teachers and kids."

The AP [reports](#) the President "smiled when he said his large ears and funny name once made him a target of school-yard harassment. But he was all seriousness Thursday when he told a White House conference on bullying that torment and intimidation must not be tolerated." [Bloomberg News](#) [reports](#) the President "said some groups 'are stepping up and accepting responsibility,' including the Parent Teacher Association that's begun a campaign to get anti-bullying literature to parents. MTV is leading a new coalition to fight bullying online, the president said."

Like the AP, the [New York Times](#) [says](#) the President "poked fun at his own big ears and funny name...in the service of a serious subject." While the President "elicited chuckles" with his self-deprecation, "he and other participants also recalled examples from more recent and tragic stories of young people who killed themselves rather than endure further abuse from classmates, often for being gay or for being thought to be gay." Attendees "included relatives of two 11-year-old boys who had committed suicide in the last two years."

RCP Average Has Obama Job Approval At 48.2% The [RealClearPolitics](#) [reports](#) average of recent polling on President Obama's job approval has the President's approval at 48.2%, and disapproval at 47.2%. Approval is up 0.6% since yesterday; disapproval is up 0.5%.

Interim CEO Defends NPR As O'Keefe Releases Another Video The AP [reports](#) National Public Radio's interim president and CEO, Joyce Slocum, "said Thursday she is fully confident the organization's leadership team and said those who think their news coverage is biased would change their minds simply by listening to its programming." Slocum's comments "came just before conservative activist James O'Keefe posted a follow-up video as part of his undercover investigation of NPR." The new video "includes recordings of phone conversations between NPR executive Betsy Liley and an activist posing as a member of a phony group with ties to the fundamentalist Muslim Brotherhood."

The [Washington Post](#) [reports](#) Liley "said her organization would be willing to shield a would-be donor from a government audit by keeping the donor's name anonymous, according to a series of surreptitiously recorded phone calls released Thursday by a conservative activist." The [New York Times](#) [reports](#) Liley "believed she was talking to prospective donors from a group called the Muslim Education Action Center. In the recording, one of the fake donors asks her if a proposed \$5 million donation could be kept secret from the federal government, even if NPR's books are audited." In a statement "late Thursday, NPR disavowed the comments, saying that the statement by Ms. Liley, its senior director of institutional giving, was 'factually inaccurate and not reflective of NPR's gift practices.'"

Journalists Say Controversy Has Hurt NPR The [Los Angeles Times](#) [reports](#), "Some of the best-known journalists at NPR have released what they call an open letter 'to listeners and supporters' that calls remarks made by a former NPR fundraising executive 'offensive' and says they have done 'real damage' to the public broadcaster." On-air "personalities such as Robert Siegel, Scott Simon, Renee Montagne, Cokie Roberts and Nina Totenberg signed the letter, which comes a day after NPR's president and CEO, Vivian Schiller, resigned."

CAMPAIGN NEWS

Pawlenty: GOP Candidates Should Avoid Attacking Each Other In "The Brody File" blog on the website of the [Christian Broadcasting Network](#) [David Brody](#) asked Tim Pawlenty in an interview if he would "mix it up a little bit" with the other Republicans in the primaries if he entered the race, to which Pawlenty responded, "I'm going to be mixing it up with President Obama. The folks who are running, or may run, if I run, are going to be my friends. We're all going to have to be a team in the end."

[Politico](#) [further](#) quotes Pawlenty as telling Brody, "...I think it's important to, as best as possible, observe Ronald Reagan's 'Eleventh Commandment,' which is 'don't speak ill of another Republican.' There's going to be some differences between us, but the people and the press can sort that out. There's no need to be wailing on each other."

Sanchez May Be Eyeing Bid To Succeed Bingaman The Albuquerque Journal reports that Lt. Gov. John Sanchez (R) "won't make any announcement about a" potential bid to succeed retiring New Mexico Sen. Jeff Bingaman (D) "until after the current session of the New Mexico Legislature ends on March 19." Sanchez spokesman Mark Van Dyke said that while Sanchez "has been getting a lot of encouragement to run, he won't make an announcement for at least nine days."

The Hill adds Sanchez won the GOP gubernatorial nomination in 2002, "but lost to Democrat Bill Richardson in the general election. Last cycle, he won the nomination for the lieutenant governor and was swept into office with Gov. Susana Martinez in November."

Roll Call noting that ex-Rep. Heather Wilson (R) has already entered the contest, reported that GOP "sources say Sanchez would position himself to the right of Wilson, who exhibited a somewhat moderate voting record during three terms representing the Democratic-leaning 1st district that includes most of Albuquerque and its surroundings. While Wilson could be the most viable general election candidate for Republicans in a presidential year, Sanchez - also based in Albuquerque - has previously won two statewide GOP primaries, a feat that has eluded the former Congresswoman."

Kaine Won't Announce Decision On Senate Race This Week The Richmond (VA) Times-Dispatch reports that DNC chairman and former Virginia Gov. Tim Kaine won't "announce this week whether he intends to run for the US Senate. 'He has no plans to announce his intention on the Senate race this week,' a Democratic official authorized to speak for Kaine told the Richmond Times-Dispatch. ... Kaine is Virginia Democrats' first choice to succeed Sen. Jim Webb, a Democrat who last month announced that he will not seek re-election in 2012."

POLITICAL HUMOR

The Latest From Late Night Comedians

Jon Stewart: "Three weeks into a seemingly endless standoff between Wisconsin Governor Walker and state Democratic senators over a new law that would strip teachers and state workers of most of their collective bargaining rights, the standoff came to an abrupt end. Did the AWOL senators return, handing the governor a victory and quorum? Did the Governor cave and promise to remove the restrictions on collective bargaining in exchange for financial concessions?" Or did the Republicans use a loophole that allowed them to vote without the Democrats? The latter, which is a "little embarrassing. You know, it's like spending three weeks pushing against the door until finally someone goes, 'Uh, did you try pullin' it?'"

Stephen Colbert: "Nation, 2012 is right around the corner and everybody is searching for a fresh Republican face to take on President Obama, like Newt Gingrich. Not that fresh, but a lot of face."

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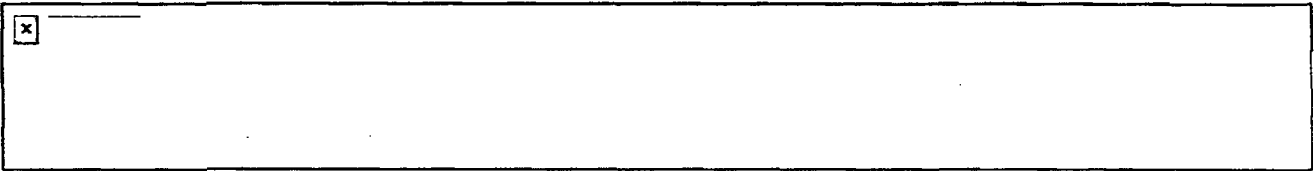
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This copy of the POLITICAL BULLETIN was sent to Rebecca.Schmidt@nrc.gov. You are receiving this because you registered on our website for daily email delivery. If you wish to no longer receive this briefing just [click here](#) to cancel future deliveries.

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From: Roll Call <rollcall@e.rollcall.com>
Sent: Friday, March 11, 2011 8:02 AM
To: Schmidt, Rebecca
Subject: Latest News From Roll Call Politics



Friday, Mar. 11, 2011

Politics



[Tensions High During Muslim Hearings](#)



[Twin Towers Photo on Display During King Hearings](#)



[Former DCCC Press Aide Lands at Consulting Firm](#)



[George Allen Hires Trusted Aide to Manage Campaign](#)



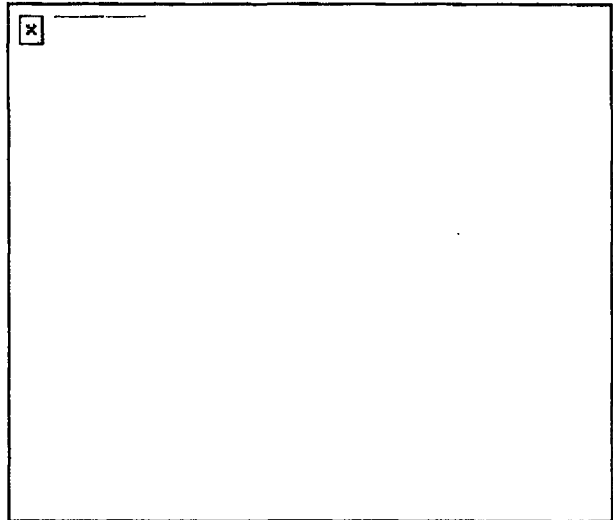
[Kaine to Keep Ambitions Secret This Weekend](#)



[Romney Gives Big Bucks to Freshmen, Rehberg](#)



[Republican Joining N.M. Senate Primary](#)



Tensions High During Muslim Hearings

Rep. Keith Ellison, the first Muslim to be elected to Congress, was brought to tears at a tense House hearing Thursday on radicalization among Muslim Americans, setting the tone for the panel's Democrats, who protested that the hearings were being held. [Full Story](#)

Twin Towers Photo on Display During King Hearings

A striking image of the Twin Towers burning down was a backdrop Thursday to Homeland Security Chairman Peter King's hearing on the radicalization of Islam. [Full Story](#)

Former DCCC Press Aide Lands at Consulting Firm

Ryan Rudominer, who was national press secretary at the Democratic Congressional Campaign Committee during the 2010 campaign cycle, has joined Democratic consulting firm New Partners. [Full Story](#)

George Allen Hires Trusted Aide to Manage Campaign

Former Sen. George Allen announced Thursday that he has hired longtime former aide Mike Thomas to manage his comeback campaign in Virginia. [Full Story](#)

Kaine to Keep Ambitions Secret This Weekend

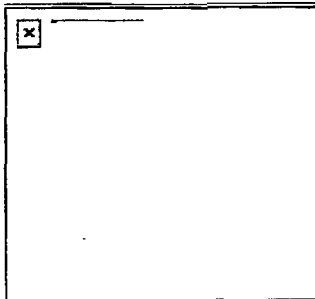
Officials says not to expect any news from DNC chairman at Rick Boucher dinner. [Full Story](#)

Romney Gives Big Bucks to Freshmen, Rehberg

2012 hopeful opens his wallet. [Full Story](#)

Republican Joining N.M. Senate Primary

New Mexico Lt. Gov. John Sanchez is poised to join former Rep. Heather Wilson in the Republican primary for the Land of Enchantment's open Senate seat, according to GOP sources. The move sets up the likelihood of heated GOP primary that could test the loyalties of newly elected Gov. Susana Martinez (R). [Full Story](#)



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Sent: Friday, March 11, 2011 10:15 AM
To: Ash, Darren; Bell, Hubert; Borchardt, Bill; Boyce, Thomas (OIS); Brenner, Eliot; Burns, Stephen; Collins, Elmo; Dean, Bill; Doane, Margaret; Dyer, Jim; Greene, Kathryn; Haney, Catherine; Howard, Patrick; Johnson, Michael; Kelley, Corenthis; Landau, Mindy; Leeds, Eric; Mallett, Bruce; Mamish, Nader; McCrary, Cheryl; McDermott, Brian; Miller, Charles; Reyes, Luis; Satorius, Mark; Schmidt, Rebecca; Sheron, Brian; Vietti-Cook, Annette; Virgilio, Martin; Weber, Michael; Wiggins, Jim; Zimmerman, Roy
Cc: McDermott, Brian; Miller, Chris; Thaggard, Mark; Anderson, Joseph; Williams, Kevin; Kahler, Robert; Morris, Scott; Evans, Michele; Kahler, Carolyn; Bower, Anthony; Barker, Allan; Logaras, Harral; Maier, Bill; McNamara, Nancy; Tiff, Doug; Trojanowski, Robert; Woodruff, Gena
Subject: NSIR/DPR Newsletter for Internal Distribution
Attachments: 2011.VolIII.Issue2.EPRNews.pdf

Attached, for your information, please see the March 2011 issue of NSIR/DPR's "Emergency Preparedness & Response News". At this time, it is for internal distribution only. Please do not forward to external stakeholders.

This issue of the newsletter will be sent to external stakeholders on Monday, March 21st.

Please contact me or Tony Bowers (301-415-5313, Anthony.bower@nrc.gov) with any questions.

-Sara

Sara K. Mroz

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“CIMS” City: Improving Crisis Communication in the Emergency Response Community

Crisis Information Management Software (CIMS) is used by many Federal, State, and local emergency responders to record, manage, and share real-time information during emergencies. Many types of CIMS platforms exist, including WebEOC, OpsCenter, and CRISIS™. The NRC Headquarters Operations Center and Regional Incident Response Centers use a CIMS platform. Use of CIMS has improved NRC emergency response organization (ERO) communications, allowing fast sharing of up-to-date and accurate information, such as recent licensee events or potential problems, throughout its response facilities. This information sharing facilitates rapid decision making by ERO members. Implementing a

CIMS platform in NRC response facilities has improved the effectiveness of the agency's response capabilities.

The NRC recently acquired technology to link CIMS platforms being used by licensees, Federal, State, local and tribal governments with the NRC's CIMS at Headquarters and in the Regions. Organizations that would like to connect with the NRC over this CIMS link would incur no expense. Together, the NRC and participating organizations will identify the type of information to be shared and connectivity details. Interested organizations should contact: Rebecca Stone at 301-415-5634 or via email at Rebecca.Stone@nrc.gov.

Radiological Risk Communication

Two new reference documents were recently published by the NRC to help with the development of risk communication plans and messaging during a radiological emergency. Both of these documents are publicly available and can be found in the NRC's Agencywide Documents Access and Management System. ML110490119 is the accession number for NUREG/CR-7032, "Developing an Emergency Risk Communication (ERC) / Joint Information Center (JIC) Plan for a Radiological Emergency." ML110490120 is the accession number for NUREG/CR-7033, "Guidance on Developing Effective Radiological Risk Communication Messages: Effective Message Mapping and Risk Communication with the Public in Nuclear Plant Emergency Planning Zones."

Editor:

Anthony Bowers

Special Contributors

to this Issue:

Arion Costa

Patricia Milligan

Sara Mroz

Milt Murray

Eric Schrader

Rebecca Stone

2011 Biennial EP Exercises with NRC Participation - Look Ahead

Exercise Date	Licensee	Exercise Type	Participants
4/12 - 4/14/2011	San Onofre	Plume / Ingestion Exposure	NRC Region IV, Licensee, State (CA)
4/20/2011	Quad Cities	Plume Exposure Pathway	NRC Region III, Licensee, State (IL)
4/26/2011	Harris	Plume Exposure Pathway	NRC Region II, Licensee, State (NC)
5/03 - 5/04/2011	Vermont Yankee	Plume / Ingestion Exposure Pathway	NRC Region I, Licensee, States (VT, NH, MA)
5/16/2011	Multiple	National Level Exercise	NRC HQ, All Regions, Multiple



Management Changes Announced in Division of Preparedness and Response

The Division of Preparedness and Response welcomes new Deputy Director for Emergency Preparedness, Mark Thaggard. Mr. Thaggard joins NSIR from the Office of Federal and State Materials and Environmental Management Programs, where he has served as the Deputy Director of the Division of Intergovernmental Liaison and Rulemaking since 2008.

Mr. Thaggard succeeds Christopher Miller. Mr. Miller will be moving to

Region I where he will serve as Director of the Division of Reactor Safety. Mr. Miller will assume his new position in Region I in April.



Mark Thaggard



Chris Miller

Enhancements to Emergency Preparedness - Rulemaking Update

Progress is continuing on the emergency preparedness (EP) rulemaking effort. On January 14, 2011, the draft final rule and related regulatory guidance documents were presented to the Advisory Committee on Reactor Safeguards (ACRS). In a letter dated January 24, 2011, the ACRS provided the results of their review with focus on two of the rulemaking topics: Performance-based Emergency Operations Facility and Evacuation Time Estimates.

Full text of the ACRS letter can be found in the Agency-wide Documents Access and Management System (ADAMS), using Accession Number ML110170008.

NRC and Federal Emergency Management Agency (FEMA) staff have been conducting informational meetings across the nation with State and local government stakeholders to keep them informed of current rulemaking related activities. Additionally, the NRC and FEMA held two public meet-

ings in Arlington, TX on January 25, 2011 and Saratoga Springs, NY on February 1, 2011 to gain insights on the design and scheduling of the implementation workshops that will be conducted shortly after the rule is issued in the Federal Register. Valuable feedback was received during these meetings that will aid in the NRC and FEMA objectives of providing the most benefit to stakeholders from the workshop.

Next Steps: The final EP rule package is scheduled to be submitted to the NRC's Executive Director for Operations in late March 2011. The final rule package will then be submitted to the Commission for approval. Upon approval, the rule will be published in the Federal Register. Following publication, the NRC and FEMA will offer a series of workshops to discuss implementation of the final EP rule and guidance.

Tomorrow's Nuclear Today: Small Modular Reactors

The NRC staff continues to prepare to review small modular reactor (SMR) designs. There have been several public meetings to engage stakeholders such as the Department of Energy, National Laboratories, SMR designers, and the Nuclear Energy Institute. These meetings assist NRC staff in identifying potential policy, regulatory, and technical issues related to existing emergency planning and preparedness requirements. Through these meetings, several issues related to EP were identified such as the impact of modularity on EP response, smaller source term dose consequences, EP plans for co-located sites, size of emergency planning zones (EPZs), and emergency response organization staffing. Potential EP issues associated with SMRs are generally described in Commission Paper SECY-10-0034, "Potential Policy, Licensing, and Key Technical Issues for Small Modular Nuclear Reactor Designs". SECY-10-0034 is available in the Agencywide Documents Access and Management System (ADAMS), Accession Number ML093290245. The NRC staff is currently developing an informational Commission paper describing a framework for establishing a graded approach to EP, which includes determining EPZ sizes for SMRs. For more information on SMRs, visit <http://www.nrc.gov/reactors/advanced.html>.

Upcoming Events of Interest to the EP Community

21st Annual National
Radiological Emergency
Preparedness Conference

April 18-21, 2011
Rosen Plaza Hotel
Orlando, FL

NRC Joins the Blogosphere

In January 2011, the NRC launched a new blog. The blog provides an interactive forum for communication between the NRC and the public. Blog posts will cover a variety of topics related to the NRC's activities, including emergency preparedness and incident response. Join the conversation at <http://public-blog.nrc-gateway.gov/>.



From: Quesenberry, Jeannette
Sent: Friday, March 11, 2011 12:58 PM
To: Schmidt, Rebecca
Subject: FW: Oversight Here's my list,
Attachments: Oversight

From: Parker, Nicole
Sent: Friday, March 11, 2011 2:21 PM
To: Powell, Amy; Kokajko, Lawrence; Davis, Jack; Schmidt, Rebecca; Stablein, King; Kotra, Janet; Haney, Catherine; Dorman, Dan; Brenner, Eliot
Cc: Valencia, Jennifer; Chidichimo, Gabriele; Benney, Brian
Subject: RE: Updated Final Version of Redacted Memos

The documents you just received will now go public.

Thanks

Nicole Parker

From: Parker, Nicole
Sent: Friday, March 11, 2011 2:14 PM
To: Powell, Amy; Kokajko, Lawrence; Davis, Jack; Schmidt, Rebecca; Stablein, King; Kotra, Janet; Haney, Catherine; Dorman, Dan; Brenner, Eliot
Cc: Valencia, Jennifer; Chidichimo, Gabriele; Benney, Brian
Subject: Updated Final Version of Redacted Memos

Good Afternoon

We made a slight change to the documents in the header and footers we made a slash through the Official Use Only Sensitive Internal Use Only.

Thanks

From: OPA Resource
Sent: Friday, March 11, 2011 3:42 PM
To: Ash, Darren; Barkley, Richard; Batkin, Joshua; Bell, Hubert; Belmore, Nancy; Bergman, Thomas; Bollwerk, Paul; Bonaccorso, Amy; Borchardt, Bill; Bozin, Sunny; Brenner, Eliot; Brock, Terry; Brown, Boris; Bubar, Patrice; Burnell, Scott; Burns, Stephen; Carpenter, Cynthia; Chandrathil, Prema; Clark, Theresa; Collins, Elmo; Couret, Ivonne; Crawford, Carrie; Cutler, Iris; Dacus, Eugene; Dapas, Marc; Davis, Roger; Dean, Bill; Decker, David; Dricks, Victor; Droggitis, Spiros; Flory, Shirley; Franovich, Mike; Gibbs, Catina; Haney, Catherine; Hannah, Roger; Harbuck, Craig; Harrington, Holly; Hasan, Nasreen; Hayden, Elizabeth; Holahan, Gary; Holahan, Patricia; Holian, Brian; Jacobssen, Patricia; Jaczko, Gregory; Jasinski, Robert; Jenkins, Verlyn; Johnson, Michael; Jones, Andrea; Kock, Andrea; Kotzalas, Margie; Ledford, Joey; Lee, Samson; Leeds, Eric; Lepre, Janet; Lew, David; Lewis, Antoinette; Loyd, Susan; Magwood, William; McCrary, Cheryl; McGrady-Finneran, Patricia; McIntyre, David; Mensah, Tanya; Mitlyng, Viktoria; Monninger, John; Montes, David; Nieh, Ho; Ordaz, Vonna; Ostendorff, William; Owen, Lucy; Powell, Amy; Quesenberry, Jeannette; Reddick, Darani; Regan, Christopher; Reyes, Luis; Riddick, Nicole; RidsSecyMailCenter Resource; Riley (OCA), Timothy; Rohrer, Shirley; Samuel, Olive; Satorius, Mark; Schaaf, Robert; Schmidt, Rebecca; Scott, Catherine; Screnci, Diane; Shaffer, Vered; Shane, Raeann; Sharkey, Jeffry; Sheehan, Neil; Sheron, Brian; Siurano-Perez, Osiris; Steger (Tucci), Christine; Svinicki, Kristine; Tabatabai, Omid; Tannenbaum, Anita; Taylor, Renee; Temp, WDM; Thomas, Ann; Uhle, Jennifer; Uselding, Lara; Vietti-Cook, Annette; Virgilio, Martin; Virgilio, Rosetta; Walker-Smith, Antoinette; Weaver, Doug; Weber, Michael; Weil, Jenny; Werner, Greg; Wiggins, Jim; Williams, Evelyn; Zimmerman, Roy; Zorn, Jason
Subject: Speech: "The First Year...." NRC Commissioner George Apostolakis, 23rd Annual Regulatory Information Conference, March 9, 2011
Attachments: s-11-009.docx

Office of Public Affairs
US Nuclear Regulatory Commission
301-415-8200
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NRC NEWS

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Blog: <http://public-blog.nrc-gateway.gov>

No. S-11-009

The First Year...

Dr. George Apostolakis

Commissioner

U.S. Nuclear Regulatory Commission

23rd Annual Regulatory Information Conference

March 9, 2011

It is a pleasure to be participating with all of you in my first Regulatory Information Conference as a Commissioner of the NRC. First, I'd like to recognize the NRC management and staff efforts in the planning and execution of another outstanding Conference.

During my first year as a Commissioner, I have been in a learning mode. I have had the opportunity to visit some reactor and materials facilities and to speak with diverse stakeholders and interested observers in various settings, including many Commission briefings that involved both NRC staff and external stakeholders. I would also like to acknowledge how wise Congress' decision to establish a five-member Commission was. I always find the perspectives of my fellow Commissioners on policy matters thoughtful and interesting.

I would like to use this first opportunity to provide a sketch of my background so you can understand the views that I bring to this assignment, and to list some of the areas that are of interest to me. With that, I want you to know that my focus is the same as that of the Commission, namely, ensuring the safety and security of all our licensed activities, including operating reactors, fuel facilities, waste disposal, and the use of radioactive materials.

Before joining the NRC, I was a professor of Nuclear Science and Engineering and a professor of Engineering Systems at the Massachusetts Institute of Technology. My primary research interests were in the development of models for the assessment of risks from large technological systems with a focus on nuclear power reactors. I was also a member, and former chairman, of the NRC's Advisory Committee on Reactor Safeguards (ACRS) for over 15 years. My tenure with the ACRS has been invaluable in allowing me to step right into my role as a Commissioner since I had a decade and a half to become familiar with many of the issues the agency has faced in the past, is facing now, and is sure to face in the future. Of course, the roles of the ACRS and the Commission are very different. I now have to make actual decisions as opposed to providing advice. In addition, I am no longer allowed to interrupt speakers who come before me, thus depriving me of one of the great pleasures of being an ACRS member.

In my opinion, the NRC is the preeminent contributor to protection of public health and safety among organizations external to licensees. We must continue to ensure that the public has confidence in the strong and predictable regulatory safety and security framework of the Commission. In this regard, I note that we were given recently a new point of reference. On January 18, 2011, President Obama issued an executive order on Improving Regulation and Regulatory Review. According to this executive order, the *General Principles of Regulation* include the following:

Our regulatory system must protect public health, welfare, safety, and our environment while promoting economic growth, innovation, competitiveness, and job creation.... It must allow for public participation and an open exchange of ideas. It must promote predictability and reduce uncertainty. It must identify and use the best, most innovative and least burdensome tools for achieving regulatory ends.

To the extent feasible, specify performance objectives, rather than specifying the behavior or manner of compliance that regulated entities must adopt.

Although the NRC, as an independent agency, is not subject to this executive order, I am very pleased to say that our agency has been moving its regulations in the direction of some key aspects of these principles for quite some time now. For instance, we are striving to establish performance-based regulations to the extent possible and to increase our efficiency by utilizing risk insights, as appropriate. Regarding President Obama's call for "least burdensome tools," I note that the Commission stated, way back in its 1995 Policy Statement on the use of Probabilistic Risk Assessment (PRA), that PRA should be used to reduce unnecessary conservatism associated with current regulatory requirements.

Two success stories that exemplify the benefits of using risk insights are the Reactor Oversight Process (ROP) and the risk-informed In-Service Inspection (ISI) of piping. The ROP has allowed us to respond to inspection findings in a way that is commensurate to the risk significance of these findings. It has also gone a long way toward promoting predictability in the regulatory system. The risk-informed ISI has allowed both the NRC and the licensees to focus the inspections on piping segments that are susceptible to degradation mechanisms and are risk significant, thus improving safety and reducing licensee regulatory burden.

You probably have noticed that my two examples are from the reactor arena. This is because that's where most progress has been made. I would like to recognize that the agency has also made progress in the use of risk insights in its regulation of the use of radioactive materials.

In my opinion, all areas under NRC jurisdiction would benefit from greater use of risk insights. I do acknowledge, however, that the application of the methods we have developed for reactors and waste repositories to other NRC activities is not straightforward. This is particularly true for security where events do not necessarily happen because of some random phenomena but, instead, because of the deliberate actions of an adversary. In this regard, I suggest that, instead of trying to transfer risk methods that have been developed for reactors to security, we should go back to the fundamental questions that analysts ask when performing risk assessments: What can go wrong? What are its consequences? How likely is it? Starting with fundamentals is always a good idea when dealing with a new situation.

Now, I would like to share my thoughts on a few specific areas of interest.

The Commission has a long-standing policy of encouraging the increased use of risk information in regulatory programs and processes, to the extent supported by state-of-the-art methods and data and in a manner that complements the NRC's traditional approaches that are based on the defense-in-depth principle and large safety margins.

However, even for reactors, the use of risk information has not yet been fully integrated into the reactor licensing process. Although 10 CFR 52 (the part of the regulations that governs the issuance of early site permits, standard design certifications, and combined licenses for new reactors) requires an applicant to submit a PRA summary, current review programs and guidance are still based on 10 CFR 50 (the traditional way of licensing) and do not fully realize the potential benefits of risk informing the licensing reviews. As a consequence, I believe that the agency faces some special challenges and opportunities as it prepares to receive in the near future applications for design certification of small modular reactors (SMRs). An important question which many are asking is whether the licensing review of such reactors should be the same as that for large reactors.

In July 2010, the Chairman and I proposed to our fellow Commissioners, and they agreed, to direct the staff to provide the Commission with a policy paper that addresses the development of a framework, implementation strategy, and plans and schedules to more fully integrate the use of risk insights into pre-application activities and in the review of small modular reactor applications. Staff was also directed to focus its initial effort on how risk insights would be used to identify risk-significant systems, structures, and components (SSCs) and other aspects of the design that contribute most to safety. Near-term efforts would be focused on integral pressurized water reactor designs. In my view, the results of these efforts should allow the NRC staff to be better prepared to conduct more safety focused and efficient reviews of SMR applications and, thus, be better able to respond in a timely manner to licensing requests.

A long-term objective of this initiative is to develop a risk-informed performance-based regulatory framework building on the SMR reviews, as well as on insights gained from the Next Generation Nuclear Plant pre-application review activities and the lessons learned from the earlier Technology Neutral Framework.

The staff provided its paper to the Commission recently for review and decision. A public Commission meeting on this matter has been scheduled for March 29.

Let me now offer some further thoughts on how risk insights may inform our regulations. There have been numerous PRAs completed for the current generation of Light Water Reactors (LWRs) both in the United State and internationally. I believe it is fair to say that this wealth of knowledge combined with several decades of operating experience has given us a very good understanding of what the likely accident sequences are for LWRs.

The analysis of these potential accident sequences in a PRA is as realistic as possible and, of course, includes the possibility that plant operators may intervene and act correctly or incorrectly. However, as I said earlier, this wealth of information has not been integrated in our regulations to a significant extent. The stylized Design Basis Accidents (DBAs) continue to reign supreme. There are

signs, nonetheless, that important issues may not be resolved optimally within the confines of traditional design-basis analyses with their numerous conservative assumptions. An example is Generic Safety Issue (GSI) 191 (“Assessment of Debris Accumulation on PWR Sump Performance”).

Following a Loss-of-Coolant Accident (LOCA), the emergency core cooling system (ECCS) is expected to cool the core by recirculating water that has settled at the bottom of the containment. This water, however, may contain debris that could clog the sump strainers that are designed to prevent debris from entering the ECCS system and the reactor core. This clogging could inhibit reactor core cooling.

The industry has argued that using a risk-informed approach would allow for a practical assessment of plant design features and operator actions that could reduce plant dependence on sump recirculation for long-term cooling through better water management, e.g., by refilling the refueling water storage tank and manually operating the containment spray system. A strict design-basis analysis does not allow the consideration of human actions. A question that arises, then, is whether we have sufficient understanding of operator actions to allow a risk-informed approach.

I acknowledge that many people are uncomfortable with the perceived large uncertainties associated with the probabilities of operator errors. However, the NRC has expended considerable resources developing guidance for the evaluation of operator actions. For example, we have published reports on “good practices” (NUREG-1792) and we have evaluated existing human reliability analysis (HRA) methods vs. these good practices (NUREG-1842). The NRC’s Office of Nuclear Regulatory Research and the industry are currently working on a consensus HRA method. The use of such a method would improve the validity, consistency, transparency and traceability of human error evaluations. Lessons learned from a series of experiments conducted at the Halden Reactor Project’s human performance simulation laboratory in Norway and an international effort on better understanding the strengths and limitations of the existing HRA methods are both inputs to the effort to develop a consensus HRA method. So, the question in my mind is, given that human performance is an integral part of nuclear power operations, why do we continue to ignore the products from these research activities in our regulatory decision making? Furthermore, without feedback from regulatory decision making, how do we know we are spending our HRA research resources in the most intelligent way?

In our efforts to risk-inform the regulations, we have introduced the critical concept of the transition break size (TBS), which divides pipe breaks into two intervals. The Commission has directed the staff to define the TBS as the pipe size that is expected to fail with a frequency of 10^{-5} per year. Breaks below the TBS are subject to the current requirements in 10 CFR 50.46 for the Emergency Core Cooling System (ECCS). Breaks above the TBS are subject to new requirements described in the proposed rule 10 CFR 50.46a. This voluntary proposed rule is of great significance in that it uses risk information and insights to revise the requirements associated with mitigating the stylized design basis double-ended guillotine break. A question, then, is where did the numerical value for the TBS come from?

The answer is that, because the frequency of failure of large pipes is very low, expert judgment was used to estimate LOCA frequencies. These frequencies provided the basis for selecting the TBS. And this leads me to another topic of interest to me: the utilization of expert judgment by the NRC.

The formal utilization of expert judgment in significant engineering issues has been pioneered by the NRC. It is a process that provides either (1) quantitative estimates for the frequency and/or significance of physical phenomena, or (2) qualitative insights into the nature, scope, and/or significance of physical phenomena. Expert judgment is used when the following conditions are present: the available data or operating experience is sparse or not directly applicable, the subject is too complex to model accurately, and the phenomena or issues have significant safety or regulatory implications.

Expert judgment has been a principal component of the technical basis for many important regulatory decisions, and its use is expected to be more prevalent in the future as issues become more complex and as technology evolves. There are many similarities but also significant differences in the approaches used in previous studies that can impact regulatory decision making

For example, a unique feature of the LOCA frequency study was the adjustment of results to account for the well-known overconfidence that is typically present in individual expert judgments. The study also recommended a less-common scheme for aggregating the individual expert results into group estimates. Sensitivity studies indicated that the selection of the aggregation scheme affected the results significantly. When the recommended, but less-common, aggregation scheme is used, the TBS for a pressurized water reactor is approximately 6 inches while aggregating using more-common methods leads to a TBS of approximately 11 inches. I believe that the NRC would benefit from formal guidance to assist the staff in choosing the method for obtaining and utilizing expert judgment to avoid the pitfalls of the past and ensure the appropriate level of effort. Selecting and documenting the appropriateness of the methods of analysis ahead of the regulatory decision should increase transparency, public confidence, and the objectivity of the results.

I would like to end this speech by telling you of an important recent initiative. Several weeks ago, the Chairman asked that I lead a Task Force for the Assessment of Options for a More Holistic Risk-Informed, Performance-Based Regulatory Approach. The Task Force is charged with developing a strategic vision, as well as options for pursuing such a regulatory approach for reactors, materials, waste, fuel cycle, security, and transportation that would continue to ensure the safe and secure use of nuclear material. The Task Force is to propose specific actions that the NRC could pursue to achieve a more comprehensive and holistic risk-informed, performance-based regulatory structure. The Task Force is expected to provide its recommendations within one year.

Realizing there were similar efforts in the past, I would like to offer my vision as to why we are pursuing this effort now and what outcomes we seek. As I said earlier, I believe the fundamental concept of risk analysis – what can go wrong, what are the consequences and how likely is it – is broadly applicable to all aspects of our regulatory functions. This set of risk triplets helps us to frame the information we need to make decisions systematically, transparently and in an integrated fashion.

A risk-informed approach is designed to focus the licensing and inspection efforts on the most risk-significant areas, thus increasing effectiveness and efficiency. With current projections for continuous flat budgets for the foreseeable future and the expected increase in the number of new reactor applications and licensing activities, I believe that the agency must adjust the way it does business. The agency must find a way to risk-inform its decision-making processes so that it can effectively prioritize its licensing reviews and inspections and focus its resources on areas of high risk significance.

If we were to predict what the nuclear industry may look like 20 to 30 years in the future, we can probably all agree that it may look very different than the way it does today. Consider the number of new reactor designs with passive safety features and digital instrumentation and controls, the small modular reactors, the aging issues associated with life beyond sixty years for the light water reactor fleet, the new fuel cycle facilities, and advances in the medical uses of nuclear materials, as well as changes in the security threats. With these likely changes in mind, we can easily conclude that the regulatory environment must change and adapt to ensure proper oversight and responsive licensing and inspection activities for adequate protection and regulatory enforcement. Our work on risk-informing the licensing reviews of SMRs is a good step in this direction.

Over the next 11 months, the Task Force will look candidly at where we have effectively and successfully transitioned to a risk-informed performance-based regulatory process and where we can and must do better. Armed with these insights, we will be able to provide options and formulate strategies for the next 10 or 15 years. Although I firmly believe there is always a role for probabilistic risk analysis, I am also prepared to accept the fact that, in some of our activities, there remains work to be done to make it practical. In fact, there may be instances where the explicit use and documentation of a probabilistic approach may just not be realistic for the foreseeable future.

Clearly, this effort could not be successful without meaningful stakeholder input. We plan to start within the agency and, at the appropriate time, solicit input from external stakeholders. Recognizing that the regulators and the regulated industry have different sets of considerations and different roles and responsibilities, external stakeholder input will help us in designing sound and effective long-term strategies. I believe the NRC and the stakeholders will agree that licensing reviews that align the review focus and resources to risk-significant areas and other aspects of the design that contribute most to safety will enhance the effectiveness and efficiency of the review process. The questions to which the Task Force will seek answers include the following:

1. Are the current practices adequate for accomplishing the goal of a holistic risk-informed and performance-based regulatory structure?
2. How effective have past and on-going risk-informed initiatives been? What are the relevant lessons learned from these initiatives?
3. Should the use of risk information continue to be voluntary?
4. How effective have recent major deterministic licensing actions (i.e., license renewals, power uprates, B5b mitigation strategies) been? What are the relevant lessons learned from these actions?
5. What are the visions for a holistic risk-informed, performance-based regulatory structure for reactors, materials, waste, fuel cycle, and security?
6. How can the transition from the current system to a more holistic risk-informed, performance based regulatory structure be optimized?
7. What is the schedule for achieving this regulatory structure?
8. How should this structure be implemented?
9. How should stakeholder input be considered?
10. In each area, what are the capabilities and limitations of current probabilistic risk assessment methodologies?

I have talked a lot about bringing more risk information into the agency's decision-making processes. I don't want to give you the impression that I do not appreciate the value of traditional approaches. The pioneers who developed nuclear power used the traditional engineering approach of requiring large safety margins and they established the philosophy of defense in depth to help manage uncertainty. I am fully aware of the value of defense in depth and safety margins in protecting us against unknown unknowns. I am also fully aware of the limitations of risk assessment. The challenge before us is how to develop a system that would increase the benefits of both approaches for managing uncertainty.

I appreciate your attention and I look forward to working with you during my time as a Commissioner. Thank you.

From: Powell, Amy
Sent: Friday, March 11, 2011 4:15 PM
To: Riley (OCA), Timothy
Cc: Decker, David; Schmidt, Rebecca
Subject: Contract protest
Attachments: ITISSOPAOCALANGUAGE.docx

Tim, FYI from OGC on the contract protest. I know that you had at least one staffer interested in that bid as it went through the process.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Baum, Robin
To: Brenner, Eliot; Schmidt, Rebecca; Powell, Amy; Decker, David
Cc: Boyce, Thomas (OIS); Maxin, Mark; Stewart, Sharon
Sent: Fri Mar 11 15:36:22 2011
Subject: OGC MESSAGE

All:

Electronic version of OGC approved language, should you receive outside inquiries about the GAO bid protest lodged against NRC's February 18, 2011, ITISS contract award.

Thank you –

Robin Baum
Deputy AsstGC/Special Counsel for Acquisition
Office of the General Counsel
(301) 415-1550
Robin.baum@nrc.gov

ITISS [Information Technology Infrastructure Services and Support]

On March 9, 2011, L-3 Stratis filed a protest with the Government Accountability Office against the U.S. Nuclear Regulatory Commission's award in February of a six-year, \$252 million contract for information technology infrastructure services and support, to Perot Systems Government Services, Inc., an indirect and wholly owned subsidiary of Dell, Inc. In response to the protest and as required by procurement laws, the NRC has stayed performance of the new contract pending resolution of the protest. The GAO issues protest decisions within 100 days, which means that a decision on the protest is expected no later than June 17, 2011.

From: dukefederalrelations=duke.edu@newsletter.duke.edu on behalf of Duke Federal Relations <dukefederalrelations@duke.edu>
Sent: Friday, March 11, 2011 5:27 PM
To: Schmidt, Rebecca
Subject: The Duke Digest - March 11, 2011: \$80M Gift to Rebuild Old Duke; Duke CFO Survey; Outlook Rosier; Duke Expert on Higher Gas Prices

Duke University
OFFICE OF FEDERAL RELATIONS

The Duke Digest - March 11, 2011

In Today's Issue:

- **\$80 Million Gift to Rebuild Historic Duke**
- **Duke CFO Survey: Outlook Rosier, But Inflation a Worry**
- **Duke Expert: Higher Gas Prices Incentive for Alternative Energy, Bad for Economy**

\$80 MILLION GIFT TO REBUILD HISTORIC DUKE

An \$80 million gift from The Duke Endowment of Charlotte, N.C., will transform Duke University's student union and renovate two other landmark facilities that benefit the Duke and Durham communities, Endowment chairman Neil Williams announced Monday.

The grant from The Duke Endowment is the largest single philanthropic gift in the university's history and in the Endowment's 87 years.

Read More:

[\\$80 Million Gift from Duke Endowment Will Remake Duke's Student Union, Other Landmark Facilities](#)
(DukeNews)

DUKE CFO SURVEY: OUTLOOK ROSIER, BUT INFLATION A WORRY

Chief financial officers in the U.S. have a more optimistic outlook about the economy, with robust growth expected in earnings and capital spending. Overall employment is expected to grow slowly, though some job categories are in strong demand. However, an uptick in inflation would pose notable risks for many firms.

These are some of the findings of the most recent Duke University/CFO Magazine Global Business Outlook Survey. The quarterly survey, which concluded March 3, asked 854 CFOs from a broad range of global public and private companies about their expectations for the economy.

Read More:

[CFO Survey: Outlook Rosier, But Inflation a Worry](#) (Fuqua.duke.edu)

OPINION: HIGHER GAS PRICES INCENTIVE FOR ALTERNATIVE ENERGY, BAD FOR ECONOMY

Thomas J. Nechyba, professor of Economics and Public Policy, says:

"In a long-run sense, higher gas prices would be good in that it would provide the incentives for innovation to alternative energy sources. In fact, most economists would favor substantial taxes on gasoline and oil-based fuel in general that would unleash market-based innovation that addresses the long-term environmental and energy challenges the country faces.

"In the short run, however, higher gasoline prices disproportionately impact the most vulnerable families and put in place obstacles to the fledgling economic recovery."

Read More:

[News Tip: Higher Gas Prices Incentive for Alternative Energy, Bad for Economy \(DukeNews\)](#)

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***For questions related to the Duke Digest, please contact Landy Elliott in the Office of Federal Relations: landy.elliott@duke.edu or (919)-602-6129

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From: Decker, David
Sent: Friday, March 11, 2011 5:46 PM
To: Powell, Amy; Schmidt, Rebecca
Subject: FW: Official Invitation to March 16,2011 Joint Subcommittee Hearing
Attachments: Form of Testimony.pdf; Electronic Guidelines.pdf; 3-16-11 Invitation- Gregory Jaczko.pdf; 112th Rules.pdf; 112th TNT instructions.pdf; 112th TNT form.pdf

Finally in from House Energy and Commerce.

From: Busbee, Allison [mailto:Allison.Busbee@mail.house.gov]
Sent: Friday, March 11, 2011 5:41 PM
To: Decker, David
Subject: Official Invitation to March 16,2011 Joint Subcommittee Hearing

Hi David,

Attached is the official invitation to Honorable Gregory B. Jaczko and instructions for the Subcommittee on Environment and the Economy and the Subcommittee on Energy and Power joint hearing scheduled for Wednesday, March 16, 2011 at 9:30 am in 2123 Rayburn House Office Building. The hearing is entitled "The FY2012 Department of Energy and Nuclear Regulatory Commission Budgets." Please read through the attached documents and contact me with any questions or concerns. Thank you.

Kind Regards,

Allison Busbee
Legislative Clerk
Energy & Commerce Committee
2125 Rayburn House Office Building
202-225-2927

RULES OF THE COMMITTEE ON ENERGY AND COMMERCE 112TH CONGRESS

RULE 1. GENERAL PROVISIONS

(a) Rules of the Committee. The Rules of the House are the rules of the Committee on Energy and Commerce (the "Committee") and its subcommittees so far as is applicable.

(b) Rules of the Subcommittees. Each subcommittee of the Committee is part of the Committee and is subject to the authority and direction of the Committee and to its rules so far as is applicable. Written rules adopted by the Committee, not inconsistent with the Rules of the House, shall be binding on each subcommittee of the Committee.

RULE 2. MEETINGS

(a) Regular Meeting Days. The Committee shall meet on the fourth Tuesday of each month at 10 a.m., for the consideration of bills, resolutions, and other business, if the House is in session on that day. If the House is not in session on that day and the Committee has not met during such month, the Committee shall meet at the earliest practicable opportunity when the House is again in session. The chairman of the Committee may, at his discretion, cancel, delay, or defer any meeting required under this section, after consultation with the ranking minority member.

(b) Additional Meetings. The chairman may call and convene, as he considers necessary, additional meetings of the Committee for the consideration of any bill or resolution pending before the Committee or for the conduct of other Committee business. The Committee shall meet for such purposes pursuant to that call of the chairman.

(c) Notice. The date, time, place, and subject matter of any meeting of the Committee scheduled on a Tuesday, Wednesday, or Thursday when the House will be in session shall be announced at least 36 hours (exclusive of Saturdays, Sundays, and legal holidays except when the House is in session on such days) in advance of the commencement of such meeting. The date, time, place, and subject matter of other meetings when the House is in session shall be announced to allow Members to have at least three days notice (exclusive of Saturdays, Sundays, and legal holidays except when the House is in session on such days) of such meeting. The date, time, place, and subject matter of all other meetings shall be announced at least 72 hours in advance of the commencement of such meeting.

(d) Agenda. The agenda for each Committee meeting, setting out all items of business to be considered, shall be provided to each member of the Committee at least 36 hours in advance of such meeting.

(e) Availability of Texts. No bill, recommendation, or other matter shall be considered by the Committee unless the text of the matter, together with an explanation, has been available to members of the Committee for three days (or 24 hours in the case of a substitute for introduced legislation). Such explanation shall include a summary of the major provisions of the legislation,

an explanation of the relationship of the matter to present law, and a summary of the need for the legislation.

(f) Waiver. The requirements of subsections (c), (d), and (e) may be waived by a majority of those present and voting (a majority being present) of the Committee or by the chairman with the concurrence of the ranking member, as the case may be.

RULE 3. HEARINGS

(a) Notice. The date, time, place, and subject matter of any hearing of the Committee shall be announced at least one week in advance of the commencement of such hearing, unless a determination is made in accordance with clause 2(g)(3) of Rule XI of the Rules of the House that there is good cause to begin the hearing sooner.

(b) Memorandum. Each member of the Committee shall be provided, except in the case of unusual circumstances, with a memorandum at least 48 hours before each hearing explaining (1) the purpose of the hearing and (2) the names of any witnesses.

(c) Witnesses. (1) Each witness who is to appear before the Committee shall file with the clerk of the Committee, at least two working days in advance of his or her appearance, sufficient copies, as determined by the chairman of the Committee of a written statement of his or her proposed testimony to provide to members and staff of the Committee, the news media, and the general public. Each witness shall, to the greatest extent practicable, also provide a copy of such written testimony in an electronic format prescribed by the chairman. Each witness shall limit his or her oral presentation to a brief summary of the argument. The chairman of the Committee or the presiding member may waive the requirements of this paragraph or any part thereof.

(2) To the greatest extent practicable, the written testimony of each witness appearing in a nongovernmental capacity shall include a curriculum vitae and a disclosure of the amount and source (by agency and program) of any federal grant (or subgrant thereof) or contract (or subcontract thereof) received during the current fiscal year or either of the two preceding fiscal years by the witness or by an entity represented by the witness.

(d) Questioning. (1) The right to interrogate the witnesses before the Committee shall alternate between majority and minority members. Each member shall be limited to 5 minutes in the interrogation of witnesses until such time as each member who so desires has had an opportunity to question witnesses. No member shall be recognized for a second period of 5 minutes to interrogate a witness until each member of the Committee present has been recognized once for that purpose. The chairman shall recognize in order of appearance members who were not present when the meeting was called to order after all members who were present when the meeting was called to order have been recognized in the order of seniority on the Committee.

(2) The chairman, with the concurrence of the ranking minority member, or the Committee by motion, may permit an equal number of majority and minority members to question a witness for a specified, total period that is equal for each side and not longer than thirty minutes for each side. The chairman with the concurrence of the ranking minority member, or the Committee by

motion, may also permit committee staff of the majority and minority to question a witness for a specified, total period that is equal for each side and not longer than thirty minutes for each side.

(3) Each member may submit to the chairman of the Committee additional questions for the record, to be answered by the witnesses who have appeared. Each member shall provide a copy of the questions in an electronic format to the clerk of the Committee no later than ten business days following a hearing. The chairman shall transmit all questions received from members of the Committee to the appropriate witness and include the transmittal letter and the responses from the witnesses in the hearing record.

RULE 4. VICE CHAIRMEN; PRESIDING MEMBER

The chairman shall designate a member of the majority party to serve as vice chairman of the Committee, and shall designate a majority member of each subcommittee to serve as vice chairman of each subcommittee, other than the Oversight and Investigations Subcommittee. The vice chairman of the Committee or subcommittee, as the case may be, shall preside at any meeting or hearing during the temporary absence of the chairman. If the chairman and vice chairman of the Committee or subcommittee are not present at any meeting or hearing, the ranking member of the majority party who is present shall preside at the meeting or hearing.

RULE 5. OPEN PROCEEDINGS

Except as provided by the Rules of the House, each meeting and hearing of the Committee for the transaction of business, including the markup of legislation, and each hearing, shall be open to the public, including to radio, television, and still photography coverage, consistent with the provisions of Rule XI of the Rules of the House.

RULE 6. QUORUM

Testimony may be taken and evidence received at any hearing at which there are present not fewer than two members of the Committee in question. A majority of the members of the Committee shall constitute a quorum for those actions for which the House Rules require a majority quorum. For the purposes of taking any other action, one-third of the members of the Committee shall constitute a quorum.

RULE 7. OFFICIAL COMMITTEE RECORDS

(a)(1) Journal. The proceedings of the Committee shall be recorded in a journal which shall, among other things, show those present at each meeting, and include a record of the vote on any question on which a record vote is demanded and a description of the amendment, motion, order, or other proposition voted. A copy of the journal shall be furnished to the ranking minority member.

(2) Record Votes. A record vote may be demanded by one-fifth of the members present or, in the apparent absence of a quorum, by any one member. No demand for a record vote shall be made or obtained except for the purpose of procuring a record vote or in the apparent absence of a

quorum. The result of each record vote in any meeting of the Committee shall be made publicly available in electronic form on the Committee's website and in the Committee office for inspection by the public, as provided in Rule XI, clause 2(e) of the Rules of the House, within 24 hours. Such result shall include a description of the amendment, motion, order, or other proposition, the name of each member voting for and each member voting against such amendment, motion, order, or proposition, and the names of those members of the committee present but not voting. The chairman, with the concurrence of the ranking minority member, may from time to time postpone record votes ordered on amendments to be held at a time certain during the consideration of legislation.

(b) **Archived Records.** The records of the Committee at the National Archives and Records Administration shall be made available for public use in accordance with Rule VII of the Rules of the House. The chairman shall notify the ranking minority member of any decision, pursuant to clause 3 (b)(3) or clause 4 (b) of the Rule, to withhold a record otherwise available, and the matter shall be presented to the Committee for a determination on the written request of any member of the Committee. The chairman shall consult with the ranking minority member on any communication from the Archivist of the United States or the Clerk of the House concerning the disposition of noncurrent records pursuant to clause 3(b) of the Rule.

RULE 8. SUBCOMMITTEES

(a) **Establishment.** There shall be such standing subcommittees with such jurisdiction and size as determined by the majority party caucus of the Committee. The jurisdiction, number, and size of the subcommittees shall be determined by the majority party caucus prior to the start of the process for establishing subcommittee chairmanships and assignments.

(b) **Powers and Duties.** Each subcommittee is authorized to meet, hold hearings, receive testimony, mark up legislation, and report to the Committee on all matters referred to it. Subcommittee chairmen shall set hearing and meeting dates only with the approval of the chairman of the Committee with a view toward assuring the availability of meeting rooms and avoiding simultaneous scheduling of Committee and subcommittee meetings or hearings whenever possible.

(c) **Ratio of Subcommittees.** The majority caucus of the Committee shall determine an appropriate ratio of majority to minority party members for each subcommittee and the chairman shall negotiate that ratio with the minority party, provided that the ratio of party members on each subcommittee shall be no less favorable to the majority than that of the full Committee, nor shall such ratio provide for a majority of less than two majority members.

(d) **Selection of Subcommittee Members.** Prior to any organizational meeting held by the Committee, the majority and minority caucuses shall select their respective members of the standing subcommittees.

(e) **Ex Officio Members.** The chairman and ranking minority member of the Committee shall be ex officio members with voting privileges of each subcommittee of which they are not assigned as members and may be counted for purposes of establishing a quorum in such subcommittees.

The minority chairman emeritus shall be an ex officio member without voting privileges of each subcommittee of which the minority chairman emeritus is not assigned as a member and shall not be counted for purposes of establishing a quorum on any such subcommittee.

RULE 9. OPENING STATEMENTS

(a) Written Statements. All written opening statements at hearings and business meetings conducted by the committee shall be made part of the permanent record.

(b) Length. (1) At full committee hearings, the chairman and ranking minority member shall be limited to 5 minutes each for an opening statement, and may designate another member to give an opening statement of not more than 5 minutes. At subcommittee hearings, the subcommittee chairman and ranking minority member of the subcommittee shall be limited to 5 minutes each for an opening statement. In addition, the full committee chairman and ranking minority member shall each be allocated 5 minutes for an opening statement for themselves or their designees.

(2) At any business meeting of the Committee, statements shall be limited to 5 minutes each for the chairman and ranking minority member (or their respective designee) of the Committee or subcommittee, as applicable, and 3 minutes each for all other members. The chairman may further limit opening statements for Members (including, at the discretion of the Chairman, the chairman and ranking minority member) to one minute.

RULE 10. REFERENCE OF LEGISLATION AND OTHER MATTERS

All legislation and other matters referred to the Committee shall be referred to the subcommittee of appropriate jurisdiction within two weeks of the date of receipt by the Committee unless action is taken by the full Committee within those two weeks, or by majority vote of the members of the Committee, consideration is to be by the full Committee. In the case of legislation or other matter within the jurisdiction of more than one subcommittee, the chairman of the Committee may, in his discretion, refer the matter simultaneously to two or more subcommittees for concurrent consideration, or may designate a subcommittee of primary jurisdiction and also refer the matter to one or more additional subcommittees for consideration in sequence (subject to appropriate time limitations), either on its initial referral or after the matter has been reported by the subcommittee of primary jurisdiction. Such authority shall include the authority to refer such legislation or matter to an ad hoc subcommittee appointed by the chairman, with the approval of the Committee, from the members of the subcommittees having legislative or oversight jurisdiction.

RULE 11. MANAGING LEGISLATION ON THE HOUSE FLOOR

The chairman, in his discretion, shall designate which member shall manage legislation reported by the Committee to the House.

RULE 12. COMMITTEE PROFESSIONAL AND CLERICAL STAFF APPOINTMENTS

(a) **Delegation of Staff.** Whenever the chairman of the Committee determines that any professional staff member appointed pursuant to the provisions of clause 9 of Rule X of the House of Representatives, who is assigned to such chairman and not to the ranking minority member, by reason of such professional staff member's expertise or qualifications will be of assistance to one or more subcommittees in carrying out their assigned responsibilities, he may delegate such member to such subcommittees for such purpose. A delegation of a member of the professional staff pursuant to this subsection shall be made after consultation with subcommittee chairmen and with the approval of the subcommittee chairman or chairmen involved.

(b) **Minority Professional Staff.** Professional staff members appointed pursuant to clause 9 of Rule X of the House of Representatives, who are assigned to the ranking minority member of the Committee and not to the chairman of the Committee, shall be assigned to such Committee business as the minority party members of the Committee consider advisable.

(c) **Additional Staff Appointments.** In addition to the professional staff appointed pursuant to clause 9 of Rule X of the House of Representatives, the chairman of the Committee shall be entitled to make such appointments to the professional and clerical staff of the Committee as may be provided within the budget approved for such purposes by the Committee. Such appointee shall be assigned to such business of the full Committee as the chairman of the Committee considers advisable.

(d) **Sufficient Staff.** The chairman shall ensure that sufficient staff is made available to each subcommittee to carry out its responsibilities under the rules of the Committee.

(e) **Fair Treatment of Minority Members in Appointment of Committee Staff.** The chairman shall ensure that the minority members of the Committee are treated fairly in appointment of Committee staff.

(f) **Contracts for Temporary or Intermittent Services.** Any contract for the temporary services or intermittent service of individual consultants or organizations to make studies or advise the Committee or its subcommittees with respect to any matter within their jurisdiction shall be deemed to have been approved by a majority of the members of the Committee if approved by the chairman and ranking minority member of the Committee. Such approval shall not be deemed to have been given if at least one-third of the members of the Committee request in writing that the Committee formally act on such a contract, if the request is made within 10 days after the latest date on which such chairman or chairmen, and such ranking minority member or members, approve such contract.

RULE 13. SUPERVISION, DUTIES OF STAFF

(a) **Supervision of Majority Staff.** The professional and clerical staff of the Committee not assigned to the minority shall be under the supervision and direction of the chairman who, in consultation with the chairmen of the subcommittees, shall establish and assign the duties and responsibilities of such staff members and delegate such authority as he determines appropriate.

(b) Supervision of Minority Staff. The professional and clerical staff assigned to the minority shall be under the supervision and direction of the minority members of the Committee, who may delegate such authority as they determine appropriate.

RULE 14. COMMITTEE BUDGET

(a) Administration of Committee Budget. The chairman of the Committee, in consultation with the ranking minority member, shall for the 112th Congress attempt to ensure that the Committee receives necessary amounts for professional and clerical staff, travel, investigations, equipment and miscellaneous expenses of the Committee and the subcommittees, which shall be adequate to fully discharge the Committee's responsibilities for legislation and oversight..

(b) Monthly Expenditures Report. Committee members shall be furnished a copy of each monthly report, prepared by the chairman for the Committee on House Administration, which shows expenditures made during the reporting period and cumulative for the year by the Committee and subcommittees, anticipated expenditures for the projected Committee program, and detailed information on travel.

RULE 15. BROADCASTING OF COMMITTEE HEARINGS

Any meeting or hearing that is open to the public may be covered in whole or in part by radio or television or still photography, subject to the requirements of clause 4 of Rule XI of the Rules of the House. The coverage of any hearing or other proceeding of the Committee or any subcommittee thereof by television, radio, or still photography shall be under the direct supervision of the chairman of the Committee, the subcommittee chairman, or other member of the Committee presiding at such hearing or other proceeding and may be terminated by such member in accordance with the Rules of the House.

RULE 16. SUBPOENAS

The chairman of the Committee may, after consultation with the ranking minority member, authorize and issue a subpoena under clause 2(m) of Rule XI of the House. If the ranking minority member objects to the proposed subpoena in writing, the matter shall be referred to the Committee for resolution. The chairman of the Committee may authorize and issue subpoenas without referring the matter to the Committee for resolution during any period for which the House has adjourned for a period in excess of 3 days when, in the opinion of the chairman, authorization and issuance of the subpoena is necessary. The chairman shall report to the members of the Committee on the authorization and issuance of a subpoena during the recess period as soon as practicable but in no event later than one week after service of such subpoena.

RULE 17. TRAVEL OF MEMBERS AND STAFF

(a) Approval of Travel. Consistent with the primary expense resolution and such additional expense resolutions as may have been approved, travel to be reimbursed from funds set aside for the Committee for any member or any staff member shall be paid only upon the prior

authorization of the chairman. Travel may be authorized by the chairman for any member and any staff member in connection with the attendance of hearings conducted by the Committee or any subcommittee thereof and meetings, conferences, and investigations which involve activities or subject matter under the general jurisdiction of the Committee. Before such authorization is given there shall be submitted to the chairman in writing the following: (1) the purpose of the travel; (2) the dates during which the travel is to be made and the date or dates of the event for which the travel is being made; (3) the location of the event for which the travel is to be made; and (4) the names of members and staff seeking authorization.

(b) Approval of Travel by Minority Members and Staff. In the case of travel by minority party members and minority party professional staff for the purpose set out in (a), the prior approval, not only of the chairman but also of the ranking minority member, shall be required. Such prior authorization shall be given by the chairman only upon the representation by the ranking minority member in writing setting forth those items enumerated in (1), (2), (3), and (4) of paragraph (a).

RULE 18. WEBSITE

The chairman shall maintain an official Committee website for the purposes of furthering the Committee's legislative and oversight responsibilities, including communicating information about the Committee's activities to Committee members and other members of the House. The ranking minority member may maintain an official website for the purpose of carrying out official responsibilities, including communicating information about the activities of the minority members of the Committee to Committee members and other members of the House.

RULE 19. CONFERENCES

The chairman of the Committee is directed to offer a motion under clause 1 of Rule XXII of the Rules of the House whenever the chairman considers it appropriate.

FRED UPTON, MICHIGAN
CHAIRMAN

HENRY A. WAXMAN, CALIFORNIA
RANKING MEMBER

ONE HUNDRED TWELFTH CONGRESS
Congress of the United States
House of Representatives
COMMITTEE ON ENERGY AND COMMERCE
2125 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515-6115

Majority (202) 225-2927
Minority (202) 225-3641

March 11, 2011

The Honorable Gregory B. Jaczko
Chairman
U.S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Dear Chairman Jaczko:

Thank you for agreeing to testify on Wednesday, March 16, 2011, at 9:30 a.m. in 2123 Rayburn House Office Building, at the Subcommittee on Environment and the Economy and the Subcommittee on Energy and Power joint hearing entitled "The FY2012 Department of Energy and Nuclear Regulatory Commission Budgets."

The attached documents provide important details concerning the preparation and presentation of your testimony.

- The first attachment describes the form your testimony must take.
- The second attachment provides you with Electronic Format Guidelines that detail how to file testimony electronically.
- The third attachment provides you the Rules for the Committee on Energy and Commerce.
- The fourth attachment provides you with a Truth-in-Testimony Disclosure form and a Truth-in-Testimony instruction sheet.

Please be aware that, in accordance with the Committee's usual practice, witnesses have a right to be represented by counsel, who may advise the witnesses on their Constitutional rights, but cannot testify.

Honorable Gregory B. Jaczko
Page 2

If you have any questions concerning any aspect of your testimony, please contact Garrett Golding of the Energy and Commerce Committee staff at (202) 225-2927.

Sincerely,



Ed Whitfield
Chairman
Subcommittee on
Energy and Power



John Shimkus
Chairman
Subcommittee on
Environment and the Economy

- Enclosures:
- (1) Form of Testimony
 - (2) Electronic Format Guidelines
 - (3) Rules for the Committee on Energy and Commerce
 - (4) Truth-in-Testimony Disclosure form

Committee on Energy and Commerce

U.S. House of Representatives

Witness Disclosure Requirement - "Truth in Testimony"

Required by House Rule XI, Clause 2(g)

1. Your Name:		
2. Are you testifying on behalf of the Federal, or a State or local government entity?	Yes	No
3. Are you testifying on behalf of an entity that is not a government entity?	Yes	No
4. Other than yourself, please list which entity or entities you are representing:		
5. Please list any Federal grants or contracts (including subgrants or subcontracts) that you or the entity you represent have received on or after October 1, 2008:		
6. If your answer to the question in item 3 in this form is "yes," please describe your position or representational capacity with the entity(ies) you are representing:		
7. If your answer to the question in item 3 is "yes," do any of the entities disclosed in item 4 have parent organizations, subsidiaries, or partnerships that you are not representing in your testimony?	Yes	No
8. If the answer to the question in item 3 is "yes," please list any Federal grants or contracts (including subgrants or subcontracts) that were received by the entities listed under the question in item 4 on or after October 1, 2008, that exceed 10 percent of the revenue of the entities in the year received, including the source and amount of each grant or contract to be listed:		

Signature: _____ Date: _____

INSTRUCTIONS FOR COMPLETING THE TRUTH-IN-TESTIMONY DISCLOSURE FORM

In General. The form on the reverse side of the page is intended to assist witnesses appearing before the Committee on Energy and Commerce in complying with Rule XI, clause 2(g) of the Rules of the House of Representatives. The rule requires that:

In the case of a witness appearing in a nongovernmental capacity, a written statement of proposed testimony shall include a curriculum vitae and a disclosure of the amount and source (by agency and program) of any Federal grant (or subgrant thereof) or contract (or subcontract thereof) received during the current fiscal year or either of the two previous fiscal years by the witness or by an entity represented by the witness.

Please complete the form in accordance with these directions.

1. ***Name (Item 1 on the form).*** Please provide the name of the witness in the box at the top of the form.
2. ***Governmental Entity (Item 2).*** Please check the box indicating whether or not the witness is testifying on behalf of a government entity, such as a Federal department or agency, or a State or local department, agency, or jurisdiction. Trade or professional associations of public officials are not considered to be governmental organizations.
3. ***Nongovernmental Entity (Item 3).*** Please check the box indicating whether or not the witness is testifying on behalf of an entity that is not a governmental entity.
4. ***Entity(ies) to be Represented (Item 4).*** Please list all entities on whose behalf the witness is testifying.
5. ***Grants and Contracts (Item 5).*** Please list any Federal grants or contracts (including subgrants or subcontracts) that the witness personally has received from the Federal Government on or after October 1, 2008.
6. ***Representational Capacity (Item 6).*** If the answer to the question in item 2 is yes, please characterize the capacity in which the witness is testifying on behalf of the entities listed in item 4.
7. ***Affiliated Entities (Item 7).*** Please indicate whether the entity on whose behalf the witness is testifying has parent organizations, subsidiaries, or partnerships that are not represented by the testimony of the witness.
8. ***Grants and Contracts (Item 8).*** Please disclose grants and contracts as directed in item 7.
9. ***Submission.*** Please sign and date the form in the appropriate place. Please submit this form with your written testimony. Please note that under the Committee's rules, copies of a written statement of your proposed testimony must be submitted before the commencement of the hearing. To the greatest extent practicable, please also provide a copy in electronic format according to the Electronic Format Guidelines that accompany these instructions.

The Form of Testimony before the Committee on Energy and Commerce

You are requested to submit a written statement, which may be of any reasonable length and may contain supplemental materials; however, please be aware that the Committee cannot guarantee that supplemental material will be included in the printed hearing record. Your written statement should be typed, double spaced, and should include a one-page summary of the major points you wish to make. You will have an opportunity to present an oral summary of your testimony to the Committee; to ensure sufficient time for Members to ask questions, your oral presentation should be limited to five minutes. Pursuant to Rule 3(c) of the Rules of the Committee, I am requesting you to provide 75 copies of your written statement no later than two business days in advance of your appearance. This will allow Members and staff the opportunity to review your testimony.

Due to security measures, you or your representative must deliver your advanced written testimony in person. Arrangements for delivery should be made in advance by contacting Allison Busbee, Legislative Clerk for the Committee, at (202) 226-2424. In accordance with the guidelines established by the Chief Administrative Officer of the House, however, no commercial carriers will be allowed access to the House Office Buildings.

Rule XI, clause 2(e)(1)(A) of the Rules of the House requires the Committee to keep a written record of committee hearings which is a substantially verbatim account of remarks made during the proceedings, subject only to technical, grammatical, and typographical corrections. Your testimony, the transcript of the hearing, and any other material that the Subcommittee agrees to include in the hearing record (subject to space limitations) will be printed as a record of the hearing.

Guidelines for the Electronic Submission of Congressional Testimony

The Rules of the House Energy and Commerce Committee require each witness, to the greatest extent practicable, to submit a copy of their testimony in an electronic format prescribed by the Chairman. Testimony submitted in electronic form will be used to produce the printed hearing record, and also may be converted to HTML or Adobe Portable Document Format (PDF) and posted to the Committee on Energy and Commerce website at <http://energycommerce.house.gov/>. Your compliance with this requirement will facilitate the distribution of your testimony and help the Committee to minimize the costs of printing the hearing record.

Materials submitted to the Committee must be formatted in **Microsoft Word, Word Perfect, or PDF**.

Please e-mail your testimony to the Legislative Clerk at Allison.Busbee@mail.house.gov. In addition, please include the following in the body of your e-mail: (1) Witness Name, (2) Witness Organization, (3) Name and Date of Hearing, and (4) Subcommittee of Jurisdiction.

The Committee cannot accept testimony submitted on a disk or flash drive.

From: Schmidt, Rebecca
Sent: Friday, March 11, 2011 9:15 PM
To: Batkin, Joshua
Subject: Re: Are you watching the game?

Now they are saying its his toe. Barely walked off the floor. The bench came to carry him off. He went to the locker room and is back on the bench. Kyrie is dressed and practiced before the game. Hasn't played though. Game is almost over

----- Original Message -----

From: Batkin, Joshua
To: Schmidt, Rebecca
Sent: Fri Mar 11 21:09:48 2011
Subject: Re: Are you watching the game?

What?!

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

----- Original Message -----

From: Schmidt, Rebecca
To: Batkin, Joshua
Sent: Fri Mar 11 20:59:25 2011
Subject: Are you watching the game?

OMG--smith is out with an ankle injury

From: Batkin, Joshua
Sent: Friday, March 11, 2011 9:49 PM
To: Schmidt, Rebecca; Powell, Amy; Dacus, Eugene
Subject: Mailing list

Can you please add Karen Wayland with Pelosi to your EQ info distro list? Karen.Wayland@mail.house.gov

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

From: Powell, Amy
Sent: Sunday, March 13, 2011 8:47 PM
To: Riley (OCA), Timothy
Cc: Schmidt, Rebecca
Subject: Re: Hearing updates requested

Thanks for letting me know. I cc'ed Becky for her awareness as well.

FYI to both of you, Sen Boxer canceled again. Trying for tomorrow am (which originally was not an option...)

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Riley (OCA), Timothy
To: Powell, Amy
Sent: Sun Mar 13 19:33:46 2011
Subject: Hearing updates requested

Amy,
Bill Borchardt is also asking for the planned testimony for Wednesday's hearing. Things are very slow here, so it seems there is interest in using available manpower here... I have replied that it's being worked on between OCA and Chairman's office.

No update to report (on this or anything else), just wanted to relay the request.

Tim

From: Schmidt, Rebecca
Sent: Sunday, March 13, 2011 12:18 PM
To: Powell, Amy
Subject: Gary's last name?

From: CQ Budget Tracker <budgettrackerlite-owner@cqrollcall.com>
Sent: Monday, March 14, 2011 7:07 AM
To: Schmidt, Rebecca
Subject: CQ BudgetTracker Newsletter

CQ BudgetTracker Plain Text Newsletter
March 14, 2011

The Road Gets Rougher

Negotiations to fund the government for the remainder of the fiscal year are expected to resume this week, while efforts to extend current stopgap funding must navigate several possible hurdles.

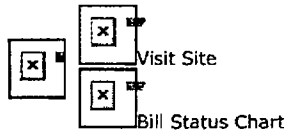
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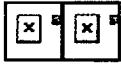
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Chuck Conlon, Editor, budget@cq.com



The Road Gets Rougher

Negotiations to fund the government for the remainder of the fiscal year are expected to resume this week, while efforts to extend current stopgap funding must navigate several possible hurdles.

Both Republican and Democratic leaders expect the new three-week extension of stopgap funding to clear by the end of the week, despite a growing desire by many GOP conservatives and outside groups to force a showdown now. Three conservative groups last week announced their opposition to the new CR ([H J Res 48](#)), saying they will include this week's votes on their annual voting scorecards. "A strategy of short-term extensions from now until the end of the fiscal year makes no sense," said Heritage Action's CEO Michael A. Needham in a joint statement. "If we blink now and allow the proponents of big government to drag out negotiations, it will undercut our ability to fight for conservative policies and result in fewer reforms and less cuts." The CR extension would cut \$6 billion in spending, but does not include any of the policy provisions added by House Republicans to their spending cut bill ([HR 1](#)), such as a ban on funding for Planned Parenthood. Republicans Steve King of Iowa and Minnesota's Michele Bachmann called on all House Republicans to oppose the new CR unless language is added to prevent funding of the health care overhaul.

[CQ Today Story](#)

Releases: [Conservative Groups' Joint Statement](#) | [King-Bachmann](#)

The bill will also face a challenge in the Senate, where Arizona Republican John McCain last week announced that he will seek to amend the measure to add a full-year Defense appropriations bill. That effort will likely be supported by many Republicans, and could slow down consideration of the CR extension in the Senate. The House plans to take up the bill on Tuesday, which would give the Senate the rest of the week to clear the measure. Current stopgap funding expires Friday night. Senate Democrats have already signaled that they will support the extension, with New York's Charles E. Schumer noting Sunday on NBC's "Meet the Press" that the measure was partly the product of negotiations between the White House, Senate



What's New



Print Issue



Updated 12:03 a.m., Monday 3/14

The Week Ahead

The House on Tuesday takes up a three-week extension of stopgap funding, which the Senate expects to clear before Friday night when the current CR expires. Meanwhile, House and Senate appropriators continue hearings on Obama's 2012 budget request.

Short-Term CR



The House on Tuesday takes up a three-week extension of government funding, which also cuts current spending by \$6 billion. [CQ](#)

[Today Story](#) | [Complete Bill Coverage](#)
[FY 2011 Spending / Cuts](#)



Behind-the-scenes negotiations are expected between the White House and congressional Republicans and Democrats. The parties remain more than \$50 billion apart on spending cuts for the current fiscal year. [CQ](#)

[Today Story](#) | [Complete Bill Coverage](#)

Democrats and House Republicans. The collaboration, he said, "gives me some cause for optimism" that an agreement can be reached on funding for the remainder of the fiscal year. The government has been operating on stopgap funding since the start of fiscal 2011 on Oct. 1.

The new extension continues the GOP strategy of cutting \$2 billion for every week stopgap funding must be extended, and would raise total cuts enacted to \$10 billion — \$1 billion more than cuts previously offered by Democrats. A Senate Democratic plan, which along with the House GOP plan was solidly rejected by the Senate last week, would have cut spending by \$8.7 billion compared with annualized total spending under the temporary funding measures enacted last year by the Democratic-majority Congress (which provided funding for almost all programs and activities at 2010 levels). The GOP plan ([HR 1](#)) would cut \$61.5 billion from that level, with the most recently enacted CR extension ([PL 112-4](#)) already making \$4 billion of those cuts. The additional \$6 billion in cuts in the new CR would come from reductions that are part of [HR 1](#), including rescissions of previously enacted spending, reducing accounts that had been earmarked in 2010, and cutting or eliminating programs that Obama proposed to cut in his fiscal 2012 budget.

[CO Weekly Story](#)

[Rogers Release & CR Summary](#) | [CR Text](#)

That GOP strategy keeps pressure on Democrats to reach a deal since Senate Democrats would otherwise be in the position of blocking a House GOP-passed CR extension and possibly being blamed for a government shutdown. With the "easy" spending cuts that most Democrats consider palatable quickly dwindling, Democrats say they want to negotiate a final deal — although both parties argue that after last week's Senate votes the other side must make an offer. President Obama in his press conference March 11 said "It shouldn't be that complicated," although he warned, "There are going to be certain things that House Republicans want that I will not accept," including cuts to Pell grants and Head Start and the inclusion of controversial policy riders. Democrats and Republicans are still more than \$50 billion apart on further spending cuts, and with conservative Republicans strongly supporting the House's policy riders, reaching a compromise that can pass both chambers remains a major challenge. "The action in the next week or two will occur behind the scenes," Schumer said yesterday.

[Obama Press Conference Transcript](#)

Releases & Statements: [Boehner](#) | [Reid](#) | [Cantor](#) | [Pelosi](#) | [Hoyer](#)

Senate Minority Leader Mitch McConnell said yesterday, "We're on a path, a slow path, but a path nevertheless, to get to the \$61 billion in

reductions of this year's spending that House Republicans were able to send over to us." Appearing on "Fox News Sunday," the Kentucky Republican said he wanted to complete action on current-year spending so policymakers could move on to other issues. "We've got lots bigger financial problems than just this year's budget. But we're working on this year at the moment," he said. The new CR will extend government funding through April 8, closer to when the administration estimates the Treasury Department will reach the \$14.3 trillion limit on federal borrowing — raising the chances that the fight over current-year spending will merge into the coming battle over raising the debt limit. Treasury has estimated the debt limit could be reached as early as April 15.

SENATE GOP STANDING WITH HOUSE ON DEBT LIMIT: Senate Minority Leader McConnell in recent days has reiterated that Senate Republicans, like House Republicans, won't vote to increase the statutory debt limit unless it is accompanied by major spending cuts or controls on spending.

"I don't intend to support raising the debt ceiling and I don't believe any Senate Republicans do, unless we do something important related to spending and debt," McConnell said on "Fox News Sunday." "Raising the debt ceiling is the perfect opportunity to do something important" about the causes of the nation's rising debt, McConnell argued, saying a debt limit increase is "going to have to carry something with it that the markets, foreign countries, the American people believe is a credible effort to begin to get a handle on spending and debt." McConnell wouldn't say specifically what he had in mind. "We all have a sense of how you could get at the problem. The administration understands that we understand it, and we need to come together and figure out what we can do and add it to the debt ceiling." McConnell in recent weeks has been hammering the White House about the need to begin addressing costly entitlement spending.

Fox News Sunday Transcript

A member of the Senate's "Gang of Six" expressed reservations about tying a major deficit reduction deal to congressional efforts to raise the debt limit. Virginia Democrat Mark Warner, appearing on "Fox News Sunday" with Georgia Republican Saxby Chambliss, said "I think we want to make sure we get it right more than some arbitrary timeline." The two senators, along with the two Democratic and two GOP senators who sat on the president's fiscal commission and voted for the panel's recommendations, are trying to prepare debt reduction legislation based on the fiscal commission's framework. Said Warner, "I get a little worried when you start tying it to the

debt limit vote, because as Chairman Ben Bernanke of the Federal Reserve said, if we play Russian roulette with that, with the instability in the financial markets, if we were to default on America's obligation to pay, you could up seeing back in the financial crisis the way we were in 2008." But Warner also argued that debt reduction legislation needs to be considered this year, saying nothing will get done in 2012 since it is a presidential election year. Chambliss argued that "it's imperative that we put everything on the table for discussion," including revenue increases, saying of an eventual comprehensive deal, it's "not a matter of is it going to get done. ... It's a question of whether we do it on our terms" before the market forces more difficult decisions.

CQ Weekly Cranford Column on Interest Rates

Before Congress gets to a debt limit vote, a vigorous debate will have already begun on the GOP's House budget resolution and its proposals to change major entitlement programs, possibly including Social Security. House GOP leaders are inching closer to proposing politically risky changes to Social Security in the fiscal 2012 budget resolution that will be unveiled in the coming weeks. Adding Social Security to the five-year spending framework, which is already expected to include a new path for Medicare and Medicaid, would represent an unprecedented attempt to deal with all three major entitlement programs at once. House Budget Chairman Paul D. Ryan, R-Wis., hasn't said just when he will release and mark up a draft budget; he is waiting for CBO to complete a re-estimate of President Obama's fiscal 2012 budget, expected in the next week or two, possibly as soon as the end of this week.

CQ Today Story

HOUSE APPROPRIATORS WEIGH AGRICULTURE FUNDING: The House Agriculture Appropriations Subcommittee last week examined several aspects of President Obama's fiscal 2012 budget proposal for the Agriculture Department.

Subcommittee Chairman Jack Kingston, R-Ga., on Thursday praised the administration's call to trim funding for the USDA's marketing and regulatory programs. Kingston described the proposed \$70 million, or 8 percent, discretionary cut for such programs as "music to everyone's ears." In his testimony, Edward Avalos, Agriculture's undersecretary for marketing and regulatory programs, said the request "supports the president's vision for a strong rural America . . . while conserving taxpayer dollars." Avalos noted that the budget proposal includes \$2.6 billion, of which \$980 million is discretionary, for USDA's marketing and regulatory programs, including the

Agricultural Marketing Service and the Grain Inspection, Packers and Stockyards Administration.

Kingston Opening Statement | Avalos Prepared Testimony

While Kingston was appreciative of the administration's plan to cut the USDA discretionary funding by 7 percent, he expressed concern about proposals to shift funding within various programs.

He cited several proposed decreases to programs such as avian flu monitoring and cattle and swine health, while noting significant proposed increases for biotech regulation and animal welfare programs. "The success of USDA as an agency is it does the dull normal and it does the dull normal very well," Kingston said. Avalos responded by noting that many of the programs Kingston highlighted were "very successful" and did not need continued funding at existing levels. On the other hand, Avalos pointed out that the Animal and Plant Health Inspection Service has experienced a large increase in permit requests for genetically-modified organisms, rising from four or five applications a year to more than 20, which he said spurred the president's request to boost APHIS funding by \$12 million, 90 percent more than the administration requested in fiscal 2011.

Rep. Sam Farr of California, the panel's top Democrat, expressed concern about GOP proposals to cut Agriculture Department funding for the current year. The House-passed measure (HR 1) to fund the government for the remainder of the fiscal year would provide only around \$15 billion in discretionary spending for USDA programs funded by the subcommittee, some \$5 billion less than current levels. "If we just take a meat axe and chop a lot of these programs we are going to kill the missing link that really helps get access to food," said Farr, arguing that the federal government fills the gap in areas where the private sector will not. Among other areas, HR 1 would cut USDA conservation, rural development, domestic and foreign food assistance programs. Farr also asked that the USDA continue to expand public-private partnerships that open new markets to American farmers and provide healthy foods for consumers.

Obama's budget for fiscal 2012 proposes \$18.8 billion in discretionary funding for USDA programs funded through the Agriculture spending bill — \$1.3 billion less than current spending (the Forest Service is funded through the Interior spending bill). While House appropriators did not focus last week's hearing on Obama's broader 2012 request for USDA, Agriculture Secretary Tom Vilsack defended the proposal before the subcommittee earlier this month. At that hearing, Kingston said that international food aid and the Conservation Reserve Program, which is popular with farm groups and environmentalists, should be scrutinized for savings as Congress assembles a

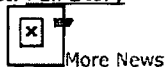
2012 budget.

[Vilsack Prepared Testimony](#) | [CO Hearing Transcript](#)

Adam Schank contributed to this report.

In Brief

- **Blended Funds Offer Flexibility, Risk for State Department Missions:** As a result of Congress' reluctance to fully fund State Department budget requests, the Obama administration is increasingly relying on new funding mechanisms for activities in Iraq and Afghanistan that would allow the State Department to draw on more than \$1 billion channeled through the Pentagon. [Full Story](#)
- **Kingston: Data Shows Expansion of FDA's Food Safety Efforts**
'Unwarranted': Thousands of people die and millions are sickened each year by food-borne illnesses the federal government could prevent if Congress provided the funding to implement provisions of a new food safety law, the head of the Food and Drug Administration told House appropriators March 11. [Full Story](#)
- **GOP Moves Bills to End Foreclosure Aid:** House Republicans last week advanced four separate pieces of legislation targeting federal home foreclosure assistance programs that the Obama administration has deemed critical to recovery of the housing market. [Full Story](#)



New bill information since Friday, Mar. 11

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From: Roll Call <rollcall@e.rollcall.com>
Sent: Monday, March 14, 2011 8:02 AM
To: Schmidt, Rebecca
Subject: Latest News From Roll Call Politics



Monday, Mar. 14, 2011

Politics



[Wolf Fight Draws Howls in Montana](#)



[RNC Chief Fights to Rebuild Fundraising Machine](#)



[Staffers Strike Gold in Campaign Seasons](#)



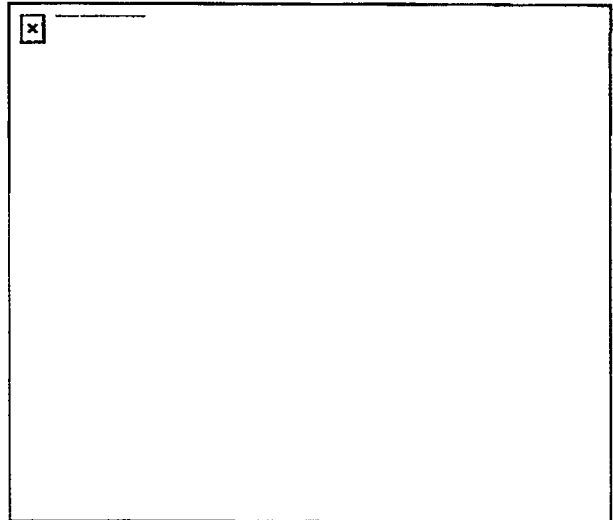
[Democrats Look to Twitter to Reverse Fortunes for 2012](#)



[Adviser to Possible Scott Brown Challenger Scouts for Staff](#)



[Sestak Ad Among Hundreds of Pollie Winners](#)



Wolf Fight Draws Howls in Montana

It doesn't matter whether any voters live in Kootenai or Lolo — western Montana's national forests are home to a fierce and breathing debate likely to play prominently in the state's 2012 Senate contest. [Full Story](#)

RNC Chief Fights to Rebuild Fundraising Machine

New Republican National Committee Chairman Reince Priebus is moving urgently to rebuild the committee into a fundraising powerhouse, trying to position the party to be able to withstand President Barack Obama's expected \$1 billion re-election campaign juggernaut. [Full Story](#)

Staffers Strike Gold in Campaign Seasons

House Majority Leader Eric Cantor may have campaigned on cutting spending, but a couple of his campaign staffers were among the highest-paid by campaigns, parties and political action committees during the 2010 election cycle. [Full Story](#)

Democrats Look to Twitter to Reverse Fortunes for 2012

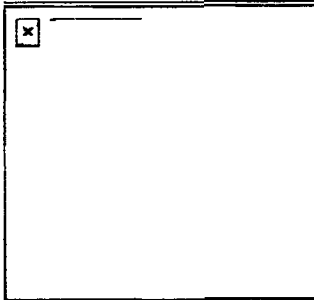
Democrats are hoping they've found a secret weapon for winning back the House in 2012: Twitter. [Full Story](#)

Adviser to Possible Scott Brown Challenger Scouts for Staff

A political consultant for Democratic Mayor Setti Warren of Newton, Mass., told a community newspaper over the weekend that the mayor will decide whether to challenge Sen. Scott Brown (R-Mass.) in the next month or two. [Full Story](#)

Sestak Ad Among Hundreds of Pollie Winners

The crushing TV ad that helped Democrat Joe Sestak win last year's Pennsylvania Senate primary also earned his media consulting firm one of hundreds of accolades handed out Friday at the 20th annual Pollie Awards — referred to as the "Oscars of political advertising." [Full Story](#)



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From: Belmore, Nancy
Sent: Monday, March 14, 2011 11:13 AM
To: Schmidt, Rebecca; Powell, Amy; Decker, David
Subject: FW: 11:00AM Hearing Prep Pushed to 11:30AM

Importance: High

Guess this got changed to today ??

Nancy Belmore
Office of Congressional Affairs
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nancy.belmore@nrc.gov
301-415-1776

From: Pace, Patti
Sent: Monday, March 14, 2011 10:48 AM
To: Schwarz, Sherry; Sprogeris, Patricia; Hudson, Sharon; Belmore, Nancy; Pulley, Deborah; Mayberry, Theresa; Quesenberry, Jeannette; Sosa, Belkys; Nieh, Ho; Blake, Kathleen; Herr, Linda; Garland, Stephanie; Cianci, Sandra
Cc: Dhir, Neha; Coggins, Angela; Batkin, Joshua; Gibbs, Catina; Speiser, Herald
Subject: 11:00AM Hearing Prep Pushed to 11:30AM
Importance: High

Good Morning,

The Hearing Prep Meeting scheduled for this morning at 11:00AM in the Chairman's conference room will be postponed to 11:30A due to a conflict on the Chairman's calendar. I will alert you right away if we need to further change or cancel this meeting, we may need to do so with little notice. Please keep an eye on email for updates. Also, please note that Eric Leeds and Mike Johnson will lead this briefing as Marty Virgilio is at the Ops center all day.

Thanks,

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: OPA Resource
Sent: Thursday, April 14, 2011 11:26 AM
To: Ash, Darren; Barkley, Richard; Batkin, Joshua; Bell, Hubert; Belmore, Nancy; Bergman, Thomas; Bollwerk, Paul; Bonaccorso, Amy; Borchardt, Bill; Bozin, Sunny; Brenner, Eliot; Brock, Terry; Brown, Boris; Bubar, Patrice; Burnell, Scott; Burns, Stephen; Carpenter, Cynthia; Chandrathil, Prema; Clark, Theresa; Collins, Elmo; Couret, Ivonne; Crawford, Carrie; Cutler, Iris; Dacus, Eugene; Dapas, Marc; Davis, Roger; Dean, Bill; Decker, David; Dricks, Victor; Droggitis, Spiros; Flory, Shirley; Franovich, Mike; Gibbs, Catina; Haney, Catherine; Hannah, Roger; Harbuck, Craig; Harrington, Holly; Hasan, Nasreen; Hayden, Elizabeth; Holahan, Gary; Holahan, Patricia; Holian, Brian; Jacobssen, Patricia; Jaczko, Gregory; Jasinski, Robert; Jenkins, Verlyn; Johnson, Michael; Jones, Andrea; Kock, Andrea; Kotzalas, Margie; Ledford, Joey; Lee, Samson; Leeds, Eric; Lepre, Janet; Lew, David; Lewis, Antoinette; Loyd, Susan; Magwood, William; McCrary, Cheryl; McGrady-Finneran, Patricia; McIntyre, David; Mensah, Tanya; Mitlyng, Viktoria; Monninger, John; Montes, David; Nieh, Ho; Ordaz, Vonna; Ostendorff, William; Owen, Lucy; Powell, Amy; Quesenberry, Jeannette; Reddick, Darani; Regan, Christopher; Reyes, Luis; Riddick, Nicole; RidsSecyMailCenter Resource; Riley (OCA), Timothy; Rohrer, Shirley; Samuel, Olive; Satorius, Mark; Schaaf, Robert; Schmidt, Rebecca; Scott, Catherine; Screnci, Diane; Shaffer, Vered; Shane, Raeann; Sharkey, Jeffrey; Sheehan, Neil; Sheron, Brian; Siurano-Perez, Osiris; Steger (Tucci), Christine; Svinicki, Kristine; Tabatabai, Omid; Tannenbaum, Anita; Taylor, Renee; Temp, WDM; Uhle, Jennifer; Uselding, Lara; Vietti-Cook, Annette; Virgilio, Martin; Virgilio, Rosetta; Walker-Smith, Antoinette; Weaver, Doug; Weber, Michael; Weil, Jenny; Werner, Greg; Wiggins, Jim; Williams, Evelyn; Zimmerman, Roy; Zorn, Jason
Subject: RII Press Release: NRC Schedules Meeting to Discuss 2010 Performance Assessment for Oconee Nuclear Power Plant
Attachments: 11-018.ii.docx

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No. II-11-018

April 14, 2011

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NRC SCHEDULES MEETING TO DISCUSS 2010 PERFORMANCE ASSESSMENT FOR OCONEE NUCLEAR POWER PLANT

The U.S. Nuclear Regulatory Commission staff has scheduled a meeting for Tuesday, April 19, to discuss the agency's assessment of safety performance during 2010 at the Oconee nuclear power plant. The plant, operated by Duke Energy, is near Seneca, S.C., about 30 miles west of Greenville, S.C.

The meeting, in the Oconee World of Energy, 7812 Rochester Highway in Seneca, will begin with a short presentation at 6:30 p.m., followed by an informal open house ending at 8 p.m.

NRC staff will be available to answer questions on the safety performance of the Oconee plant, as well as the NRC role in ensuring safe plant operation.

"The NRC evaluates nuclear power plants in a systemic and detailed way every year," said NRC Region II Administrator Victor McCree. "The inspections and oversight at Oconee ensure that the plant is operated in a way that protects people and the environment."

A letter sent from the NRC Region II office to plant officials addresses the performance of the plant during 2010 and will serve as the basis for the meeting discussion. It is available on the NRC web site at: www.nrc.gov/NRR/OVERSIGHT/ASSESS/LETTERS/oco_2010q4.pdf.

The NRC found that the Oconee plant met all NRC safety objectives during 2010, and performance for all three units was at a level that did not require any more than the detailed baseline NRC inspections. In addition, the agency will complete some generic inspections related to spent fuel storage and reactor coolant system maintenance. Operator licensing examinations will also be conducted. The NRC staff will also continue its review of ongoing significant modifications to the plant.

Current performance information for Oconee Unit 1 is available on the NRC web site at: www.nrc.gov/NRR/OVERSIGHT/ASSESS/OCO1/oco1_chart.html. Current information for Units 2 and 3 is at: www.nrc.gov/NRR/OVERSIGHT/ASSESS/OCO2/oco2_chart.html and www.nrc.gov/NRR/OVERSIGHT/ASSESS/OCO3/oco3_chart.html.

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Subject: RII Press Release: NRC Schedules Meeting to Discuss 2010 Performance Assessment for Vogtle Nuclear Power Plant
Attachments: 11-019.ii.docx

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April 14, 2011

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NRC SCHEDULES MEETING TO DISCUSS 2010 PERFORMANCE ASSESSMENT FOR VOGTLE NUCLEAR POWER PLANT

U.S. Nuclear Regulatory Commission officials have scheduled a meeting for Tuesday, April 19 to provide information on the agency's annual assessment of safety performance for the two operating units at the Vogtle nuclear power plant during 2010.

The meeting will begin with an open house at 6 p.m. followed by a brief presentation at 6:30 p.m. There will be a question and answer session after the presentation. The meeting will be held in the Burke County Public Library, 130 Ga. Highway 24 S. in Waynesboro, Ga.

The Vogtle plant, which has two pressurized-water reactors, is located near Waynesboro, about 26 miles southeast of Augusta. It is operated by Southern Nuclear Operating Co.

Overall, the NRC staff concluded that the Vogtle plant operated safely in 2010, and there were no inspection findings or performance indicators that would cause the NRC to increase its level of oversight and inspection. Based on the plant's performance, the NRC staff plans to continue the detailed routine or baseline inspections all nuclear power plants receive.

"The NRC evaluates nuclear power plants in a systemic and detailed way every year," said NRC Region II Administrator Victor McCree. "The inspections and oversight at Vogtle ensure that the plant is operated in a way that protects people and the environment."

The annual assessment letter for the Vogtle plant is available on the NRC web site at www.nrc.gov/NRR/OVERSIGHT/ASSESS/LETTERS/vog_2010q4.pdf.

Routine inspections are carried out by the NRC resident inspectors assigned to the plant and by inspection specialists from the Region II office in Atlanta. Among the areas at the Vogtle plant to be inspected this year by NRC specialists are facility modifications, managing gas accumulation in the plant's Emergency Core Cooling Systems, and operator licensing requalification.

Current performance information for Vogtle Unit 1 is available on the NRC web site at www.nrc.gov/NRR/OVERSIGHT/ASSESS/VOG1/vog1_chart.html. Current performance information for Vogtle Unit 2 is available on the NRC web site at www.nrc.gov/NRR/OVERSIGHT/ASSESS/VOG2/vog2_chart.html.

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No. II-11-020

April 14, 2011

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NRC SCHEDULES MEETING TO DISCUSS 2010 PERFORMANCE ASSESSMENT FOR HATCH NUCLEAR POWER PLANT

U.S. Nuclear Regulatory Commission officials have scheduled a meeting for Thursday, April 21 to provide information on the agency's annual assessment of safety performance for the Hatch nuclear power plant during 2010.

The NRC will host an open house at 6 p.m., followed at 6:30 p.m. by a presentation and question and answer session in the executive conference room of the Southeastern Technical College, 3001 East 1st St., in Vidalia. The open house and meeting provide an opportunity for the public to learn about the plant's performance last year as well as NRC oversight and inspection.

The Hatch plant, which has two boiling-water reactors, is located in south Georgia near Baxley, about 20 miles south of Vidalia. It is operated by Southern Nuclear Operating Co.

Overall, the NRC staff concluded that the Hatch plant operated safely in 2010 and will receive normal detailed baseline oversight and inspection efforts. Hatch Unit 2 was subject to increased oversight during the first three quarters of 2010, but was returned to normal oversight last October after a supplemental inspection found no significant issues.

"The NRC evaluates nuclear power plants in a systemic and detailed way every year," said NRC Region II Administrator Victor McCree. "The inspections and oversight at Hatch ensure that the plant is operated in a way that protects people and the environment."

The NRC uses color-coded inspection findings and performance indicators to assess plant performance. The colors start with "green," which has very low safety significance, to "white," "yellow" or "red," based on the significance of the issues. Inspection findings and performance indicators are updated on the NRC's web site (www.nrc.gov) each quarter.

The annual assessment letter for the Hatch plant is available on the NRC web site at www.nrc.gov/NRR/OVERSIGHT/ASSESS/LETTERS/hat_2010q4.pdf.

Routine inspections are carried out by the NRC resident inspectors assigned to the plant and by inspection specialists from the Region II office in Atlanta. Among the areas at the Hatch plant to be inspected this year by NRC specialists are component design basis, managing gas accumulation in the plant's emergency core cooling systems, and operator licensing examinations.

Current performance information for Hatch Unit 1 is available on the NRC web site at www.nrc.gov/NRR/OVERSIGHT/ASSESS/HAT1/hat1_chart.html. Current performance information for Hatch Unit 2 is available on the NRC web site at www.nrc.gov/NRR/OVERSIGHT/ASSESS/HAT2/hat2_chart.html.

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News releases are available through a free *listserv* subscription at the following Web address: <http://www.nrc.gov/public-involve/listserver.html>. The NRC homepage at www.nrc.gov also offers a SUBSCRIBE link. E-mail notifications are sent to subscribers when news releases are posted to NRC's website.

From: Decker, David
Sent: Monday, March 14, 2011 2:25 PM
To: Powell, Amy; Schmidt, Rebecca
Subject: FW: - Status of - NRC Testimony attached for OMB Clearance March 16
Attachments: NRC testimony.docx

This just in from OMB.

From: McDonald, Christine [mailto: (b)(6)]
Sent: Monday, March 14, 2011 2:22 PM
To: Golder, Jennifer
Cc: Dyer, Jim; Brown, Milton; Decker, David; Carroll, J. Kevin
Subject: RE: - Status of - NRC Testimony attached for OMB Clearance March 16

We are OK with this testimony. It parallels what is in your 2012 CJ.

CMcD

Christine McDonald
Office of Management and Budget, Energy Branch
(202) 395-6944

From: Golder, Jennifer [mailto:Jennifer.Golder@nrc.gov]
Sent: Monday, March 14, 2011 10:06 AM
To: McDonald, Christine
Cc: Dyer, Jim; Brown, Milton; Decker, David
Subject: - Status of - NRC Testimony attached for OMB Clearance March 16
Importance: High

Hi Christine,

Just left you a voice mail. Just checking in on status of clearance of our Testimony for the Wed hearing. Please let us know asap today – it is due to Congress by 5pm.

Thanks

Thanks so much

Jennifer Golder

STATEMENT
BY GREGORY B. JACZKO, CHAIRMAN
UNITED STATES NUCLEAR REGULATORY COMMISSION
TO THE
HOUSE COMMITTEE ON ENERGY AND COMMERCE
SUBCOMMITTEES ON ENERGY AND POWER, ENVIRONMENT AND THE ECONOMY
MARCH 16, 2011

Mr. Chairmen, Ranking Members Rush and Green, and Members of the Subcommittees, I am honored to appear before you today to discuss the Fiscal Year (FY) 2012 budget request for the U. S. Nuclear Regulatory Commission (NRC) and to respond to any questions that you may have. During the past few weeks, I've had an opportunity to meet with a number of you and your staff. I appreciate these conversations and your interest in the NRC's work. I look forward to working with all of you as this session of Congress continues.

The NRC is an independent Federal agency established to license and regulate the Nation's civilian use of byproduct, source, and special nuclear materials to ensure adequate protection of public health and safety, promote the common defense and security, and protect the environment. Our critical mission entails broad responsibilities for the agency. The NRC currently licenses, inspects, and assesses the performance of 104 operating nuclear power plants, as well as many fuel cycle facilities and research and test reactors. Furthermore, nuclear materials are in use at thousands of hospitals, universities, and other locations around the country. Each of these facilities and materials users presents different challenges for the NRC and requires that the NRC develop and sustain a diverse array of regulatory capabilities. The safety and security of these facilities and materials is, and always will be, our number one priority.

The NRC's Safety goal is to ensure adequate protection of public health and safety and the environment. The agency's safety program objectives are to prevent the occurrence of any nuclear reactor accidents, inadvertent criticality events, acute radiation exposures resulting in fatalities, significant releases of radioactive materials and significant adverse environmental impacts. The Security goal is to ensure adequate protection in the secure use and management of radioactive materials. The security program objective is to prevent any instances in which licensed radioactive materials are used in a hostile manner in the United States.

The NRC can be proud of its strong track record and our recognition by the international community as a leader in regulating the nuclear industry. The Commission cannot give enough credit for the NRC's effectiveness as a regulator to the NRC's diverse, hard-working, talented, and dedicated staff. The Commission is continually impressed by their expertise, experience, diversity, and commitment to public service.

It is important that the NRC maintain our commitment to continuous improvement. That has long been a defining value of the NRC and a key to our success in meeting our important safety mission. We have a responsibility to the public to always try to do better – whether by planning and prioritizing to allow for more timely implementation of agency actions by licensees, or by communicating more effectively to better engage stakeholders in agency decisions.

We also, however, have an additional imperative, in light of the prevailing budgetary climate and the strong desire by many to see federal agencies do more with less. No matter the outcomes of these current budget decisions, the agency must continue focusing on the critical task of how to make the most efficient use of our funds. The NRC must ensure that we are in

the strongest possible position to efficiently and effectively use our financial resources to meet our mission.

In this area, as in many others, good process is the key to good outcomes. In accordance with the Government Performance and Results Act, the NRC is taking steps to improve our strategic planning and annual performance plans in order to achieve greater alignment of goals and performance across the agency. As part of the NRC's efforts to build a Strategic Acquisition Program, we are taking steps to ensure agency contracting initiatives are implemented in a more timely and efficient manner. We have resources dedicated to other business process improvements including the Transforming Assets into Business Solutions (TABS), a task force focused on identifying the most efficient, effective and cost-conscious manner for the NRC to accomplish its corporate support functions.

These initiatives allow us to fully meet our safety and security responsibilities while also effectively reviewing applications associated with a renewed interest in the construction of new nuclear power plants and applications to construct and operate facilities that are part of the nuclear fuel cycle. The NRC is actively reviewing 12 combined applications to construct and operate new nuclear power reactors. Five different reactor designs are referenced in these applications; the NRC is currently reviewing the design applications for certification. If these design certifications are approved they will be available to be referenced in future COL applications, and thereby make those reviews more straightforward. The NRC is also performing safety, security, and environmental reviews of facility applications, a uranium deconversion facility application, and applications for new uranium recovery facilities.

With these efforts as a backdrop, the agency has formulated its FY 2012 budget to support the agency's Safety and Security strategic goals and objectives.

Specifics of the FY 2012 Budget Request

The NRC's FY 2012 budget request is organized by business lines within our two program areas: (1) Nuclear Reactor Safety, and (2) Nuclear Materials and Waste Safety Programs. The NRC's proposed FY 2012 budget for both programs is \$1,038.1 million, including 3,981.0 full-time equivalents (FTE), which represents a decrease of \$28.7 million, including an increase of 0.8 FTE, when compared to the FY 2010 funding levels. The funding levels reflected above also support the Office of the Inspector General (OIG). The OIG FY 2012 proposed budget of \$10.9 million includes resources to carry out the Inspector General's mission to independently and objectively conduct audits and investigations to ensure the efficiency and integrity of NRC programs and operations and to promote cost-effective management.

Pursuant to the provisions of the Energy Policy Act of 2005, the NRC's FY 2012 budget provides for 90 percent fee recovery, less (1) appropriations from the Nuclear Waste Fund, (2) appropriations to implement Section 3166 of the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005, (which pertain to waste incidental to reprocessing), and (3) appropriations to conduct generic homeland security activities. Accordingly, \$909.5 million of the FY 2012 budget would be recovered from fees assessed to NRC licensees and applicants. This would result in a net appropriation of \$128.6 million, which is a decrease of \$26.1 million in net appropriations when compared to the FY 2010 funding levels.

Nuclear Reactor Safety Program

The Nuclear Reactor Safety Program encompasses NRC efforts to license, regulate, and oversee civilian nuclear power, research, and test reactors in a manner that adequately protects public health and safety and the environment. This program also provides high assurance of the physical security of facilities and protection against radiological sabotage. This program contributes to the NRC's Safety and Security goals through the activities of the Operating Reactors and New Reactors Business Lines, which regulate existing and new nuclear reactors to ensure their safe operation and physical security. Overall resources requested in the FY 2012 budget for the Nuclear Reactor Safety Program are \$800.8 million, including 3,032.9 FTE. This funding level represents an overall funding decrease of \$8.0 million, with an increase of 48.4 FTE when compared with FY 2010 funding levels.

Within this program, the Operating Reactors Business Line supports the licensing, oversight, rulemaking, research, international activities, generic homeland security, and event response associated with the safe and secure operation of 104 civilian nuclear power reactors and 31 research and test reactors. The FY 2012 budget request for operating reactors is \$521.3 million, including 2,064.4 FTE. This represents an overall funding decrease of \$20.5 million, including 26.3 FTE, when compared with FY 2010 funding levels. Examples of activities that the requested resources would support include the following:

- conduct technical review for 950 licensing actions, including complex actions such as license amendment requests from power reactor licensees adopting the requirements for performance standards for fire protection, often referred to as National Fire Protection Association (NFPA) 805
- review extended power uprate requests for increasing electric generating capacity and one improved standard technical specification conversion
- conduct 13 active, high- and medium-priority rulemaking activities
- conduct critical research and test reactor project management functions pertaining to license renewal application efforts, and applications to produce medical isotopes
- continue reviews of 12 license renewal applications
- conduct inspection activities for the 104 operating nuclear power reactors, including the component design-basis inspections, fire protection inspections, and generic issues inspections (approximately 100 per year)
- continue the Resident Inspector Pipeline Initiative to maintain an experienced and stable onsite inspection presence of qualified resident inspectors at the 104 nuclear power reactors
- conduct domestic and international security reviews and support for screening approximately 3,000 national and international operational events, with detailed evaluation of approximately 200 of those events
- carry out cyber security evaluations, as well as 24 force-on-force security inspections to complete a 3-year cycle for inspecting power reactors
- evaluate licensee emergency preparedness during biennial exercises

The resources within the Operating Reactors Business Line reflect a decrease in license renewal activities because of schedule changes, and the reduced number of applications that will be under review.

The New Reactors Business Line supports the licensing, oversight, rulemaking, research, international activities, and generic homeland security associated with the safe and secure

development of new power reactors from design, site approval, and construction to operational status. The FY 2012 budget request for new reactors is \$279.5 million, including 968.6 FTE. This represents an overall funding increase of \$12.5 million, including 74.8 FTE, when compared with FY 2010 funding levels. Examples of activities that the requested resources will support include the following:

- perform licensing and hearing support for 15 combined licenses, including two new combined license applications during FY 2012
- certify one design certification amendment, continue licensing reviews, rulemaking, or both on five applications and begin pre-application review on a new design
- review two early site permit applications and begin review of one new application expected in FY 2012
- develop and implement the construction inspection program
- inspect the four reactors expected to be under construction
- continue licensing and oversight activities for the construction of Watts Bar Unit 2
- conduct 15 domestic and international vendor inspections of component manufacturing quality
- conduct pre-application activities for two small modular reactor designs
- perform an acceptance review and initiate a design certification review for one small modular reactor
- continue the implementation of the Next Generation Nuclear Plant licensing strategy, which was developed in accordance with the Energy Policy Act of 2005
- continue to develop the regulatory framework that integrates the use of risk insights into the review process and support the resolution of key policy and safety issues associated with small modular reactors

The New Reactors Business Line shows an increase primarily driven by construction oversight of two new potential reactors under construction (for a total of five) and by development of the workforce to support inspection of up to an additional six reactors in future years. In addition, resources increase to support the review of new advanced reactor applications, increased pre-application interactions with prospective applicants, and funding for the one-time build-out of a new Headquarters office building.

Nuclear Materials and Waste Safety Program

The Nuclear Materials and Waste Safety Program encompasses the NRC's responsibility to license, regulate, and oversee nuclear materials and waste in a manner that adequately protects public health and safety and the environment. This program's goal is to verify the safety and security of materials and waste and protection against radiological sabotage, theft, or diversion of nuclear materials. Through this program, the NRC regulates uranium processing and fuel facilities; research and pilot facilities; nuclear materials users (medical, industrial, research, and academic); spent fuel storage; spent fuel storage casks and transportation packaging; decontamination and decommissioning of facilities; and low-level and high-level radioactive waste.

Overall resources requested in the FY 2012 budget for the Nuclear Materials and Waste Safety Program are \$226.5 million, including 868.5 FTE. This funding level represents an overall funding decrease of \$20.7 million, including 49.6 FTE, when compared with FY 2010 funding levels.

Within this program, the Fuel Facilities Business Line supports licensing, oversight, rulemaking, research, international activities, generic homeland security, and event response associated with the safe and secure operation of various fuel facilities, such as conversion, enrichment, and fuel fabrication facilities, and nuclear fuel research and pilot facilities. The FY 2012 budget request for fuel facilities is \$55.2 million, including 226.5 FTE. This represents an overall funding increase of \$0.6 million, including 18.2 FTE, when compared with FY 2010 funding levels. Examples of activities that the requested resources would support include the following:

- licensing and oversight activities associated with fuel facilities and licensees with greater than critical mass quantities of special nuclear material
- operation and maintenance of the Nuclear Material Management and Safeguards System database and the Nuclear Materials Information Program
- emergency preparedness, security, and licensee performance reviews
- licensing, certification, inspection, oversight, environmental reviews, research, adjudicatory, enforcement, allegation, and other regulatory activities associated with new and operating fuel facilities, including uranium conversion and enrichment and fuel fabrication
- completion of mandatory hearings on the uranium enrichment license applications for the AREVA centrifuge and General Electric-Hitachi laser enrichment facilities
- licensing review of the International Isotopes depleted uranium deconversion facility
- oversight of construction activities at the proposed Mixed Oxide (MOX) Fuel Fabrication Facility and commencement of construction of the AREVA, General Electric-Hitachi, and International Isotopes facilities

The Fuel Facilities Business Line resources increase to account for the significant construction activities planned at the MOX facility; the commencement of construction at the AREVA centrifuge and General Electric-Hitachi laser enrichment facilities, and the International Isotopes depleted uranium deconversion facility; and to reflect staffing required at resident inspector offices. Resources also increase to support rulemaking activities regarding the potential licensing of reprocessing facilities. These increases are offset by the completion of the licensing and environmental reviews of the AREVA and General Electric-Hitachi license applications, as well as the completion of the licensing and environmental reviews for the International Isotopes depleted uranium deconversion facility application.

The Nuclear Materials Users Business Line supports the licensing, oversight, rulemaking, research, international activities, generic homeland security, event response, and State, Tribal, and Federal program activities associated with the safe and secure possession, processing, handling, and use of nuclear materials for the many and diverse uses of these materials. Resources also support the National Materials Program and the Agreement State activities. The FY 2012 budget request for nuclear materials users is \$92.1 million, including 347.1 FTE. This represents an overall funding increase of \$0.4 million, including 9.1 FTE, when compared with FY 2010 funding levels. Examples of activities that the requested resources would support include the following:

- completion of 2,500 materials licensing actions and 1,000 routine health and safety inspections, including naturally occurring and accelerator-produced radioactive material and security inspections
- event evaluation, research, incident response, allegation, enforcement and investigations, and rulemaking activities to maintain the regulatory safety and security infrastructure needed to process and handle nuclear materials

- materials activities related to State, Tribal, and Federal programs, including oversight, technical assistance, regulatory development, and cooperative efforts
- operation of the National Source Tracking System, a secure, Web-based, nationalized central registry designed to enhance the accountability for radioactive sources
- development of the Integrated Source Management Portfolio, which consists of the National Source Tracking System, the Web-Based Licensing System, and the License Verification System
- reviews of 135–180 import/export of nuclear equipment and material license applications
- investigations into 45–55 allegations of materials-related wrongdoing

The Nuclear Materials Users Business Line resources increase slightly because of adjustments made within the business line to cover emergent activities. Overall, a slight increase resulted to address the workload associated with the implementation of the Integrated Source Management Portfolio major information technology system, which consists of the National Source Tracking System, the Web-Based Licensing System, and the License Verification System.

The Spent Fuel Storage and Transportation Business Line supports the licensing, oversight, rulemaking, research, event response, and international activities associated with the safe and secure storage of spent nuclear fuel and safe and secure transportation of radioactive materials. The FY 2012 budget request for spent fuel storage and transportation is \$41.2 million, including 152.4 FTE. This represents an overall funding increase of \$7.4 million, including 29.7 FTE, when compared with FY 2010 funding levels. Examples of activities that the requested resources would support include the following:

- review of license requests for site-specific independent spent fuel storage installations (ISFSIs), dual-purpose (storage and transport) casks, transportation security plans, and route approvals to support safe and secure domestic and international transportation of radioactive materials, regulatory requirements for full-core offload capability at operating reactor sites, and transfer of spent fuel to ISFSIs to support reactor decommissioning
- regulatory improvements to the proficiency and effectiveness of the licensing, inspection, and enforcement programs associated with storage and transportation of spent nuclear fuel
- inspection of storage cask and transportation package vendors, fabricators, and designers to ensure safety
- resolution of technical issues associated with allowance of burn-up credit for transportation and storage casks and the transportation and storage of high burn-up fuels (greater than 45 gigawatt-days/ metric tons of uranium)
- interaction with the International Atomic Energy Agency and other international regulators to inform the development of the regulatory framework for transportation of radioactive materials, long-term spent fuel and high-level waste storage, deferred transportation, and ultimate geologic disposal

The Spent Fuel Storage and Transportation Business Line resources would increase to develop the information necessary to evaluate extended long-term storage of radioactive material. Resources are provided for a risk-informing gap study to identify methods, data, decision criteria, and regulatory actions that are needed to implement a regulatory framework for very long-term (more than 120 years) dry spent fuel storage that is enhanced by risk insights. Resources will also support a scoping study for a generic environmental impact statement for ensuring protection of the environment from such spent fuel storage. Resources will also be provided to conduct research on technical issues associated with this storage, and to coordinate

with international partners on options for harmonizing international standards for certification of transport packages and licensing of storage cask designs.

The Decommissioning and Low-Level Waste Business Line supports the licensing, oversight, rulemaking, research, and international activities associated with the safe and secure removal of a nuclear facility from service and reduction of residual radioactivity to a level that permits release of the property and termination of the NRC license. The FY 2012 budget request for decommissioning and low-level waste is \$37.9 million, including 142.6 FTE. This represents an overall funding decrease of \$0.3 million, including 7.6 FTE, when compared with FY 2010 funding levels. Examples of activities that the requested resources would support include the following:

- project management and technical reviews for decommissioning activities for 10 power reactors, 10 decommissioning research and test reactors, 24 decommissioning materials facilities, 21 inactive Title I decommissioning, 11 Title II decommissioning, uranium recovery facilities, and five sites that are under general license with the U.S. Department of Energy (DOE)
- interfaces with licensees, applicants, Federal and State agencies, the public, other stakeholders, and Native American Tribal governments
- 8 environmental reviews and 11 safety reviews (hearings included) in support of licensing and oversight of uranium recovery facilities
- oversight of certain DOE waste determination activities and plans for waste incidental to reprocessing consistent with the NRC's responsibilities in the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005

The Decommissioning and Low-Level Waste Business Line resources decrease reflect a refocusing of long-term waste research activities and adjustments made to the contract, travel, and training needs and other carryover balances for waste incidental to reprocessing work.

The High-Level Waste Repository Business Line supports activities associated with DOE's Yucca Mountain geologic repository application. This activity terminates in FY 2011. No resources are requested in FY 2012 for this business line. In the FY 2012 budget structure, the New Fuel Facilities and Operating Fuel Facilities Business Lines were merged into the Fuel Facilities Business Line.

Mr. Chairmen, Ranking Members, and Members of the Subcommittees, this concludes my formal testimony on the NRC's FY 2012 budget request. On behalf of the Commission, thank you for the opportunity to appear before you. I look forward to continuing to work with you to advance the NRC's important safety mission. I would be pleased to respond to any questions that you may have. Thank you.

From: Powell, Amy
Sent: Monday, March 14, 2011 3:19 PM
To: Schmidt, Rebecca
Cc: Belmore, Nancy; Decker, David
Subject: FW: Updated Notecards

Becky – of the notecards that we pulled for update, all were provided last week in the batch to Nancy and David except for Areva Eagle Rock. Roger will update that by tomorrow am.

Thanks

From: Mike Wickham <mike.wickham@daybreak2.com>
Sent: Monday, March 14, 2011 4:13 PM
To: Schmidt, Rebecca
Subject: Conference Call with US Nuclear Regulatory Commission
Attachments: VIP_Rebecca_Schmidt.pdf

March 14, 2011

Rebecca Schmidt
Director of Department
US Nuclear Regulatory Commission
11545 Rockville Pike
Rockville, MD, 20852-2746

Dear Rebecca:

I'd like to arrange a time to speak with you via a telephone conference call. My company offers a wide range of B2B sales and marketing services including demand-creation and lead-generation. Key to our success is a proprietary database of over 12 million key decision makers throughout the world. Please visit our website at www.daybreakdirect.com to better acquaint yourself with our services.

Our CEO pioneered this successful sales process with Sunset Direct, Inc. Sunset rocketed to #28 on the Inc. 500, driving over \$2 billion a year in sales. Sunset created and lead new business development programs for Apple, Adobe, ADP, AT&T, Canon, Cisco, Dell, Epson, Fujitsu, Google, HP, IBM, Intel, Microsoft and Yahoo to name a few.

I've asked my executive assistant, Beth Brown, to give you a call to arrange a good time to speak. I travel extensively. Perhaps I could take you to lunch at your favorite restaurant the next time I am in town.

Sincerely,

Mike Wickham
Senior Vice President
DayBreak, Ltd.
Houston Texas
281 716 5606
<http://www.daybreakdirect.com>
mike.wickham@daybreakdirect.com

If you've received this letter in error, simply respond to the letter and put remove in the subject or click on the following link http://www.daybreakdirect.com/unsubscribe_email.php?email=rebecca.schmidt@nrc.gov



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Rebecca Schmidt

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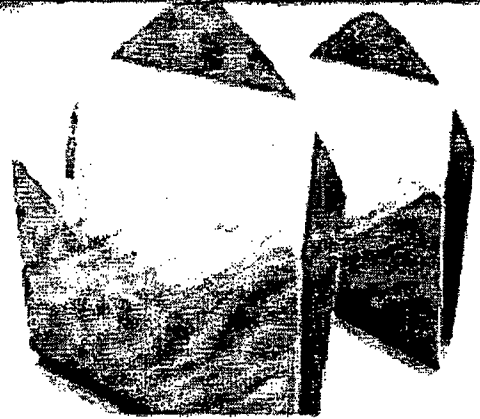
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Rebecca Schmidt

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3. Personalized PDF creation.
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6. Appointment setting.

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Rebecca, Let us show you other campaigns. We can walk you through the process, and demonstrate to you exactly what to do to light up your phone lines, and fill your inbox will ultra-qualified opportunities. We'll give you read-only capabilities to other campaigns so you can watch them working in real-time.

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DayBreak works with you to identify the best individuals for your messaging. We have over twelve million contacts in our database, with hundreds of different vertical markets. We can target your message by a) industry, b) keywords, c) job title, d) area code, e) zip code, f) country and more. Our email addresses are built through a series of processes including a) searching Google, b) searching Bing, c) receiving email addresses from co-workers, d) email campaigns for other companies which constantly validate our email addresses.

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We've got a one-time introductory ninety-day trial program that allows you to kick-start your messaging efforts for only \$999 set up. This program puts our "skin in the game" so-to-speak. We are so confident in our ability to delivery significant results that you don't pay unless you are completely satisfied. No strings.

From: OPA Resource
Sent: Monday, March 14, 2011 5:38 PM
To: Ash, Darren; Barkley, Richard; Batkin, Joshua; Bell, Hubert; Belmore, Nancy; Bergman, Thomas; Bollwerk, Paul; Bonaccorso, Amy; Borchardt, Bill; Bozin, Sunny; Brenner, Eliot; Brock, Terry; Brown, Boris; Bubar, Patrice; Burnell, Scott; Burns, Stephen; Carpenter, Cynthia; Chandrathil, Prema; Clark, Theresa; Collins, Elmo; Couret, Ivonne; Crawford, Carrie; Cutler, Iris; Dacus, Eugene; Dapas, Marc; Davis, Roger; Dean, Bill; Decker, David; Dricks, Victor; Droggitis, Spiros; Flory, Shirley; Franovich, Mike; Gibbs, Catina; Haney, Catherine; Hannah, Roger; Harbuck, Craig; Harrington, Holly; Hasan, Nasreen; Hayden, Elizabeth; Holahan, Gary; Holahan, Patricia; Holian, Brian; Jacobssen, Patricia; Jaczko, Gregory; Jasinski, Robert; Jenkins, Verlyn; Johnson, Michael; Jones, Andrea; Kock, Andrea; Kotzalas, Margie; Ledford, Joey; Lee, Samson; Leeds, Eric; Lepre, Janet; Lew, David; Lewis, Antoinette; Loyd, Susan; Magwood, William; McCrary, Cheryl; McGrady-Finneran, Patricia; McIntyre, David; Mensah, Tanya; Mitlyng, Viktoria; Monninger, John; Montes, David; Nieh, Ho; Ordaz, Vonna; Ostendorff, William; Owen, Lucy; Powell, Amy; Quesenberry, Jeannette; Reddick, Darani; Regan, Christopher; Reyes, Luis; Riddick, Nicole; RidsSecyMailCenter Resource; Riley (OCA), Timothy; Rohrer, Shirley; Samuel, Olive; Satorius, Mark; Schaaf, Robert; Schmidt, Rebecca; Scott, Catherine; Screnci, Diane; Shaffer, Vered; Shane, Raeann; Sharkey, Jeffrey; Sheehan, Neil; Sheron, Brian; Siurano-Perez, Osiris; Steger (Tucci), Christine; Svinicki, Kristine; Tabatabai, Omid; Tannenbaum, Anita; Taylor, Renee; Temp, WDM; Thomas, Ann; Uhle, Jennifer; Uselding, Lara; Vietti-Cook, Annette; Virgilio, Martin; Virgilio, Rosetta; Walker-Smith, Antoinette; Weaver, Doug; Weber, Michael; Weil, Jenny; Werner, Greg; Wiggins, Jim; Williams, Evelyn; Zimmerman, Roy; Zorn, Jason
Subject: Press Release: NRC Sends Special Inspection Team to Global Nuclear Fuel Plant
Attachments: 11-007.ii.docx

Office of Public Affairs
US Nuclear Regulatory Commission
301-415-8200
opa.resource@nrc.gov



NRC NEWS

U.S. NUCLEAR REGULATORY COMMISSION

Office of Public Affairs, Region II
245 Peachtree Center Ave. NE, Suite 1200
Atlanta, GA 30303-1257
Web Site: www.nrc.gov

No. II-11-007

March 14, 2011

CONTACT: Roger Hannah (404) 997-4417
Joey Ledford (404) 997-4416

E-mail: OPA2@nrc.gov

NRC SENDS SPECIAL INSPECTION TEAM TO GLOBAL NUCLEAR FUEL PLANT

The Nuclear Regulatory Commission has sent a Special Inspection Team to Global Nuclear Fuel-Americas, LLC, to examine the circumstances associated with an event in which the licensee failed to maintain required process control over a small quantity of enriched uranium. The nuclear fuel manufacturing facility is located in Wilmington, N.C.

The event, reported to the NRC on March 2, occurred in a grinding station in one of the facility's process lines. A quantity of uranium dioxide beyond prescribed limits was found to have accumulated in a filter in the grinding station.

Upon discovery of the condition, all of the facility's grinding stations were shut down to assess their conditions. No other examples of powder accumulation were discovered. Other process controls and systems ensured that event posed no danger to plant employees or the public.

The three-member NRC special inspection team, which is expected to begin its work at the facility today, will determine the safety implications of the event and the adequacy of the licensee's corrective actions.

The NRC will issue a publicly available inspection report documenting the findings within 30 days after the inspection is completed.

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From: Droggitis, Spiros
Sent: Monday, March 14, 2011 5:50 PM
To: Schmidt, Rebecca; Powell, Amy
Subject: Re: Que

OK, I'll tell Roger we just need the file.

From: Schmidt, Rebecca
To: Droggitis, Spiros; Powell, Amy
Sent: Mon Mar 14 17:46:28 2011
Subject: RE: Que

No, just found out the Committee has superduper electronic capabilities

From: Droggitis, Spiros
Sent: Monday, March 14, 2011 5:42 PM
To: Schmidt, Rebecca; Powell, Amy
Subject: Re: Que

I guess we all thought he wanted a chart to display. Please correct Roger, Michael and my misimpression.

From: Schmidt, Rebecca
To: Droggitis, Spiros; Powell, Amy
Sent: Mon Mar 14 17:39:48 2011
Subject: RE: Que

I thought we were going to do it electronically on a disk for the Committee.

From: Droggitis, Spiros
Sent: Monday, March 14, 2011 5:39 PM
To: Schmidt, Rebecca; Powell, Amy
Subject: Fw: Que

Can u help Roger?

From: Rihm, Roger
To: Droggitis, Spiros
Sent: Mon Mar 14 17:36:35 2011
Subject: Que

So, I'm working closely with Michael Marshall and we've got the wheels in motion on the various requests. QUESTION: If we are going to have a couple of graphics that the Chairman is going to want to show, can OCA advise on what SIZE they should be? Do you have a typical size????

From: Rihm, Roger
Sent: Monday, March 14, 2011 5:52 PM
To: Droggitis, Spiros
Subject: RE: Que

Even easier. I assume you guys will transmit tomorrow?

From: Droggitis, Spiros
Sent: Monday, March 14, 2011 5:52 PM
To: Rihm, Roger
Subject: Re: Que

Now I'm told we just need to send the file up to the Committee. They have super duper capabilities.

From: Rihm, Roger
To: Droggitis, Spiros
Sent: Mon Mar 14 17:36:35 2011
Subject: Que

So, I'm working closely with Michael Marshall and we've got the wheels in motion on the various requests. QUESTION: If we are going to have a couple of graphics that the Chairman is going to want to show, can OCA advise on what SIZE they should be? Do you have a typical size?????

From: Marshall, Michael
Sent: Monday, March 14, 2011 6:44 PM
To: Rihm, Roger
Cc: Schmidt, Rebecca; Droggitis, Spiros
Subject: Heads-Up: Turn Around Time on Graphics and Tables

Importance: High

Hello Roger,

In order to make sure the presentation materials are sent to Congress in advance as needed and to support prep meetings, we need the graphic and tables around 10:00 am on Tuesday. Sorry for communicating this earlier, but I was not fully aware of all our obligations.

Michael L. Marshall, Jr.
Policy Advisor for Reactors
Office of the Chairman
U.S. Nuclear Regulatory Commission

Phone: 301-415-1750
Email: michael.marshall@nrc.gov

From: Schmidt, Rebecca
Sent: Monday, March 14, 2011 5:48 PM
To: Marshall, Michael; Rihm, Roger
Subject: FW: Que

Need it on a disk instead of poster board

From: Schmidt, Rebecca
Sent: Monday, March 14, 2011 5:46 PM
To: Droggitis, Spiros; Powell, Amy
Subject: RE: Que

No, just found out the Committee has superduper electronic capabilities

From: Droggitis, Spiros
Sent: Monday, March 14, 2011 5:42 PM
To: Schmidt, Rebecca; Powell, Amy
Subject: Re: Que

I guess we all thought he wanted a chart to display. Please correct Roger, Michael and my misimpression.

From: Schmidt, Rebecca
To: Droggitis, Spiros; Powell, Amy
Sent: Mon Mar 14 17:39:48 2011
Subject: RE: Que

I thought we were going to do it electronically on a disk for the Committee.

From: Schmidt, Rebecca
Sent: Monday, March 14, 2011 8:04 PM
To: Shane, Raeann
Subject: Re: some good news

Well you deserve it!

From: Shane, Raeann
To: Schmidt, Rebecca
Sent: Mon Mar 14 19:50:26 2011
Subject: Re: some good news

Becky,

OMG! Thank you so much, I had no idea. My blackberry somehow turned itself off in my purse so I just saw this message. Thank you again, see you tomorrow.

Raeann

From: Schmidt, Rebecca
To: Shane, Raeann
Sent: Mon Mar 14 16:39:34 2011
Subject: some good news

Congratulations!

From: Picon-Colon, Reinaldo
Sent: Monday, March 14, 2011 4:36 PM
To: Schmidt, Rebecca
Cc: Cohen, Miriam; Tracy, Glenn; Shay, Jason
Subject: ACTION: Notification, NRC Distinguished & Meritorious Awards Recipients. (OCA)
Importance: High

Good Afternoon Ms. Schmidt!

The Commission has approved this year's Distinguished & Meritorious awards recipients.

STEP 1:

Notify your award recipient immediately. Her name is:

- **Shane, Raeann** - Meritorious Service Award

STEP 2:

Reply to me by e-mail as soon as you have been able to notify her.

Once I receive your confirmation, I will then contact her to coordinate the follow-up process regarding photography, travel arrangements for family, etc. Usually, this process takes a significant amount of time, and it is required in order to prepare the Certificates, Special Lapel Pins, and brochures. So, I need to begin this process immediately.

Your prompt response will be greatly appreciated.

Our 34th Annual Awards Ceremony will be held on **Tuesday, June 14, 2011**, at the Bethesda North Marriott Hotel and Conference Center

- 1:00 pm - 2:00 pm Pre-Ceremony Reception.
(This is for awardees, their guests, Commissioners, and Office Directors)
- 2:00 pm - 3:00 pm 34th Annual Awards Ceremony
(This is for all employees)
- 3:00 pm - 4:30 pm Post Ceremony Reception
(This is for all employees)

Thank you in advance for your quick response.

Reinaldo "Rey" Picón-Colón
Project Manager & Coordinator of the Annual Awards Ceremony (June 14, 2011)
U.S. Nuclear Regulatory Commission (NRC)
Office of Human Resources (HR)
Program Management, Policy Development
and Analysis Staff (PMDA)

"We can't solve problems by using the same kind of thinking we used when we created them."
--Albert Einstein

Reinaldo.Picon-Colon@nrc.gov
1 (301) 492-2272 (office)
1 (301) 492-2241 (fax)

From: GovExec.com newsletters <news@cop.govexec-media.com>
Sent: Tuesday, March 15, 2011 6:02 AM
To: Schmidt, Rebecca
Subject: GovExec.com Columns: On Politics



On Politics

TUESDAY, MARCH 15, 2011

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Trend or Fluke?

By Charlie Cook, [National Journal](#)

I only get to celebrate special days like my birthday, wedding anniversary, Thanksgiving, and Christmas once a year, but I can rejoice every month or so when an NBC News/*Wall Street Journal* poll comes out (yes, this is sadly true). The survey, conducted by Democrat Peter Hart and Republican Bill McInturff, two of the most experienced and respected pollsters in the business, contains a treasure trove of data, most of which never appears on the air or in print.

Luckily for psephologists (yes, this is a word, meaning "students of elections") and political junkies, both NBC News and *The Wall Street Journal* release the full questionnaires online. This allows mere mortals to peer over the shoulders of top political pollsters and peruse data not dissimilar to what campaigns see. (Although, I am an NBC News political consultant, this isn't just sucking up; it's true.)

One of my favorite questions tests public attitudes toward government's role. The version that Hart and McInturff use gives respondents a choice between "Government should do more to solve problems and meet the needs of people" or "Government is doing too many things better left to businesses and individuals." The order is alternated to prevent bias.

Back in 2007 and mid-2008, the government-should-do-more camp was a slight majority, in the 52-55 percent range; the government-doing-too-much position was in the 38-42 percent range. Starting a month after Lehmann Brothers collapsed in September 2008 and when credit markets seized up, the results tightened up. The more skeptical view of government pulled ahead in the September 2009 poll, 49 percent to 45 percent. In the national exit poll taken by various news

organizations on Election Day 2010, the government-should-do-more response dropped to 38 percent, and the more antigovernment attitude soared to 56 percent.

However, in the latest NBC/WSJ poll of 1,000 adults (including 200 by cellphone; overall margin of error plus or minus 3.1 points), conducted from February 24-28, 51 percent of respondents said the government-should do more and 46 percent said the government was doing too much. One could conclude that the antigovernment bandwagon certainly isn't picking up speed.

More important - and I have to give NBC Political Director Chuck Todd credit for pointing this out to me - independents shifted significantly. In the February survey, 47 percent of independents said the government was doing too much, compared with 60 percent who said so last October. Independents who said the government should do more jumped 13 points, from 38 percent to 51 percent.

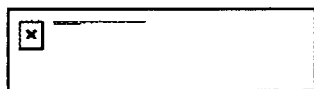
Why is this important? Because independent voters are the ones who matter most in American politics. More than 90 percent of Democratic voters can be expected to vote Democratic, just as more than 90 percent of Republicans reliably vote Republican. In a bad year for Republicans, such as 2006, voters who call themselves Republican voted for GOP candidates over Democratic candidates by 91 percent to 8 percent. Last year, a great one for the GOP, Republican voters stuck with the party by 95 percent to 4 percent. In 2006, a great year for Democrats, party members voters cast their ballots for Democrats by 93 percent to 7 percent; last year, the numbers were 92 percent to 7 percent.

It's not about defections, and it isn't so much about turnout either. In 2006, 38 percent of all voters called themselves Democrats and 36 percent called themselves Republicans. In 2010, it was 36 percent for each party. The big difference was that independents in 2006 swung from backing Democrats over Republicans (by 57 percent to 39 percent), to preferring Republicans last November (by 56 percent to 38 percent). The swing in both elections was 18 points.

Democrats can be expected to support bigger government, as they did in this survey, siding 75 percent to 21 percent on the do-more side, and Republicans can be reliably expected to be on the antigovernment side, as they were, 75 percent to 22 percent. It's when independents make a big swing that election results shift. The point is, politically speaking, we need to focus specifically on how independents are moving as policy fights play out over the next two years. We know how partisans are going to see things. The question is whether independents will buy more into the Republicans' message or the Democrats'.

One poll isn't a trend, but the responses to this key question will be worth watching closely.

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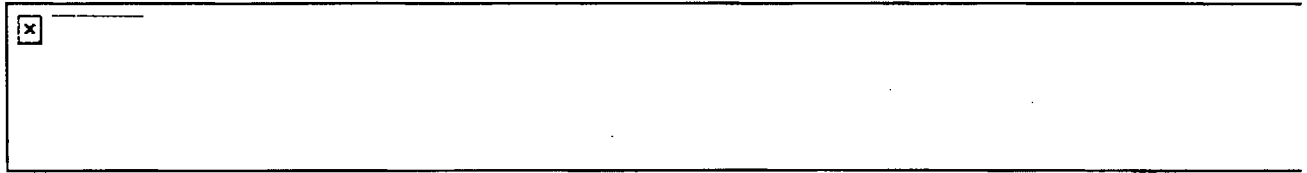
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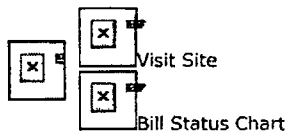
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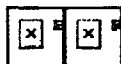
Government Executive * 600 New Hampshire Avenue, NW * Washington, DC 20037

From: CQ Budget Tracker <budgettracker-owner@cqrollcall.com>
Sent: Tuesday, March 15, 2011 7:04 AM
To: Schmidt, Rebecca
Subject: CQ Budget Tracker Newsletter





Chuck Conlon, Editor, budget@cq.com



GOP Restlessness Grows

The House is set to vote on a three-week extension of stopgap funding, with increasing numbers of Republicans saying they will oppose the measure. **The most notable objection was raised by Ohio Republican Jim Jordan, who chairs the conservative Republican Study Committee.** "With the federal government facing record deficits and a mammoth debt hanging over our economy and our future, we must do more than cut spending in bite-sized pieces," he said in a statement. The three-week CR extension ([H J Res 48](#)) would also cut \$6 billion, adhering to the GOP leadership's plan to cut \$2 billion in spending for every week that stopgap funding is extended. Arguing that a final deal on spending must be reached that also ends funding of Planned Parenthood and of the health care overhaul law, Jordan said. "We've made some solid first downs on spending. Now it's time to look to the end zone." Arizona's Jeff Flake also announced his opposition, saying "How are we ever supposed to tackle the grave fiscal challenges before us like the debt ceiling, the debt, and the FY2012 budget when we just keep punting on FY2011 spending?" And in the Senate, Florida Republican Marco Rubio said, "I did not come to the U.S. Senate to be part of some absurd political theatre."

[CQ Today Story](#)

Statements & Releases: [Jordan](#) | [Flake](#) | [Rubio](#)

With more Republicans getting anxious to force a quick showdown with President Obama and Senate Democrats over current year spending and policy riders, it is uncertain how many Republicans will vote against the CR extension today. On the March 1 vote for a two-week extension ([H J Res 44](#); [PL 112-4](#)), only six Republicans opposed the measure, but that was before outside conservative groups and elements of the Tea Party Caucus began pushing for immediate action. GOP leaders yesterday appeared confident the measure would pass, but they acknowledged the growing opposition by conservatives and suggested this could be the last short-term CR. "There is a lot of frustration about the inability of this place to produce results," House Majority Leader Eric Cantor, R-Va., said in a briefing with reporters. "We hope that this will be the last time that we have to engage in



Updated 5:45 a.m., Tuesday 3/15

Short-Term CR

The House on Tuesday takes up a three-week extension ([H J Res 48](#)) under a closed rule. The measure cuts current spending by \$6 billion. [CQ](#)

[Today Story](#) | [Complete Bill Coverage](#)
FY 2011 Spending / Cuts

The parties remain more than \$50 billion apart on spending cuts for the current fiscal year. Discussions among Republicans, Democrats and the White House are reportedly ongoing. [Complete Bill Coverage](#)

any stopgap measures." Both he and Majority Whip Kevin McCarthy, R-Calif., laid the blame on Obama and Senate Democrats, arguing that they needed to come up with a counter offer. "The real question is how serious are they," McCarthy asked. "The Democrats have the Majority in the Senate. They haven't even been able to get what their hopes and dreams were off the floor. It's hard to figure out where we go forward," he said, suggesting that Senate Democrats should bring to the Senate floor a funding proposal for the year and open it up for amendment, as was done in the House.

Cantor-McCarthy Transcript

Democrats quickly seized on Jordan's announcement and Rubio's posture as evidence that conservative GOP members might prevent party leaders from reaching a compromise on a longer-term spending bill. "Tea Party lawmakers are unwilling to accept anything short of the extreme cuts in the House budget, even if it risks a shutdown," said Sen. Charles E. Schumer, vice chairman of the Democratic caucus. "In order to avert a shutdown, Speaker Boehner should consider leaving the Tea Party behind and instead seek a consensus in the House among moderate Republicans and a group of Democrats," Schumer added. Senate Majority Leader Harry Reid, D-Nev., also suggested that Republicans do not want to compromise. "The distance between Democrats and Republicans is not measured only in money. I regret to report that so far, we remain far more divided on the willingness to compromise," he said in a speech on the Senate floor. "We recognize the reality that one party alone will not reach a resolution without the other's cooperation and consent. We've accepted and acknowledged that we need to share the sacrifice," he said. "But we are still waiting for Republicans to do the same."

Statements & Releases: [Reid](#) | [Schumer](#)

INITIAL ROADBLOCK JUST A BUMP IN THE ROAD: The first effort by Senate GOP conservatives to block legislation that does not cut spending was easily overcome yesterday when the Senate voted, 84-12, to invoke cloture and end debate on the motion to proceed to [S 493](#), a bill reauthorizing the Small Business Innovation Research and Small Business Technology Transfer programs. Ten Senate Republicans announced last week that they would oppose consideration of any non-budgetary measures in an effort to jumpstart debate on government spending and debt in advance of an expected vote in the next couple months on raising the debt limit. But the small-business bill has substantial GOP support, and senators expect that GOP amendments dealing with broader spending issues will nevertheless be considered during

floor debate on the measure. All 10 GOP senators, who last week signed a letter saying they will block non-budgetary legislation, voted against the motion to invoke cloture, and were joined by two other Republicans. [CQ Today Story](#) | [Senate Cloture Vote](#)

DEFICIT 'FUNDAMENTALS' POSE CHALLENGE TO GOP: House Budget Chairman Paul D. Ryan, R-Wis., may have a difficult time showing more significant deficit reduction than Obama's budget, the nonpartisan Concord Coalition argues in an issue brief released Monday.

"The same ugly deficit fundamentals that stymied Democratic budget-writers last year, and that made the president's recent budget proposal seem so inadequate, will confront Ryan and his fellow budget committee members with some very difficult choices," Concord says.

The group notes that Obama's budget has a \$1.5 trillion "head start" in deficit reduction because the administration uses more favorable economic and technical assumptions than CBO, who's scoring is traditionally used by the House and Senate Budget committees in drafting their budget resolutions.

"Even small changes toward higher growth can have fairly significant impact in lowering deficits over the budget window," Concord notes of the advantage provided by better economic assumptions, while also arguing that "using CBO numbers is the proper course for Ryan." Obama's budget also has an advantage because he also assumes the enactment of revenue increases to reduce future deficits — including by allowing the Bush tax cuts for the wealthy to expire — while House Republicans will avoid revenue options and will focus almost exclusively on cutting spending to reduce future deficits.

[Concord Coalition Issue Brief](#)

Concord says that Republicans can show greater deficit reduction only if they are "willing to venture beyond the safe ground of non-security spending to lower the deficit." Relying primarily on cuts to non-security spending, which has been the GOP's focus to date, "will make it impossible to show substantial improvement in deficits over the budget window." So a key consideration will be the extent to which Republicans are willing to address other policy options, such as restraining Defense spending and entitlement spending, or increasing some revenue. House Republicans have said that they intend to address major entitlements in their budget, but Concord notes that even so, "within the 10-year budget window it will be difficult to come up with enough savings to dramatically improve the basic budget picture. Changes such as raising eligibility ages or altering the Social Security benefit formula would need to be phased in. Other options, such as charging higher Medicare

premiums or switching to a less generous (if more realistic) cost-of-living index, could have a more immediate effect. But Ryan has repeatedly stated that current beneficiaries or those near retirement would not be affected by reforms.”

Concord concludes that Republicans face a dilemma: veering away from using CBO numbers, or using honest numbers but assuming policy changes that Republicans have been reluctant to endorse.

“Budget scoring gimmicks or adopting a rosy economic scenario can always be used in place of hard choices, but this comes at the expense of credibility,”

Concord says. “On the other hand, a budget that shows greater progress on reducing the deficit will, of necessity, require an openness to changes that Republicans have been reluctant to put in play such as defense cuts, revenue increases and entitlement reforms that could affect current beneficiaries.”

Suggesting that Republicans should consider proposals recommended by the Bowles-Simpson and Domenici-Rivlin commission, Concord says that, “Ideally, the Republicans will take this second route — acknowledging the unpleasant realities of the federal budget and presenting the serious and specific fiscal reform plan that they have promised the American public.”

DEFICIT REDUCTION PLAYBOOK RELEASED: The CBO late last week released its biennial report on policy options for reducing the government’s budget deficits.

The report provides a menu of more than 100 options for changing federal programs to reduce spending or for modifying the tax code to increase revenue. The report is not intended to represent a comprehensive plan for reducing deficits, CBO notes, but rather a set of discrete policy actions illustrating ways that lawmakers could reduce deficits. The report includes 38 options to reduce discretionary spending (with one-third of those focused on Defense), 32 options to reduce entitlements and mandatory spending (two-thirds of which deal with spending on health care programs, Social Security, and other retirement programs), and 35 options for raising revenue. On mandatory spending, options include those to modify the automatic indexation of benefits, the populations who are entitled to benefits, and the federal government’s share of spending for specified programs. On revenue, CBO points out that they come through a wide variety of sources, with individual income taxes and social insurance taxes (for Social Security and Medicare) producing more than 80 percent of the government’s revenue each year.

[CBO’s Deficit Reduction Options Report](#) | [Report Website](#)

CBO’s report does not provide an exhaustive list of options for

reducing the deficit, the budget agency notes, adding that it has changed the title of the report to reflect the current fiscal situation.

The report's title had been changed in 2000 to "Budget Options" because that was a time of budget surpluses. But "because the budgetary context has shifted dramatically since 2000," CBO has reverted to the report's earlier title — "Reducing the Deficit: Spending and Revenue Options." Together with the GAO report on duplicative programs released earlier this month, CBO's new report could provide lawmakers with plenty of ideas for how they can reduce the government's annual shortfalls. For the convenience of our readers, we've placed links to those two reports in the "Reference" section in the left-hand rail of the Budget Tracker website, under the "Other Key Issues" category.

In Brief

• **Parties Split on Expansion of Voucher Program for Homeless Veterans:** As lawmakers continue to debate how to fund the government for the remainder of fiscal 2011, one emerging point of contention involves funding for a program to provide more assistance for chronically homeless veterans. [Full Story](#)

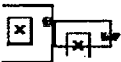
• **Obama Vows Not to Cut Education Funding, Calls for a Rewrite of 'No Child':** Besides calling on Congress Monday to rewrite the federal education law before the start of the next school year, President Obama beseeched lawmakers to preserve education funding. [Full Story](#)

• **House Agriculture Panel Makes Case For Holding Off Major Budget Cuts:** The House Agriculture Committee is expected to urge Budget Chairman Paul D. Ryan to spare the fiscal 2012 budget for farm programs from significant spending cuts, citing projected crop-insurance savings and past multi-year reductions in other areas. [Full Story](#)

• **Centrist Democrats Warming to Anti-Bailout Resolution:** A bipartisan push to express opposition to any federal bailout of financially troubled states is taking shape in the Senate, despite strong opposition from Democratic leaders. [Full Story](#)

• **House Panels to Mark Up FAA Reauthorization, but Extension Still Needed:** The House is beginning to move forward on a bill to reauthorize the Federal Aviation Administration, but not quickly enough to head off the need for another short-term extension. [Full Story](#)

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New bill information since Saturday, Mar. 12

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From: Roll Call <rollcall@e.rollcall.com>
Sent: Tuesday, March 15, 2011 8:02 AM
To: Schmidt, Rebecca
Subject: Latest News From Roll Call Politics



Tuesday, Mar. 15, 2011

Politics



[2012 Ad Plan: Clicking to Victory](#)



[Davis Seeks 'Tea Party' Line in N.Y.](#)



[Rothenberg: Tim Kaine Might Not Be the Perfect Answer](#)



[Tim Kaine 'Likely' to Run for Senate](#)



[Between the Lines: Redistricting Ramping Up With Contests, Clashes](#)



[Wisconsin: Everyone Wants Piece of Unions Fight](#)



[Massachusetts: Brown Dominates Democrats in Early Poll](#)



[Indiana: Gov. Mitch Daniels Is Backing Lugar](#)



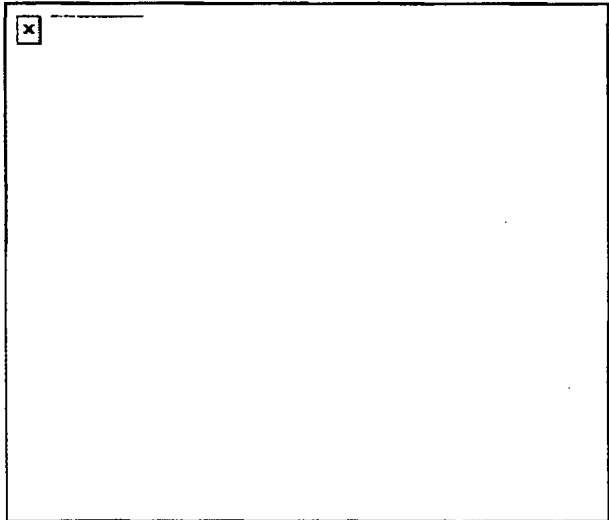
[Nation: DSCC Asks Supporters to Pick New Slogan](#)



[Barbour Spokesman Steps Down After Making Japan Joke](#)



[Calif. 36 Special Election Date Set](#)





2012 Ad Plan: Clicking to Victory

President Barack Obama's 2008 strategy set itself apart from other political campaigns at the forefront of online advertising technology, but that world is evolving rapidly. [Full Story](#)

Davis Seeks 'Tea Party' Line in N.Y.

Republican nominee Jane Corwin appears to be avoiding many of the pitfalls that produced the GOP's last New York special election disaster, but Jack Davis could still make things interesting. [Full Story](#)

Rothenberg: Tim Kaine Might Not Be the Perfect Answer

Sen. Jim Webb's announcement in early February that he would not seek a second term wasn't exactly a shocker. Democrats always knew that since Webb isn't your typical Senator, he might not behave as others have and that they needed a Plan B. For many, Tim Kaine has remained Plans B, C and D ever since Webb announced his plans. [Full Story](#)

Tim Kaine 'Likely' to Run for Senate

Former Virginia Gov. Tim Kaine said Monday that he is 'likely' to seek the seat of retiring Sen. Jim Webb (D), but stopped short of outright announcing a campaign. [Full Story](#)

Between the Lines: Redistricting Ramping Up With Contests, Clashes

While the Virginia General Assembly ultimately controls the final outcome, students from 13 Virginia colleges have crafted "fair alternatives" to "gerrymandered political districts." The competition has produced 68 student-drawn maps with new boundaries for 11 Congressional districts, 100 state House districts and 40 Senate districts. [Full Story](#)

Wisconsin: Everyone Wants Piece of Unions Fight

As the fight over the Wisconsin budget has been largely resolved, the political battle continues. Case in point — a Google search for "Wisconsin unions" pulls up four paid political ads. [Full Story](#)

Massachusetts: Brown Dominates Democrats in Early Poll

The seat held by Sen. Scott Brown (R) is supposed to be among Democrats' best pickup opportunities in 2012. Democrats should be troubled, therefore, by new polling released by the Western New England College Polling Institute. [Full Story](#)

Indiana: Gov. Mitch Daniels Is Backing Lugar

Sen. Dick Lugar has at least one top state Republican on his side in his GOP primary fight against state Treasurer Richard Mourdock. [Full Story](#)

Nation: DSCC Asks Supporters to Pick New Slogan

The Democratic Senatorial Campaign Committee is asking supporters to help choose a new slogan that it will slap on a car magnet for the 2012 election cycle. [Full Story](#)

Barbour Spokesman Steps Down After Making Japan Joke

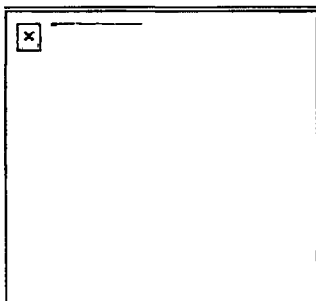
The press secretary for Mississippi Gov. Haley Barbour, a potential GOP presidential candidate, has resigned following off-color jokes he made in an e-mail Friday, Barbour's office said Monday. [Full Story](#)

Calif. 36 Special Election Date Set

First up, May 17. Next up, July 12. [Full Story](#)

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From: Belmore, Nancy
Sent: Tuesday, March 15, 2011 11:09 AM
To: Schmidt, Rebecca
Subject: FW: Canceled: Chairman's Senior Staff Planning Meeting

Nancy Belmore
Office of Congressional Affairs
U.S. Nuclear Regulatory Commission
nancy.belmore@nrc.gov
301-415-1776

From: Pace, Patti
Sent: Tuesday, March 15, 2011 11:03 AM
To: Akstulewicz, Brenda; Armstrong, Janine; Belmore, Nancy; Ellis, Marv; Gibbs, Catina; Hudson, Sharon; Kreuter, Jane; Lewis, Antoinette; Mayberry, Theresa; Pulley, Deborah; Speiser, Herald; Taylor, Renee; Wright, Darlene; Poole, Brooke; Quesenberry, Jeannette
Subject: Canceled: Chairman's Senior Staff Planning Meeting

Good Morning,

Unfortunately we need to cancel the Chairman's senior staff planning meeting scheduled for Wednesday March 15th at 4:00pm.

Thanks,

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: Belmore, Nancy
Sent: Tuesday, March 15, 2011 11:53 AM
To: Taylor, Renee; Hudson, Sharon; Pulley, Deborah; Burns, Stephen; Borchardt, Bill; Brenner, Eliot; Akstulewicz, Brenda; Dyer, Jim; Virgilio, Martin; Cianci, Sandra; Weber, Michael
Cc: Schmidt, Rebecca; Powell, Amy
Subject: DETAILS ABOUT CONGRESSIONAL MEETINGS TODAY AND TOMORROW

This is further follow-up re my previous message (re van) - - -

The Chairman is having his murderboard at the Hill office today at 5:00. The office is located on the 7th floor at 10 G St. Invitees include: Eliot Brenner, Jim Dyer, Trip Rothschild, Josh, EDO reactor person—either Marty or Mike Weber according to Bill.

The Energy and Commerce hearing is tomorrow at 9:30. The Chr would like Eliot, Bill, JIM, Steve Burns and a severe accident reactor guy (According to Bill) at the morning hearing. The hearing is in 2123 Rayburn

Tomorrow afternoon there will be a second hearing/round table for EPW. That will be at 3:30 in Dirksen. Room TBD. The Chairman would like the same lineup except Jim doesn't have to come.

Nancy Belmore
Office of Congressional Affairs
U.S. Nuclear Regulatory Commission
nancy.belmore@nrc.gov
301-415-1776

From: Taylor, Renee
Sent: Tuesday, March 15, 2011 12:08 PM
To: Belmore, Nancy; Hudson, Sharon; Pulley, Deborah; Burns, Stephen; Borchardt, Bill; Brenner, Eliot; Akstulewicz, Brenda; Dyer, Jim; Virgilio, Martin; Cianci, Sandra; Weber, Michael
Cc: Schmidt, Rebecca; Powell, Amy
Subject: RE: Murderboard TODAY 5:00/Hearing tomorrow

That would be helpful, thanks.

From: Belmore, Nancy
Sent: Tuesday, March 15, 2011 11:41 AM
To: Taylor, Renee; Hudson, Sharon; Pulley, Deborah; Burns, Stephen; Borchardt, Bill; Brenner, Eliot; Akstulewicz, Brenda; Dyer, Jim; Virgilio, Martin; Cianci, Sandra; Weber, Michael
Cc: Schmidt, Rebecca; Powell, Amy
Subject: FW: Murderboard TODAY 5:00/Hearing tomorrow

Should I arrange a van for tomorrow morning?

Nancy Belmore
Office of Congressional Affairs
U.S. Nuclear Regulatory Commission
nancy.belmore@nrc.gov
301-415-1776

From: Schmidt, Rebecca
Sent: Tuesday, March 15, 2011 11:29 AM
To: Belmore, Nancy
Cc: Pace, Patti
Subject: Murderboard TODAY 5:00/Hearing tomorrow

Nancy – Can you figure out if they need transportation too? Can you send this to the invitees and their secretaries:

The Chairman is having his murderboard at the Hill office today at 5:00. The office is located on the 7th floor at 10 G St. Invitees include: Eliot Brenner, Jim Dyer, Trip Rothschild, Josh, EDO reactor person—either Marty or Mike Weber according to Bill.

The Energy and Commerce hearing is tomorrow at 9:30. The Chr would like Eliot, Bill, JIM, Steve Burns and a severe accident reactor guy (According to Bill) at the morning hearing. The hearing is in 2123 Rayburn

Tomorrow afternoon there will be a second hearing/round table for EPW. That will be at 3:30 in Dirksen. Room TBD. The Chairman would like the same lineup except Jim doesn't have to come.

From: Schmidt, Rebecca
Sent: Tuesday, March 15, 2011 12:22 PM
To: Ash, Darren; Brenner, Eliot
Subject: Re: Transcript

My understanding also. Thanks

From: Ash, Darren
To: Schmidt, Rebecca
Sent: Tue Mar 15 12:21:13 2011
Subject: Fw: Transcript

Closing the loop - no reply requested. Issue is closed.

From: Stewart, Sharon
To: Ash, Darren
Cc: Gusack, Barbara
Sent: Tue Mar 15 12:08:55 2011
Subject: Transcript

Darren,

Holly Harrington, OPA, requested ASLBP to provide a court reporter at the Congressional hearings tomorrow and for that court reporter to produce a transcript. As the Committee will provide a transcript, the request by OPA for court reporting services and the transcript at the Hearing has been cancelled.

ADM was asked by OPA to provide a videographer and a photographer at the hearing, which we will provide. I think this got confused with the request for the transcript.

Let me know if you need any additional information.

Sharon D. Stewart-Clark, Acting Director
Office of Administration
301/492-3500

From: Smith, Bertinia
Sent: Tuesday, March 15, 2011 12:55 PM
To: Adkison, Carol; Batkin, Joshua; Pearson, Laura; Schmidt, Rebecca
Subject: HSPD-12 BADGE ACTIVATION APPOINTMENT

Your HSPD-12 badge is ready for activation. Please email Susan Cusseaux for afternoon appointment and me for morning appointment for activation in room T-6G4. You must send an email with the date and time you would like to have your badge activated and please wait for a confirmation email back to you. The hours of operation are from 8:45am – 10:45am and 1:15pm – 3:45pm. Please have an 8-digit pin number ready, and you can't use 1-2-3-4-5-6-7-8 or reverse and also not your date of birth.

Bertinia Smith-Butler

From: Powell, Amy
Sent: Tuesday, March 15, 2011 1:09 PM
To: Muessle, Mary
Cc: Jacobs-Baynard, Elizabeth; Schmidt, Rebecca; Taylor, Renee
Subject: RE: House Hearing on March 16th and Briefing to the Senate Committee on EPW on March 14th

Mary –

I got your message that you are in a meeting. For tonight's 5pm hearing prep meeting with the Chairman, I believe we have what we need from OEDO. The Chairman's office asked Bill or his designee to be there. Renee and I are working on sorting out who that will be.

I think we're good – thanks!

Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Muessle, Mary
Sent: Tuesday, March 15, 2011 12:45 PM
To: Jacobs-Baynard, Elizabeth; Schmidt, Rebecca; Powell, Amy
Subject: RE: House Hearing on March 16th and Briefing to the Senate Committee on EPW on March 14th

I understand the Chairman prep is now downtown at 5:00. What kind of OEDO support do you need?
Thanks

Mary Muessle
Assistant for Operations - Acting
Office of the Executive Director for Operations
U.S. Nuclear Regulatory Commission
301-415-1703 office
301-415-2700 fax

From: Jacobs-Baynard, Elizabeth
Sent: Tuesday, March 15, 2011 12:44 PM
To: Ojeda, Jennifer; Decker, David; Dyer, Jim
Cc: Ash, Darren; Muessle, Mary; Andersen, James; Landau, Mindy; Golder, Jennifer; Smolik, George; Murray, Heather; Allwein, Russell; Hudson, Sharon; Rihm, Roger; Kasputys, Clare; Jacobs-Baynard, Elizabeth
Subject: RE: House Hearing on March 16th and Briefing to the Senate Committee on EPW on March 14th

Jenny:

Attached are the additional questions and answers for use at the FY 2012 Budget Hearing(s). Please let me know if you have any questions.

Thanks,

Liz

From: Ojeda, Jennifer

Sent: Thursday, March 10, 2011 10:16 AM

To: Jacobs-Baynard, Elizabeth; Decker, David; Dyer, Jim

Cc: Golder, Jennifer; Smolik, George; Allwein, Russell; Hudson, Sharon

Subject: House Hearing on March 16th and Briefing to the Senate Committee on EPW on March 14th

Attached are the following:

- 1) Latest slides for the FY 2012 Budget Briefing to the Senate Committee on EPW on March 14th
- 2) Latest questions and answers for the FY 2012 Budget Briefing to the Senate Committee on EPW on March 14th as well as for the FY 2012 Budget House Hearing on March 16th.

The OEDO is gathering the various schedules (licensing, fuel facility, etc) to add to the questions and answers.

Jenny Ojeda
Senior Program Analyst
OCFO/DPB/BAB
301-415-7599
T9D20

From: Ellis, Marv
Sent: Tuesday, March 15, 2011 3:08 PM
To: Taylor, Renee; Smolik, George; Golder, Jennifer; Powell, Marlon; Brown, Milton; Borchardt, Bill; Ash, Darren; Weber, Michael; Muessle, Mary; Virgilio, Martin; Hudson, Sharon; Matakas, Gina; Miles, Patricia; Buckley, Patricia; Owen, Lucy; Collins, Elmo; Satorius, Mark; Reyes, Luis; Casto, Chuck; Dapas, Marc; Kelley, Corenthis; Sheron, Brian; Boyce, Thomas (OIS); McCrary, Cheryl; Zimmerman, Roy; Wiggins, Jim; Leeds, Eric; Johnson, Michael; Haney, Catherine; Cohen, Miriam; Miller, Charles; Howard, Patrick; Greene, Kathryn; Doane, Margaret; Poole, Brooke; Schmidt, Rebecca; Brenner, Eliot; Vietti-Cook, Annette; Burns, Stephen; Hackett, Edwin; Jacobs-Baynard, Elizabeth; Kasputys, Clare; McCree, Victor; Dubose, Sheila
Cc: Administrative ServicesCenter; Telecom Contractor
Subject: Chairman's Budget Guidance

Importance: High

The Chairman's budget guidance meeting scheduled for Thursday 10-11:30 am is postponed until sometime next week. Sharon will coordinate a new time and date.

Thank you.

Marv Ellis
Administrative Assistant
Office of the Chief Financial Officer
U.S. Nuclear Regulatory Commission
T-9F6
301.415.7501
marv.ellis@nrc.gov

From: Brenner, Eliot
Sent: Tuesday, March 15, 2011 3:15 PM
To: Schmidt, Rebecca
Subject: Out of Office: Updated information for the Chairman

I will be out of the office until Thursday March 17. I am reading emails regularly and will respond as quickly as possible. If you need assistance, please call 301-415-8200.

From: Belmore, Nancy
Sent: Tuesday, March 15, 2011 3:37 PM
To: Borchardt, Bill; Burns, Stephen; Dyer, Jim; Uhle, Jennifer; Schaperow, Jason
Cc: Taylor, Renee; Pulley, Deborah; Hudson, Sharon; Ellis, Marv; Schmidt, Rebecca; Powell, Amy; Quesenberry, Jeannette
Subject: Transportation to Capitol Hill for 3/16/11

The following arrangements have been made for transportation to Capitol Hill:

Date: Wednesday, March 16, 2011
Leave NRC: 7:30 am
Location of Vehicle: **OWFN, P1**
Vehicle Type: 2010 Blue Van (7 passenger)
Driver: Mac (Cell:)
Destination: Rayburn House Office Building
Room: 2123
Hearing Time: 9:30 am
Return to NRC: After hearing

Nancy Belmore
Office of Congressional Affairs
U.S. Nuclear Regulatory Commission
nancy.belmore@nrc.gov
301-415-1776

From: Stricklin, Rebecca
Sent: Tuesday, March 15, 2011 4:16 PM
To: Evans, Carolyn; Lynch, James; Satorius, Mark; Loughheed, Patricia; Mitlyng, Viktoria; Bell, Hubert; Holody, Daniel; Barker, Allan; Pelke, Paul; Logaras, Harral; Leeds, Eric; Linn, Linda; Ashley, MaryAnn; Orth, Steven; DeFrancisco, Anne; McLaughlin, Marjorie; Zimmerman, Roy; Scott, Catherine; Gryglak, Magdalena; Campbell, Andy; McCrary, Cheryl; OEMAIL Resource; Pederson, Cynthia; Merzke, Daniel; Ariano, Carole; Hilton, Nick; Heck, Jared; RidsSecyMailCenter Resource; OCA Distribution; DRPIII; ROPreports Resource; OEWEB Resource; Borchardt, Bill; Virgilio, Martin; Hott, Christopher; Itzkowitz, Marvin; Boger, Bruce; Harrington, Holly; Williams, Mona; Chandrathil, Prema; Bakhsh, Sarah; RidsNrrDorLp13-2 Resource; RidsNrrPMByron Resource; RidsNrrDirIrib Resource; DRSIII
Cc: Buckley, Patricia; Stricklin, Rebecca; Tomczak, Tammy; Hasan, Nasreen
Subject: EA-11-014, Byron, Final Significance Determination of White Finding with Assessment Followup and Notice of Violation
Attachments: EA-11-014 Byron final action.docx

The subject document has been completed and submitted to be declared in ADAMS. A Word copy of the document is attached.

EA-11-014, Byron; ML110740619 (Public) - licensee notified 3/14/11.

March 14, 2011

EA-11-014

Mr. Michael J. Pacilio
Senior Vice President, Exelon
Generation Company, LLC
President and Chief Nuclear
Officer (CNO), Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

**SUBJECT: BYRON STATION, UNIT 2; FINAL SIGNIFICANCE DETERMINATION
OF WHITE FINDING, WITH ASSESSMENT FOLLOWUP AND NOTICE OF
VIOLATION; NRC INSPECTION REPORT NO. 05000455/2011012**

Dear Mr. Pacilio:

This letter provides you the final significance determination of the preliminary White finding discussed in our previous communication dated February 11, 2011, which included the subject inspection report. The finding involved the failure to ensure that a flange connection on the upper lube oil cooler of the 2A diesel generator was correctly torqued, following maintenance. This led to the 2A diesel generator being required to be shut down when a significant oil leak developed during routine monthly surveillance testing on November 17, 2010.

In a telephone conversation with Mr. Eric Duncan, Chief, U.S. Nuclear Regulatory Commission (NRC) Region III, Reactor Projects Branch 3, on February 18, 2011, Mr. Brad Adams, Byron Plant Manager, indicated that Exelon did not contest the characterization of the risk significance of this finding and that you declined your opportunity to discuss this issue in a Regulatory Conference or to provide a written response. Exelon later followed this verbal notification with a letter dated February 23, 2011.

After considering the information developed during the inspection, the NRC has concluded that the finding is appropriately characterized as White, a finding of low to moderate risk significance. According to NRC Inspection Manual Chapter (IMC) 0609, and as acknowledged in the February 23, 2011, letter, appeal rights only apply to those licensees that have either attended a Regulatory Conference or submitted a written response to the preliminary determination letter.

The NRC has also determined that the failure to have appropriate acceptance criteria to ensure that the flange connection on the upper lube oil cooler of the 2A diesel generator was correctly torqued during maintenance is a violation of Title 10 of the Code of Federal Regulations (10 CFR) Part 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," as cited in the enclosed Notice of Violation (Notice). The circumstances surrounding the violation were described in detail in the subject inspection report. In accordance with the NRC Enforcement Policy, the Notice is considered escalated enforcement action because it is associated with a White finding.

M. Pacillo

-2-

The NRC has concluded that information regarding the reason for the violation, the corrective actions taken and planned to be taken to correct the violation and prevent recurrence, and the date when full compliance was achieved, is already adequately addressed on the docket in Inspection Report No. 05000455/2011011. Therefore, you are not required to respond to this letter unless the description therein does not accurately reflect your corrective actions or your position. In that case, or if you choose to provide additional information, you should follow the instructions specified in the enclosed Notice.

As a result of our review of Byron's performance, including this White finding, we have assessed you to be in the Regulatory Response column of the NRC's Action Matrix. Therefore, we plan to conduct a supplemental inspection using Inspection Procedure 95001, "Inspection for One or Two White Inputs in a Strategic Performance Area," when your staff has notified us of your readiness for this inspection. This inspection procedure is conducted to provide assurance that the root cause and contributing causes of risk significant performance issues are understood, the extent of condition and the extent of cause are identified, and the corrective actions are sufficient to prevent recurrence.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response, if any, will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction. The NRC also includes significant enforcement actions on its Web site at <http://www.nrc.gov/reading-rm/doc-collections/enforcement/actions>.

Sincerely,

/RA/

Mark A. Satorius
Regional Administrator

Docket No. 050-00455
License No. NPF-66

Enclosure:
Notice of Violation

cc w/encl: Distribution via ListServ

DK 855 of 1892

NOTICE OF VIOLATION

Exelon Generation Company, LLC
Byron Station Unit 2

Docket No. 050-00455
License No. NPF-66
EA-11-014

During a U.S. Nuclear Regulatory Commission (NRC) inspection conducted from January 1 to February 7, 2011, a violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy, the violation is listed below:

Title 10 of the Code of Federal Regulations (10 CFR), Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," states, in part, that instructions, procedures, or drawings shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished. Work Order 1206254, "Clean Tube Side of Lube Oil Coolers," dated January 10, 2010, was a quality document that the licensee used to perform maintenance on the safety-related 2A diesel generator upper lube oil cooler. Technical Specification 3.8.1.b limiting condition for operation requires two diesel generators to be operable and capable of supplying the onsite Class 1E alternating current electrical power distribution system during Modes 1 through 4. Action Statement 3.8.1.B.5 requires, in part, that if one diesel generator is inoperable, then it must be restored to operable within 14 days and 3.8.1.G requires, in part, that if the required action for 3.8.1.B.5 was not met, then the plant was to be in Mode 3 within 6 hours and Mode 5 within 36 hours.

Contrary to the above, Work Order 1206254 did not contain appropriate quantitative or qualitative acceptance criteria to ensure upper lube oil cooler operability prior to returning the 2A diesel generator to service on January 17, 2010. Specifically, work order package 1206254 did not contain a final torque verification to ensure that the 2A diesel generator upper lube oil cooler spool piece connections were torqued to the required values. As a result, the torqued spool piece flange connection to the upper lube oil cooler did not meet the minimum torque ranges specified in the work order, and, subsequently, during routine testing on November 17, 2010, the flange connection on the 2A diesel generator upper lube oil cooler failed. The 2A diesel generator was inoperable since January 17, 2010, and, because the licensee was not aware of the inoperability, the allowed outage time in Action Statement 3.8.1.B.5 of 14 days was exceeded and the conditions of 3.8.1.G were not followed.

This violation is associated with a White Significance Determination Process finding.

The NRC has concluded that information regarding the reason for the violation, the corrective actions taken and planned to be taken to correct the violation and prevent recurrence, and the date when full compliance was achieved, is already adequately addressed on the docket in Inspection Report No. 05000455/2011011. However, you are required to submit a written statement or explanation pursuant to 10 CFR 2.201 if the description therein does not accurately reflect your corrective actions or your position. In that case, or if you choose to respond, clearly mark your response as a "Reply to a Notice of Violation, EA-11-014," and send it to the

ENCLOSURE

DK 856 of 1892

Notice of Violation

-2-

U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Regional Administrator and the Enforcement Officer, Region III, 2443 Warrenville Road, Suite 210, Lisle, IL 60532, within 30 days of the date of the letter transmitting this Notice of Violation (Notice).

If you contest this enforcement action, you should also provide a copy of your response, with the basis for your denial, to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

If you choose to respond, your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. Therefore, to the extent possible, the response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction.

In accordance with 10 CFR 19.11, you may be required to post this Notice within two working days of receipt.

Dated this 14th day of March 2011

ENCLOSURE

DK 857 of 1892

The NRC has concluded that information regarding the reason for the violation, the corrective actions taken and planned to be taken to correct the violation and prevent recurrence, and the date when full compliance was achieved, is already adequately addressed on the docket in Inspection Report No. 0500455/2011011. Therefore, you are not required to respond to this letter unless the description therein does not accurately reflect your corrective actions or your position. In that case, or if you choose to provide additional information, you should follow the instructions specified in the enclosed Notice.

As a result of our review of Byron's performance, including this White finding, we have assessed you to be in the Regulatory Response column of the NRC's Action Matrix. Therefore, we plan to conduct a supplemental inspection using Inspection Procedure, 95001, "Inspection for One or Two White Inputs in a Strategic Performance Area," when your staff has notified us of your readiness for this inspection. This inspection procedure is conducted to provide assurance that the root cause and contributing causes of risk significant performance issues are understood, the extent of condition and the extent of cause are identified, and the corrective actions are sufficient to prevent recurrence.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response, if any, will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction. The NRC also includes significant enforcement actions on its Web site at <http://www.nrc.gov/reading-rm/doc-collections/enforcement/actions>.

Sincerely,
/RA/

Mark A. Satorius
Regional Administrator

Docket No. 050-00455
License No. NPF-66

Enclosure:
Notice of Violation

cc w/encl: Distribution via ListServ

DISTRIBUTION:

See next page

FILE NAME: G:\ORAI\EICS\ENFORCEMENT\Enforcement Cases 2011\EA-11-014 Byron\EA-11-014 Byron final action.docx

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NAME	Lougheed	Duncan	West	Hott for Zimmerman ¹	Orth	Satorius
DATE	03/9/11	03/9/11	03/14/11	03/07/11	03/14/11	03/14/11

OFFICIAL RECORD COPY

¹ OE concurrence received via e-mail from C. Hott on March 07, 2011.

Letter to Michael J. Pacilio from Mark A. Satorius, dated March 14, 2011

SUBJECT: BYRON STATION, UNIT 2; FINAL SIGNIFICANCE DETERMINATION
OF WHITE FINDING, WITH ASSESSMENT FOLLOWUP AND NOTICE OF
VIOLATION; NRC INSPECTION REPORT NO. 05000455/2011012

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DRPIII
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From: OPA Resource
Sent: Friday, April 15, 2011 4:40 PM
To: Ash, Darren; Barkley, Richard; Batkin, Joshua; Bell, Hubert; Belmore, Nancy; Bergman, Thomas; Bollwerk, Paul; Bonaccorso, Amy; Borchardt, Bill; Bozin, Sunny; Brenner, Eliot; Brock, Terry; Brown, Boris; Bubar, Patrice; Burnell, Scott; Burns, Stephen; Carpenter, Cynthia; Chandrathil, Prema; Clark, Theresa; Collins, Elmo; Couret, Ivonne; Crawford, Carrie; Cutler, Iris; Dacus, Eugene; Dapas, Marc; Davis, Roger; Dean, Bill; Decker, David; Dricks, Victor; Droggitis, Spiros; Flory, Shirley; Franovich, Mike; Gibbs, Catina; Haney, Catherine; Hannah, Roger; Harbuck, Craig; Harrington, Holly; Hasan, Nasreen; Hayden, Elizabeth; Holahan, Gary; Holahan, Patricia; Holian, Brian; Jacobssen, Patricia; Jaczko, Gregory; Jasinski, Robert; Jenkins, Verlyn; Johnson, Michael; Jones, Andrea; Kock, Andrea; Kotzalas, Margie; Ledford, Joey; Lee, Samson; Leeds, Eric; Lepre, Janet; Lew, David; Lewis, Antoinette; Loyd, Susan; Magwood, William; McCrary, Cheryl; McGrady-Finneran, Patricia; McIntyre, David; Mensah, Tanya; Mitlyng, Viktoria; Monninger, John; Montes, David; Nieh, Ho; Ordaz, Vonna; Ostendorff, William; Owen, Lucy; Powell, Amy; Quesenberry, Jeannette; Reddick, Darani; Regan, Christopher; Reyes, Luis; Riddick, Nicole; RidsSecyMailCenter Resource; Riley (OCA), Timothy; Rohrer, Shirley; Samuel, Olive; Satorius, Mark; Schaaf, Robert; Schmidt, Rebecca; Scott, Catherine; Screnci, Diane; Shaffer, Vered; Shane, Raeann; Sharkey, Jeffrey; Sheehan, Neil; Sheron, Brian; Siurano-Perez, Osiris; Steger (Tucci), Christine; Svinicki, Kristine; Tabatabai, Omid; Tannenbaum, Anita; Taylor, Renee; Temp, WDM; Uhle, Jennifer; Uselding, Lara; Vietti-Cook, Annette; Virgilio, Martin; Virgilio, Rosetta; Walker-Smith, Antoinette; Weaver, Doug; Weber, Michael; Weil, Jenny; Werner, Greg; Wiggins, Jim; Williams, Evelyn; Zimmerman, Roy; Zorn, Jason
Subject: RI Press Release: NRC to Hold Public Meeting on April 28 In Shippingport, Pa., to Discuss Annual Assessment of Beaver Valley Nuclear Plant
Attachments: 11-006.i.docx

Office of Public Affairs
US Nuclear Regulatory Commission
301-415-8200
opa.resource@nrc.gov



NRC NEWS

U.S. NUCLEAR REGULATORY COMMISSION

Office of Public Affairs, Region I

475 Allendale Road, King of Prussia, Pa. 19406

E-mail: opal@nrc.gov

Site: www.nrc.gov

Blog: <http://public-blog.nrc-gateway.gov>

No. I-11-006

Contact: Diane Screnci, 610/337-5330

Neil Sheehan, 610/337-5331

April 15, 2011

E-mail: opal@nrc.gov

NRC TO HOLD PUBLIC MEETING ON APRIL 28 IN SHIPPINGPORT, PA., TO DISCUSS ANNUAL ASSESSMENT OF BEAVER VALLEY NUCLEAR PLANT

Nuclear Regulatory Commission staff will hold a public meeting on Thursday, April 28, regarding the agency's annual assessment of safety performance for the Beaver Valley nuclear power plant during 2010.

The meeting is scheduled to begin at 6 p.m. at the Shippingport Community and Municipal Building, at 164 State Road 3016 in Shippingport. Prior to the session's conclusion, there will be an opportunity for members of the public to ask questions of the NRC staff regarding the plant's performance, as well as the NRC's oversight of the facility.

Beaver Valley, which is the site of two operating pressurized-water reactors, is located in Shippingport (Beaver County). It is owned and operated by FirstEnergy Nuclear Operating Co.

"Our Annual Assessment reviews allow us to step back and gauge whether the nuclear power plants we regulate are on the right track in terms of performance and adhering to the highest levels of safety," NRC Region I Administrator Bill Dean said. "Once we've completed these evaluations, we reach out to the public to share that information and to receive their feedback at a location near each plant. We welcome and value these exchanges."

The NRC utilizes a combination of color-coded inspection findings and performance indicators to measure plant performance. The colors start with "green", representing very low safety significance, and increase to "white", "yellow" or "red", commensurate with the significance of the issues involved.

Overall, Beaver Valley operated safely during 2010. At the conclusion of last year, as assessed by the NRC Reactor Oversight Process, there were no performance indicators for the plant that were other than "Green" and no inspection findings that were "Greater than Green." Therefore, for the remainder of 2011, Beaver Valley will continue to receive the very detailed inspection regime used by the NRC for plants that are operating well.

Routine inspections are carried out by two NRC Resident Inspectors assigned to the plant and by inspection specialists from the agency's Region I Office in King of Prussia, Pa. In 2010, the NRC devoted approximately 4,600 hours to inspection of the facility and related activities, including three major team inspections. Among the areas at Beaver Valley being inspected this year are emergency preparedness, radiological safety and the plant's problem identification and resolution program.

The agency issues its review of performance at specific plants twice a year. Inspection findings and performance indicators are also updated on the NRC's web site, www.nrc.gov, each quarter. Following the release of the annual performance reviews every March, the public is provided with an opportunity to discuss the results. The meetings, which are held in the vicinity of the plant, are in keeping with the NRC's commitment to transparency and openness with regard to its activities.

The annual assessment letter for Beaver Valley is available on the NRC web site at: http://www.nrc.gov/NRR/OVERSIGHT/ASSESS/LETTERS/bv_2010q4.pdf. The notice for the public meeting is available in the NRC's Agencywide Documents Access and Management System (ADAMS) under accession number ML110980391. ADAMS is available at: <http://www.nrc.gov/reading-rm/adams.html>. Help in using ADAMS can be obtained via the NRC's Public Document Room at 1-800-397-4209 or 301-415-4737, or by e-mail at PDR.Resources@NRC.GOV.

Current performance information for Beaver Valley Unit 1 is available on the NRC web site at: http://www.nrc.gov/NRR/OVERSIGHT/ASSESS/BV1/bv1_chart.html. Current performance information for Beaver Valley Unit 2 is available on the NRC web site at: http://www.nrc.gov/NRR/OVERSIGHT/ASSESS/BV2/bv2_chart.html.

###

News releases are available through a free *listserv* subscription at the following Web address: <http://www.nrc.gov/public-involve/listserver.html>. The NRC homepage at www.nrc.gov also offers a SUBSCRIBE link. E-mail notifications are sent to subscribers when news releases are posted to NRC's website.

From: Powell, Amy
Sent: Tuesday, March 15, 2011 10:52 PM
To: Borchardt, Bill; Dyer, Jim; Burns, Stephen
Cc: Schmidt, Rebecca
Subject: FYI re: Rayburn building

Becky and I are going straight to the Hill, so we will meet you down there. In case you have not experienced Rayburn, the second number indicates the floor that the room is on, so the hearing room – 2123 – is on the first floor. The only outlier is the basement, which is where the cafeteria is so if there is time you might want to know that.

See you in the am,
AP

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: do_not_reply@ilearnnrc.plateau.com
Sent: Wednesday, March 16, 2011 3:33 AM
To: Schmidt, Rebecca
Subject: iLearn Course Due Date Notification

Name	Course	Due Date	Curriculum
SCHMIDT, REBECCA L	Course Ethics Training Required in 2011 for Employees who File SF-278 (Web-Based)	5/31/2011 11:59 PM ET	

Why did you get this message?

Users: You received this message because course(s) with due dates were added to your iLearn Learning Plan. This message is initially sent 90 days prior to the course(s) due date and will continue every 21 days until you complete the above course(s) or the course(s) are removed from your Learning Plan.

For information on how courses are added to or removed from your Learning Plan please contact your training coordinator.

Supervisors: You received this message because the indicated employee(s) have course(s) with due dates on their iLearn Learning Plan. This message is initially sent 90 days prior to the course(s) due date and will continue every 21 days until the above course(s) are completed or removed from the user's Learning Plan.

For information on how you can view your employee's upcoming training in iLearn, please refer to the Supervisor's job aid on using the My Employees Dashboard:

https://ilearnnrc.plateau.com/content/nrc/help_guide/docs/output/supervisor/employees_dashboard.html

For additional information please contact your training coordinator.

The name and contact information for training coordinators may be found at:
<http://papaya.nrc.gov/Training/coordinators.cfm>

Please tell us whether this notification was helpful by clicking on the following link.

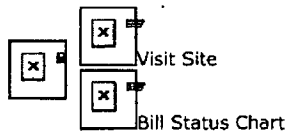
<https://www.surveymonkey.com/s/6M25CCR>

 Please DO NOT REPLY. This email address is automated and unattended

[Go to Learning Plan](#) | [Go to Current Registrations](#)

From: CQ Budget Tracker <budgettracker-owner@cqrollcall.com>
Sent: Wednesday, March 16, 2011 7:02 AM
To: Schmidt, Rebecca
Subject: CQ Budget Tracker Newsletter

x



Chuck Conlon, Editor, budget@cq.com



CR Passes House Despite Growing Opposition

The House on Tuesday passed a three-week extension of stopgap funding, with Republicans needing the votes of Democrats to offset GOP defections.

The extension passed by a 271-158 vote, with 85 Democrats joining 186 Republicans in support of the measure (H J Res 48). A total of 54 Republicans opposed the measure as conservatives expressed their dismay that a final deal to deeply cut spending had not yet been reached, and that the extension did not include any policy provisions such as those to bar funding of Planned Parenthood or the health care overhaul law. Only six Republicans voted against the last CR extension just two weeks ago. Opposition among Democrats also increased, with a most Democrats opposing the extension, 85-104. Two weeks ago, the Democrats' vote on the earlier extension was 104-85, almost exactly the opposite of yesterday's vote. The Senate is expected to take up the new extension sometime Thursday; current stopgap funding expires Friday night.

[CQ Today Story](#)

[CQ Floor Vote](#) | [Complete Bill Coverage](#) (including votes on the previous CR)

The vote signals continued difficulties ahead in finding a compromise on funding for the rest of the year, as a growing number of members on both sides of the aisle call for an end to short-term CR extensions. House Minority Whip Steny H. Hoyer, D-Md., argued that Democrats had already agreed to substantial cuts: \$10 billion below current funding when the bill's \$6 billion cut is added to the reduction made by the previous CR extension, and \$51 billion below President Obama's discretionary spending request for fiscal 2011. "The problem those of us have on this side of the aisle is, it is not enough for a large number of your folks," Hoyer said on the floor, addressing Republicans. "We know the agreement is going to be someplace in between where you are and where we are. We know that," Hoyer said. "But what we don't know is what you can pass. What you don't know is what you can pass. You don't know what your caucus will do."

[CQ Today Story](#)

House Speaker John A. Boehner, R-Ohio, faces a dilemma in that he



Updated 12:13 a.m., Wednesday 3/16

Short-Term CR



The House on Tuesday passed the measure (H J Res 48) by a 271-158 vote. It would extend stopgap funding by three weeks while cutting current spending by \$6 billion. The



Senate may take it up Thursday. [CQ Today Story](#) | [Complete Bill Coverage](#) **FY 2011 Spending / Cuts**



The parties remain more than \$50 billion apart on spending cuts for the current fiscal year. Discussions among Republicans, Democrats and the White House are reportedly ongoing. [Complete Bill Coverage](#)

will alienate many of his conservative colleagues and require Democratic votes to pass a final product if he tries to chart a middle course toward compromise. But if he insists on a final deal with the spending cuts and policy provisions similar to [HR 1](#) in order to mollify those GOP conservatives, it will make it much more difficult to reach a compromise. For the time being, Republicans continue to argue that Obama and Senate Democrats need to first make their position clear with regard to spending levels, in order to set the parameters for negotiations. "The people's House has taken a clear position in the form of [HR 1](#), which passed through an open process and received more votes in the Senate than Democrats' own proposal," Boehner said in a statement. "It's up to the Senate and the White House to offer a credible plan to fund the government for the rest of the fiscal year while delivering the spending cuts Americans are demanding." White House Press Secretary Jay Carney said after the House vote, "It is time for us to come together, find common ground and resolve this issue in a sensible way. . . . We have already met Republicans halfway, and we are optimistic that Congress can get this done."

Statements & Releases: [White House](#) | [Boehner](#) | [Cantor](#) | [Pelosi](#) | [Hoyer](#) | [Rogers](#) | [Schumer](#)

Shutdown politics may be playing a role in the rising GOP opposition to short-term CR extensions, despite the fact each extension cuts billions of dollars in spending. A Washington Post-ABC News poll released Tuesday found that while 63 percent of Americans believe a government shutdown would be "a bad thing," among Republicans and GOP-leaning independents who describe themselves as "very conservative," 61 percent say a government shutdown would be good, the Post reported. Some House Republicans urged their colleagues to force an immediate showdown over spending and social policy, with Indiana's Mike Pence continuing a theme he began last week, saying "It's time to pick a fight." Iowa's Steve King said, "the House can draw the line" by including policy language to prevent funding of the health care overhaul law. Said King, "I'm willing to face the president because if we are not willing to face the president, he will get exactly everything he's willing to fight for. That means we have to confront the idea of the president eventually shutting the government down or give him what he wants." With a growing number of lawmakers expressing dissatisfaction with short-term CRs and Republicans wanting quick action on spending cuts and policy provisions, the possibility of a government shutdown may increase when the new CR expires on April 8 unless negotiators are able to reach agreement by then.

[Washington Post Story](#)

The measure passed by the House would cut current spending by \$6 billion, partly by reducing or terminating 25 federal programs. Those program cuts and terminations would save \$3.5 billion, with \$1.7 billion of that coming from a rescission of fiscal 2010 funding provided for the decennial census, which has been completed. Most of the cuts and terminations were proposed by Obama in his fiscal 2012 budget, or were included by Senate Democrats in their recent alternative CR proposal. Another \$2.6 billion in savings comes from reducing or eliminating accounts where funds had been earmarked for 2010 in the Agriculture, Commerce-Justice-Science, Financial Services, and Interior-Environment spending bills. Major reductions include \$1 billion for GSA building construction, repair and alterations activities, \$194 million from the Community Oriented Policing Services (COPS) program, \$185 million from Byrne law enforcement grants, \$91 billion from Juvenile Justice programs, and \$172 million from EPA's Tribal Assistance Grants program.

[House Appropriations Summary](#)

SMALL-BUSINESS BILL THE NEW PLATFORM FOR 'TEST' VOTES?: The small-business research reauthorization measure ([S 493](#)) now being considered on the Senate floor may become a forum for lawmakers to take test votes on policy provisions that are at the center of controversy in the debate over spending for the current fiscal year.

Numerous policy amendments similar to those included in [HR 1](#) might be voted on in coming days — and if they fail, that could send a message to House Republicans that there is not sufficient support in the Senate. (Senate leaders similarly voted last week on the House-passed spending cut bill and a Democratic alternative to demonstrate that neither could garner the 60 votes needed to pass.) Minority Leader Mitch McConnell, R-Ky., will be seeking a vote on his amendment to bar EPA regulation of greenhouse gases, and Kay Bailey Hutchison, R-Texas, will be offering an amendment to delay implementation of the health care overhaul law until pending lawsuits are resolved. Jim DeMint, R-S.C., has filed several amendments that mirror provisions in [HR 1](#), such as language to bar federal funding of Planned Parenthood and of the Corporation for Public Broadcasting. Other amendments similar to [HR 1](#) provisions that have been filed include those by Marco Rubio, R-Fla., to rescind all unobligated stimulus funding and to bar EPA from enforcing certain environmental standards.

Republicans have filed a number of other budget-related amendments to the small-business bill as well. Those include: one from Rand Paul of Kentucky to cut \$200 billion in current year spending; one from John Cornyn of

Texas to create a bipartisan commission to eliminate wasteful spending; one from David Vitter of Louisiana to require the government to sell off unused land, buildings and facilities; and one from John McCain of Arizona to reduce the number of printed volumes of the president's annual budget each year. Oklahoman Tom Coburn has filed seven amendments to save a cumulative \$20 billion, including by ending the federal ethanol subsidy (\$6 billion in savings), eliminating funds for "leftover" earmarks (\$7.3 billion), reducing government purchases of vehicles (\$900 million), and eliminating duplicate federal programs that were identified by GAO (\$5 billion).

Background on Coburn Amendments

Vermont Independent Bernard Sanders will be offering an amendment to create a procedural point of order that would make it more difficult to modify Social Security. Under his proposal, any legislation that would change the retirement age or reduce benefits, or which would divert Social Security funds into private accounts, would be subject to a point of order that could be waived only by a two-thirds vote. Liberals are concerned about GOP efforts in the House to write a budget resolution that addresses growing entitlement spending and about bipartisan efforts in the Senate to develop comprehensive debt reduction legislation. They note that Social Security has not contributed to the nation's current deficit problems.

CQ Today Story

IT'S OPEN SEASON FOR 'VIEWS & ESTIMATES': Congressional committees have begun approving their annual "views and estimates" letters for submission to the House and Senate Budget Committees.

The letters outline an authorizing committee's perspective regarding the president's budget proposal and recommendations on funding for programs under their jurisdiction. Sometimes they even suggest how chronic woes within the agencies they oversee should be addressed. The recommendations in the letters provide input to the House and Senate Budget committees as those panels develop the annual budget resolution. The recommendations made by authorizing committees, however, are not binding on the Budget panels. Under the Budget Act they must be submitted to the respective Budget Committee within six weeks of when the president's budget has been submitted, although the Budget panels frequently ask that they be submitted earlier.

Three House panels approved and released their views and estimates letters yesterday: Agriculture, Financial Services, and Small Business. Citing the need for fiscal discipline, Financial Services by party-line vote

approved a letter opposing Obama's proposal to boost spending for the Securities and Exchange Commission to carry out its new responsibilities under last year's financial system overhaul law. Republicans said the agency should not get additional funding and staff "until the current SEC chairman and management has shown concrete progress in correcting past failures and implementing clear and verifiable plans for fulfilling the additional responsibilities the commission has been granted." The Small Business Committee approved its letter by voice vote, and called for cutting \$100 million from the SBA's budget and eliminating 14 programs it deemed "duplicative." Panel Democrats said they agreed with some of the eliminations, but not all. Democrats on both Financial Services and Small Business said they will issue their own recommendation letters. House Agriculture, meanwhile, approved a bipartisan letter that outlined the panel's plans for preparing to write a new five-year farm bill. The committee said it intends to audit every mandatory program under its jurisdiction to determine which should be prioritized and which should be eliminated or consolidated. The panel asked House Budget, in considering agriculture funding levels in its budget resolution, to take into consideration numerous multi-year reductions in funding that have already been made to its programs.

CQ Committee Coverage Stories: [Agriculture](#) | [Financial Services](#) | [Small Business](#)

V&E Letters: [Agriculture](#) | [Financial Services](#) | [Small Business](#)
In Brief

• **GOP: Pimco Sell-Off Signals Need for Federal Cut-a-thon:** House

Republicans are looking to showcase a top investment manager's decision to spurn Treasury bonds as they try to rally support for deep spending cuts. [Full Story](#)

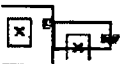
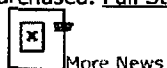
• **Funding Uncertainty Affecting Courts, Judge Says:** The chairman of the federal judiciary's policy-making body warned Tuesday of a "dire situation" should stopgap funding continue or the budget standoff lead to a government shutdown.

[Full Story](#)

• **Lawmaker Urges USDA to Emphasize Consequences of Food Safety**

Budget Cuts: The Obama administration needs to be more "articulate" in telling the public what's at stake if congressional Republicans reduce federal spending to fiscal 2008 levels, a Democratic House appropriator said Tuesday. [Full Story](#)

• **With Prices on the Rise, Panel Studies F-35 Procurement Practices:** House Armed Services Committee members said Tuesday they are watching with concern the rising price tag of the F-35 Joint Strike Fighter, the costliest weapon the Pentagon has ever purchased. [Full Story](#)



New bill information since Sunday, Mar. 13

See new information since [yesterday](#) | [today](#) | [past 4 hours](#) | [past 7 days](#)

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new [written testimony](#) [transcripts](#)
- **Commerce-Justice-Science** [complete coverage](#)
new [written testimony](#) [transcripts](#)
- **Homeland Security** [complete coverage](#)
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Issue-Id: 14938006:budgettracker:71

From: CQ Budget Tracker <budgettrackerlite-owner@cqrollcall.com>
Sent: Wednesday, March 16, 2011 7:07 AM
To: Schmidt, Rebecca
Subject: CQ BudgetTracker Newsletter

CQ BudgetTracker Plain Text Newsletter
March 16, 2011

CR Passes House Despite Growing Opposition

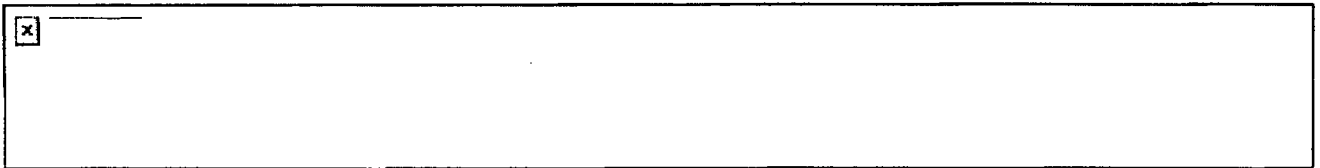
The House on Tuesday passed a three-week extension of stopgap funding, with Republicans needing the votes of Democrats to offset GOP defections.

<http://www.cq.com/fetchNewsletterEdition.do?editionid=17391>

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Issue-Id: 14938006:budgettrackerlite:74

From: Roll Call <rollcall@e.rollcall.com>
Sent: Wednesday, March 16, 2011 8:02 AM
To: Schmidt, Rebecca
Subject: Latest News From Roll Call Politics



Wednesday, Mar. 16, 2011

Politics



[Labor Brawl Lands on K Street](#)



[Portman Is GOP's Point Man in Ohio](#)



[Nevada Republicans Wary of Angle House Bid](#)



[Colleagues Raise Campaign Funds for Giffords](#)



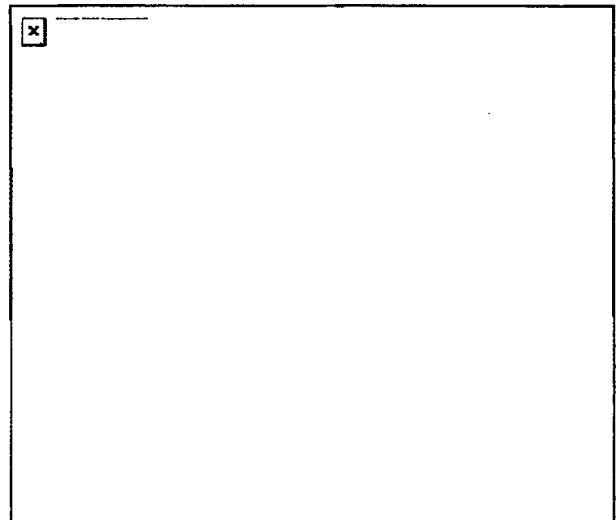
[Corwin Going on TV in N.Y. Before Dems Have Nominee](#)



[Heller Hosting Fundraiser for Senate Bid](#)



[Dean Heller Makes Senate Bid Official](#)



Labor Brawl Lands on K Street

In past years, the annual Washington fundraiser for Wisconsin Republicans had largely gone unnoticed. But the event slated for this evening at the BGR Group lobbying and public relations firm has been thrust into the national spotlight as ideological groups and political parties seek the advantage in the tempest over labor rights in Wisconsin. [Full Story](#)

Portman Is GOP's Point Man in Ohio

Sen. Rob Portman is working aggressively to help Republicans take back Ohio from President Barack Obama in 2012, and in the process developing connections with top GOP contenders who could put him on the short list for the vice-presidential nomination. [Full](#)

Story

Nevada Republicans Wary of Angle House Bid

Nevada Republicans want Sharron Angle to sit this one out. The 2010 Senate candidate is rumored to be strongly considering a bid for Rep. Dean Heller's 2nd district seat now that he is officially running for Senate, and party operatives worry she could put the most Republican district in the state at risk. [Full Story](#)

Colleagues Raise Campaign Funds for Giffords

House Minority Leader Nancy Pelosi (D-Calif.) and several other Democratic lawmakers attended a fundraiser Tuesday night for Rep. Gabrielle Giffords that collected more than \$125,000, according to a Democratic lobbyist who was at the event. [Full Story](#)

Corwin Going on TV in N.Y. Before Dems Have Nominee

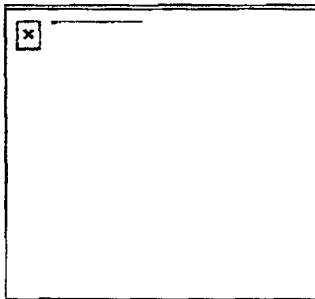
Jane Corwin, the GOP nominee in western New York's looming special election, will begin running television advertising Wednesday. [Full Story](#)

Heller Hosting Fundraiser for Senate Bid

Rep. Dean Heller's nascent Senate campaign has scheduled a March 28 fundraiser at an upscale Las Vegas restaurant that features a host committee of prominent Nevada Republican donors and the individual who served as Sen. John Ensign's executive director at the National Republican Senatorial Committee. [Full Story](#)

Dean Heller Makes Senate Bid Official

Nevada Republican will seek Senate seat held by retiring Sen. John Ensign. [Full Story](#)



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From: Kron, Arthur, CIV, OSD-POLICY-DTSA -
Sent: Wednesday, March 16, 2011 8:40 AM
To: Schmidt, Rebecca
Subject: Reductions!

(b)(6)

Looks like OSD Comptroller is losing six SES positions in the latest DoD efficiencies plan.

Art Kron
Negotiations and Liaison Division
Defense Technology Security Administration
703-325-4235

From: Adobe Government at Carahsoft <adobe@carahsoft.com>
Sent: Wednesday, March 16, 2011 9:39 AM
To: Schmidt, Rebecca
Subject: Adobe Government Technology Summit - June 23, 2011 - Save the Date!

To view an online version of this email, click [here](#).



SAVE THE DATE!

Adobe and Carahsoft are bringing the government IT community together with industry experts for an interactive, solution-focused technology summit, highlighting the features and benefits of Adobe products and services.

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We hope you will [mark your calendar](#) for this unique opportunity to discover what other government agencies are doing with Adobe products and learn about the latest and greatest in Adobe technology. Please look for a formal invitation to follow and we hope to see you on June 23, 2011 in Arlington, VA!

Questions? Contact Us.

Adobe Government at Carahsoft
877-99-ADOBE (Toll Free)
adobe@carahsoft.com

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Save the Date!

Date:
Thursday, June 23, 2011

Time:
7:30 AM EDT - 5:30 PM EDT

Location:
Crystal Gateway Marriott
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From: Droggitis, Spiros
Sent: Wednesday, March 16, 2011 10:39 AM
To: Schmidt, Rebecca
Subject: Re: Insightful questions

She's talking to Raeann now.

----- Original Message -----

From: Schmidt, Rebecca
To: Droggitis, Spiros
Sent: Wed Mar 16 10:38:12 2011
Subject: Re: Insightful questions

Briefing today. Did Laura have insightful questions

----- Original Message -----

From: Droggitis, Spiros
To: Schmidt, Rebecca
Sent: Wed Mar 16 10:37:26 2011
Subject: Re: Insightful questions

Rush and all. Briefing now today? I misinformed the ET that it was tomorrow.

----- Original Message -----

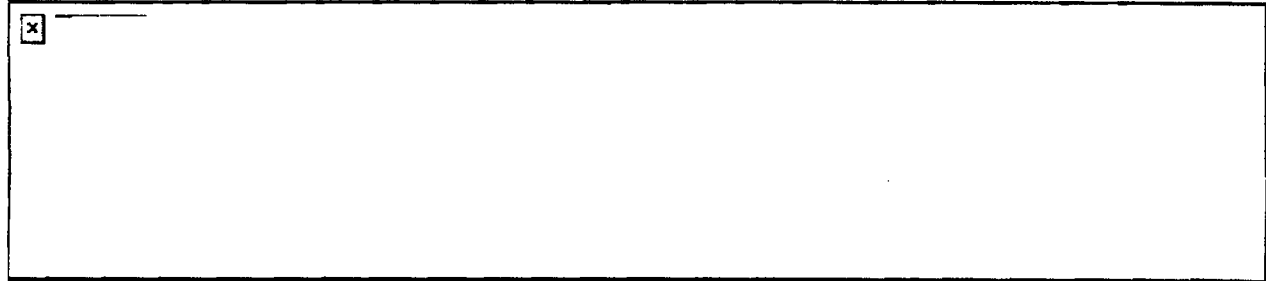
From: Schmidt, Rebecca
To: Droggitis, Spiros
Sent: Wed Mar 16 10:35:35 2011
Subject: Re: Insightful questions

What?

----- Original Message -----

From: Droggitis, Spiros
To: Schmidt, Rebecca; Powell, Amy
Sent: Wed Mar 16 10:15:59 2011
Subject: Insightful questions

From: dailybriefing-service@newsletters.cqrollcall.com <blmailer-dailybriefing-newsletters.cqrollcall.com@biglist.com> on behalf of David Hawkings <dailybriefing-service@newsletters.cqrollcall.com>
Sent: Wednesday, March 16, 2011 11:40 AM
To: Schmidt, Rebecca
Subject: CQ Roll Call Daily Briefing: Chu, Day Two



Wednesday, March 16, 2011

Today In Washington



THE SENATE: Convened at 9:30 and later voted 98-1 to commit to a 5 percent reduction in its own overhead this year. Senators also will vote on half a dozen other amendments to the small-business research bill before passing it, probably before the end of the day. One would put implementation of the health overhaul on hold until its constitutionality is reviewed by the Supreme Court. Another, by freshman Rand Paul, would make the tea party movement's wishes come true by cutting \$200 billion from federal spending.

THE HOUSE: Convenes at noon and before 6 will pass legislation ending a program (created during the 2008 mortgage crisis) that helps governments and nonprofit groups buy and redevelop foreclosed and abandoned houses. But the bill stands no chance of enactment before the next \$1 billion round of grants goes out the door in two weeks.

THE WHITE HOUSE: Obama will discuss options for assisting Japan this afternoon with USAID chief Raj Shah; the two will also review American humanitarian aid efforts in Haiti, Afghanistan, Pakistan, the Middle East and Africa. He'll also receive an award from a coalition of groups that advocate government transparency before giving a pep talk at 5 to the DNC national finance committee.

At noon, ESPN will reveal all the details of the president's NCAA men's tournament bracket. (He's playing it safe and predicting top seeds Duke, Kansas, Ohio State and Pittsburgh as the Final Four.)

PLANT LIFE: Energy Secretary Chu was back on Capitol Hill this morning for a second day of defending the Obama administration's support for the expansion of U.S. nuclear energy production. The barrage of skepticism is coming mostly from fellow Democrats; Republicans, meanwhile, are eager to hear that the president has not lost confidence in nuclear power. The United States already gets 20 percent of its electricity from nukes.

Chu told the Energy and Power Subcommittee that the administration would continue to press Congress to provide \$36 billion for loan guarantees to support construction of at least six new plants. "We need to apply any lessons that can and will be learned from the situation in Japan," he promised.

Members of Congress have expressed deepening worry this week that several American plants would be vulnerable in the same way as the stricken facility in Japan. The 50 emergency workers who are the last line of defense against a comprehensive meltdown at the Fukushima Daiichi plant were ready to go back inside the tsunami-stricken facility today. They were pulled out for several hours overnight when radiation levels soared at the reactors 140 miles north of Tokyo, one of which was emitting a plume of presumably radioactive steam.

Police say 3,700 people are officially listed as dead and another 452,000 have been displaced because of the earthquake and tsunami. "It is important that each of us shares the difficult days that lie ahead," Emperor Akihito said in a rare TV address to the nation.

Chu said his department has assembled a team of 34 people and sent 7,200 pounds of equipment to Japan to help monitor and assess the situation. But the U.S. Embassy in Tokyo has told Americans to avoid traveling to Japan.

TIRING OF TURF TOE: Because only 186 Republicans voted for the CR yesterday, that means from now on Boehner will need the support of at least 30 Democrats (and probably many more) to get any more fiscal 2011 spending measures through the House. And the Democrats are less and less likely to produce those votes.

Which means that the debate over the half-over budget year really will need to come to a climax by April 8 — or maybe one week later if there's genuinely significant progress to report in the interim. Kicking the proverbial can down the road beyond the start of the big spring recess on April 15 is no longer in anyone's interest.

Reid and McConnell were close to an agreement this morning that would assure the sixth CR for this year clears by tomorrow night.

The 54 Republicans (including a quarter of the freshmen) who voted against the three-week measure can be counted on to vote against almost any spending deal that's negotiated between Congress and Obama. If they didn't like cutting \$6 billion over three weeks, they're surely not going to like a final bill that almost certainly will promise reductions at a shallower depth — and that has very little chance of including *both* of the policy riders (defunding the health care law and Planned Parenthood) they say are required to win their support.

And the roster of 104 Democrats who opposed yesterday's bill is certain to get bigger the next time around, as well, because even the few remaining centrists in the caucus are starting to feel like they've gone more than halfway toward meeting the GOP demands.

"We know the agreement is going to be someplace in between where you are and where we are," Hoyer told GOP leaders yesterday. "But what we don't know is what you can pass. What you don't know is what you can pass. You don't know what your caucus will do."

The dilemma, a nutshell, is this: GOP leaders will alienate many more conservatives if they try to chart a middle course. But if they make a bid to mollify those conservatives by insisting on a final deal that includes the House-passed spending cuts and policy provisions, the Democrats and the president won't agree.

GROSS ESTIMATE: A pair of prominent House GOP fiscal hawks wants some help from an unusual source: Pimco bond fund boss Bill Gross. The two, Budget Chairman Paul Ryan and Study Committee Chairman Jim Jordan, want Gross to explain to as many people on the Hill as possible — not only receptive Republicans but Democrats even more importantly — his rationale for ditching his holdings in Treasury bonds. (Gross says the growth of the federal debt heralds the prospect of higher interest rates, which in turn would mean a drop in the value of bond holdings.)

The Republicans say they want Gross to explain his bearish outlook himself, so as not to cause any panic. But top Democrats say that's exactly what could happen, and that the better course is to focus on the market experts who view Treasury bills as a safe investment.

BUCKEYE BIG SHOTS: Their state will once again be indispensable to both sides in their 2012 electoral-vote counts. And to that end one of the most prominent Ohioans from each party is getting ready to play a high-profile role in the upcoming presidential campaign.

Rob Portman — who won a lopsided victory last fall in the perennially bellwether, legendarily tossup state — insists that he's just trying to

be the best freshman senator he can be for now. But he's been wooed for months by virtually every Republican presidential candidate, and the national party, to lend his organizational skill and personal prestige. He's promised not to endorse anyone for the nomination — a move that will only enhance his appeal as a potential running mate for whoever ends up claiming the nomination in Tampa next summer.

And, while Ted Strickland may have lost the governorship last fall, his name is at the top of almost every list of possibilities to be the next chairman of the Democratic Party. (The job will come open as soon as Tim Kaine officially announces that he's ready for his clash-of-the-Virginia-political-titans Senate campaign against George Allen.) Although Strickland hitched his wagon to Hillary Clinton in 2008, he became a full-throated Obama loyalist even as his support for the president diminished his own prospects for a second term.

BLUMENTHAL TIME: Pay close attention to the clock in the Senate at exactly noon, to see if Dick Blumenthal shows up on time to deliver his maiden speech. Having spent the past two decades as more or less his own boss, as Connecticut's attorney general, Blumenthal had grown used to running on his own time table, with people more than willing to wait for him. And so he's already developing a reputation for untoward tardiness on the Hill. In one widely observed incident, he showed up 7 minutes late a few weeks ago to preside over the opening of the Senate — a breach of decorum that drew a tongue-lashing from Reid on the Senate floor.

HAPPY BIRTHDAY: Democratic House members Joe Crowley of New York (49) and Ron Kind of Wisconsin (48).

— David Hawkings, editor

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Portman is GOP's Ohio Point Man (Roll Call)

The senator will remain neutral in the GOP presidential primary. » [View full article](#)

Boehner Faces Tough Choices (CQ Today)

The realities of the Senate are weighing heavily on the Speaker. » [View full article](#)

No Quiet Beginning for N.Y.'s Grimm (Roll Call)

The Republican freshman says that tea party opposition to a second short-term CR is "irrational." » [View full article](#)

Members Tiring of Short-Term Spending Bills (Roll Call)

House GOP leaders are hearing strong talk from the rank-and-file. » [View full article](#)

John Cranford's Political Economy: The Party's Over (CQ Weekly)

The decision by bond trader Bill Gross to dump his holdings of Treasury securities was surely a canary-in-the-coal-mine moment. But not exactly in the way that some observers have said. » [View full article](#)

Lawmakers Question U.S. Nuclear Safety Standards (CQ Today)

The earthquake resistance of California's plants, in particular, is raising concerns. » [View full article](#)

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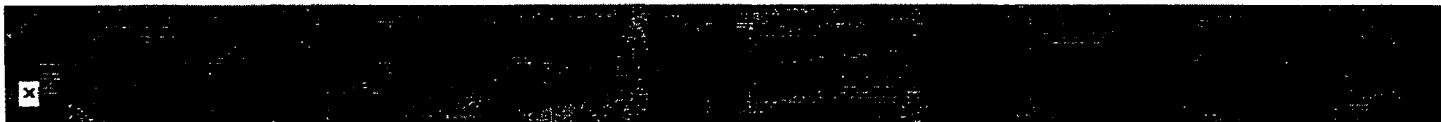


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Sent: Wednesday, March 16, 2011 12:14 PM
To: Droggitis, Spiros
Subject: Join Gartner Analyst Neil MacDonald at the APT Summit March 23rd

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Stopping Today's Advanced Attacks
Neil MacDonald, VP & Gartner Fellow
March 23rd, 2011 7:30am - 11:30am
Newseum, Washington DC

APT Summit:
Stopping Today's Advanced Attacks

Date: Wednesday, March 23, 2011
Time: 7:30am - 11:30am
Location: Newseum, Washington DC



About the Speaker:

Neil MacDonald is a vice president, distinguished analyst and Gartner Fellow at Gartner Research. As a member of Gartner's information security and privacy research team, Neil focuses on operating system and application-level security strategies. Research areas include Windows security, HIPS, endpoint security and more.

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- 7:30am Welcome & Registration
- 8:00am Keynote: Neil MacDonald, VP & Gartner Fellow
- 9:00am ArcSight
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- 10:00am Break
- 10:20am Accuvant
- 10:50am Bit9
- 11:20am Q & A

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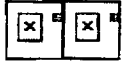
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To: Schmidt, Rebecca
Subject: Out of Office: Gotten a lot

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Thanks,
Nancy

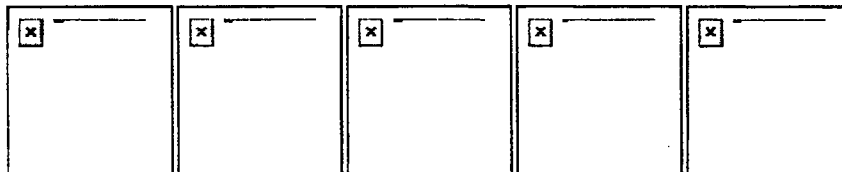
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Subject: REGISTER NOW: 2011 Carnegie International Nuclear Policy Conference, March 28-29, Washington, D.C.

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Sent: Wednesday, March 16, 2011 6:43 PM
To: Schmidt, Rebecca
Subject: Supplement on Bill to Prohibit NPR Funding

The House Action Reports Supplement to the Legislative Week of March 14 is now available on our website (<http://www.cq.com/doc/har-3833338>).

The Supplement deals with **HR 1076**, Prohibit Federal Funding of NPR, which is expected to be considered by the House on Thursday, March 17. The bill prohibits further federal support of NPR, and bars local stations from using federal funds to purchase or license NPR programming. The measure also bars other federal grant recipients from providing that money to NPR or to create radio content that would be available nationwide.

The recommended rule bars amendments, but allows one motion to recommit.

Loren Duggan
Editor, CQ House Action Reports

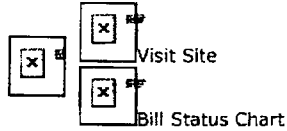
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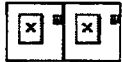
From: Schmidt, Rebecca
Sent: Wednesday, March 16, 2011 10:03 PM
To: Weil, Jenny
Subject: How are you?

From: CQ Budget Tracker <budgettracker-owner@cqrollcall.com>
Sent: Thursday, March 17, 2011 7:03 AM
To: Droggitis, Spiros
Subject: CQ Budget Tracker Newsletter





Chuck Conlon, Editor, budget@cq.com



Senate Set to Clear Latest CR Extension

The Senate votes Thursday on clearing the latest stopgap funding measure: a three-week extension that also cuts \$6 billion from current spending.

Congressional leaders hope the new funding extension (H J Res 48) will give them enough time to hammer out an agreement on spending for the second half of the fiscal year. Republicans and Democrats remain more than \$50 billion apart on the level of spending cuts they support, with Republicans favoring the \$61.5 billion in cuts for the year that were included in [HR 1](#) as passed by the House last month. With passage of this new CR, \$10 billion of those cuts will have been enacted. Members of both parties are growing weary of the short-term extensions and want to complete action on current-year spending, but that does not mean they are willing to meet in the middle on spending. There also appears to be no clear path with regard to the policy riders that GOP conservatives added in the House and that Senate Democrats oppose, unless one side backs away from its position. Nevertheless, leaders yesterday voiced growing confidence that they can reach a deal before the new CR expires April 8.

[CQ Today Story](#)

Senate Minority Leader Mitch McConnell, R-Ky., said any further short-term CRs will also include full funding for the Pentagon for the rest of the year. In a colloquy on the Senate floor with Arizona Republican John McCain, who had threatened to offer the Defense spending bill as an amendment to the pending CR, McConnell said, "I can say with total confidence that the House and Senate are not going to be passing another continuing resolution without the funding for the Defense Department for the remainder of this fiscal year." McConnell said House GOP leaders share his view. Democrats have opposed separating the Defense bill, arguing that all agencies should be treated the same.

[CQ Today Story](#)

The adverse impact of continued stopgap funding for the Pentagon was highlighted yesterday in a pair of hearings where department officials appeared. The Navy's top civilian leader warned the Senate Defense



Updated 5:30 a.m., Thursday 3/17

Short-Term CR

The Senate votes Thursday on clearing the measure (H J Res 48). The House passed it Tuesday, 271-158. It extends stopgap funding for three weeks while cutting \$6 billion.

Complete Bill Coverage FY 2011 Spending / Cuts

Leaders hope they can reach an agreement in the next three weeks. The parties remain more than \$50 billion apart on spending cuts, and must determine the disposition of GOP policy riders. [CQ Today Story](#) | [Complete Bill Coverage](#)

Appropriations Subcommittee that delays in providing full-year funding could wreak havoc with shipbuilding accounts and create a \$600 million shortfall in Navy and Marine Corps personnel accounts. Army Gen. David H. Petraeus and the Pentagon's undersecretary for policy told the House Armed Services Committee that a looming shortfall in funds for training and equipping Afghan police and army units would have a "devastating" impact on U.S. troops' prospects for success in Afghanistan.

CQ Today Stories: [Navy](#) | [Afghanistan](#)

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SENATE GOP RAMPS UP PRESSURE ON ENTITLEMENTS & DEBT LIMIT:

Almost half of the Republicans in the Senate yesterday sent a letter to President Obama calling on him to "lead a bipartisan effort" to address the nation's unsustainable fiscal path, saying they will likely oppose an increase in the debt limit if he fails to do so.

"The fiscal challenges facing our country today call for courageous leadership," the 23 GOP senators said in their letter to Obama. "Federal expenditures on Social Security, Medicare and Medicaid are expected to double over the coming decade and represent an unsustainable portion of total government spending. In order to ensure the long-term viability of these programs, it is imperative that you lead a bipartisan effort to address these challenges," they wrote. Noting that Obama's fiscal commission had "marked an important first step in identifying a potential path forward," they said, "strong leadership is needed now to advance possible solutions to ensure that our entitlement programs can serve both current and future generations. Without action to begin addressing the deficit, it will be difficult, if not impossible, for us to support a further increase in the debt ceiling." Senate Minority Leader McConnell has been urging the president to begin tackling entitlements, and last weekend said that he didn't expect any Senate Republicans would vote for a debt limit increase unless something "important" was done related to spending and debt.

[CQ Today Story](#) | [GOP Senators' Letter](#)

Texas Republican John Cornyn raised the possibility that Republicans would only allow short-term increases in the debt limit in order to keep the pressure on Obama and Democrats with regard to entitlements. "There's no requirement that we pass a debt ceiling increase that lasts for two years or one year," Cornyn said yesterday. "We have significant leverage, those of us who want some fiscal sanity to be restored." Some House Republicans have also recently hinted at that scenario as a

possible strategy. Cornyn, who was one of the GOP senators signing yesterday's letter to Obama, said some fiscal proposals such as a balanced-budget amendment to the Constitution should be considered on the Senate floor before any votes occur to raise the debt limit. "I guarantee I will vote against raising the debt ceiling unless we get significant reform in place," he said. Cornyn and four other GOP conservatives plan to unveil a new balanced-budget amendment proposal today. Colorado Democrat Michael Bennet, meanwhile, wrote yesterday to both Federal Reserve Chairman Ben S. Bernanke and Treasury Secretary Timothy F. Geithner asking them to provide detailed projections of how a default from failing to raise the debt limit would affect the nation's economic production, interest rates, unemployment, and government debt and deficits.

Bennet Release & Letter

A leader of one of last year's bipartisan debt reduction commissions also called on Obama this week to show greater leadership on the issue. "Unfortunately President Obama has been largely absent from this conversation," said former Sen. Pete Domenici, R-N.M., who, along with former Congressional Budget Office and Office of Management and Budget director Alice Rivlin, chaired a 19-member Bipartisan Policy Committee (BPC) debt reduction task force that late last year produced its own set of recommendations to reduce future debts and deficits. "Perhaps even more importantly, the president thus far has failed to adequately emphasize to the American people the scope of this massive looming problem that awaits them and threatens to destroy much of what they hold dear," Domenici told the Senate Budget Committee in its review Tuesday of the BPC's recommendations. "I agree that the president has to get into this game and has to play a very important part in it," Rivlin said at the hearing. Noting the effort by the Senate's bipartisan "gang of six" to develop comprehensive legislation based on the fiscal commission's framework, Rivlin added, "I believe that effort can give the president the bipartisan cover that he needs to jump into the pool, which he absolutely has to do."

CQ Transcript of Senate Budget Hearing

Senate Budget Hearing Event Website (with links to testimony, statements)

Senate Budget Chairman Kent Conrad, D-N.D., emphasized that any plan to address growing debt and deficits can't just address government spending, but must also bring in more revenues to help close the gap — a position most Republicans are reluctant to endorse, just as most Democrats don't want to touch major entitlements. Conrad pointed to the "Roadmap for America's Future" by House Budget Chairman Paul D. Ryan, R-

Wis., which proposes major reductions in future spending, including by significantly modifying Social Security and Medicare. Ryan's "Roadmap" also modifies the tax code, but not in a way that would raise revenues much above historic levels. Conrad said that under Ryan's plan, the nation's publicly held debt would rise to 99 percent of gross domestic product by 2040, while it would fall to 54 percent of GDP under the BPC plan and drop to 30 percent in the fiscal commission's plan. "Chairman Ryan's roadmap proves the point that revenues, I believe, have to be part of a plan to reduce the deficit and debt, otherwise the debt is too high," Conrad said. Domenici and Rivlin agreed that increased revenues have to be part of the solution, emphasizing that it must be accomplished through an overhaul of the tax code that simplifies the tax system and helps to boost economic growth.

[Ryan "Roadmap" Website](#) | [Conrad Hearing Charts](#)

HOUSE APPROPRIATORS SPAR OVER LABOR BUDGET: Labor Secretary Hilda L. Solis defended her department's fiscal 2012 budget request before House appropriators Wednesday, where questions regarding proposed cuts to current spending also were raised.

Solis emphasized the department's work in evaluating and streamlining its programs in an effort to ensure cost-effectiveness at a time when congressional Republicans are pushing to cut federal spending. The president's budget proposes \$12.8 in discretionary funding, a 5 percent decrease from the \$13.6 provided in fiscal 2010. At a House Appropriations Labor-HHS-Education Subcommittee hearing, Solis said the agency "takes the president's goal of deficit-reduction very seriously. We're working very hard to strike the right balance between reducing spending and making strategic investments that will support American workers and businesses in our economy." Ranking Member Rosa DeLauro, D-Conn., commended the administration's budget, "particularly in contrast with the approach adopted by the majority" in trying to cut spending for the current fiscal year. She expressed support for strengthening and fully funding workforce programs, citing statistics showing that participation has increased dramatically in recent years, from 3.4 million workers in 2008 to just over 8 million in 2010.

[Solis Prepared Testimony](#) | [DeLauro Opening Statement](#)

Solis called for a reauthorization of the Workforce Investment Act, which governs job training programs and has not had a major rewrite since 1998. She stressed that such an effort would allow Congress to gather information about possible improvements to job training and workforce

initiatives. Solis also emphasized that the administration's fiscal 2012 budget proposal would allocate almost \$380 million in the departments of Labor and Education for a competitive "Workforce Innovation Fund." The program would be aimed at encouraging states and regions to compete for funds by demonstrating their commitment to transforming their workforce systems. Solis said the workforce innovation proposal is an example of where the administration made "tough choices in the budget," as its cost would be offset by cutting other funding streams under the Workforce Investment Act programs.

Subcommittee Chairman Denny Rehberg, R-Mont., highlighted several programs that he argued provide a poor return on taxpayer investment, including Job Corps. Obama's budget request includes \$1.7 billion for the Office of Job Corps, which runs training centers aimed at preparing disadvantaged youth for a successful transition into the workforce. Disagreeing with Democrats who emphasized the program's success, Rehberg contended the program has "been proven to be ineffective." He said the program costs \$38,000 per person and cited an OMB study that found that the program's costs exceed its benefits. "This is the most expensive cost-per-participant program in the department, if not the entire government," he said, adding that the program only serves four-tenths of one percent of school dropouts. The House GOP's fiscal 2011 continuing appropriations bill ([HR 1](#)) would cut funding for the program by \$300 million.

Rehberg also blasted the administration's request to boost funding for the Green Jobs Innovation Fund, which provides workers with job training in alternative- and renewable-energy industries. According to Solis' prepared testimony, Obama's budget calls for \$60 million for the program, a \$20 million boost from fiscal 2010 levels. Rehberg noted that it had received \$500 million under the 2009 stimulus ([PL 111-5](#)), and of that 88 percent has not been spent. He pressed Solis to explain "what you have to show" for the program and why it requires additional funding, but Solis did not give Rehberg the specific numbers he requested in his questions about how many people had received job training and placement through the program.

Panel Democrats used the hearing to express concerns about a series of proposed spending cuts in the GOP's fiscal 2011 continuing appropriations measure. In particular, DeLauro and other Democrats expressed alarm that Republicans have proposed significant funding reductions for the Occupational Health and Safety Administration (OSHA), which would be cut by about 20 percent under the GOP plan. Solis warned that if such a cut were enacted, OSHA would have to lay off more than 400 investigators, which

would in turn "create a crisis where you are going to see more fatalities or injuries in the work place." The president's fiscal 2012 budget proposes an increase for OSHA of about 4 percent from fiscal 2010 levels, to \$583 million.

Frances Symes contributed to this report.

In Brief

• **Inouye Voices Concerns Over Terminating Marine Vehicle Program:** The top lawmaker on the Senate's Defense spending panel expressed skepticism Wednesday about a decision to terminate an amphibious fighting vehicle in fiscal 2012. [Full Story](#)

• **House Panel Excludes Jet Fuel Tax Increase from FAA Bill :** The House's tax-writing panel Wednesday backed a multi-year, financing package for federal aviation programs that would reject calls in the Senate for an increase in jet fuel taxes. [Full Story](#)

• **House to Vote on GOP Plan to Block NPR Funding:** The House on Thursday is expected to pass a GOP proposal to ban federal funding for NPR under a process that ensures no amendments will be added to the measure. [Full Story](#)

• **Chu Defends Loan Guarantees Amid Scrutiny Over Japanese Catastrophe:** Energy Secretary Steven Chu's latest visit to Capitol Hill came at a particularly inopportune time for the Obama administration. [Full Story](#)

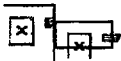
• **Senate Supports Cutting Its Own Budget:** The Senate expressed support for at least a 5 percent reduction in its own budget through two different votes Wednesday. [Full Story](#)



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a three-week extension that also cuts \$6 billion from current spending.

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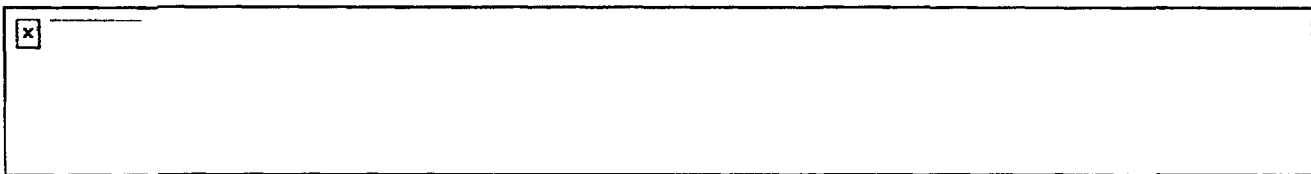
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Issue-Id: 14938006:budgettrackerlite:75

--~--

From: Schmidt, Rebecca
Sent: Thursday, March 17, 2011 7:39 AM
To: Belmore, Nancy; Droggitis, Spiros
Subject: I'm on train-

From: Roll Call <rollcall@e.rollcall.com>
Sent: Thursday, March 17, 2011 8:04 AM
To: Schmidt, Rebecca
Subject: Latest News From Roll Call Politics



Thursday, Mar. 17, 2011

Politics



[GOP Has New 2012 Target: Obama's \\$1 Billion Campaign](#)



[Members Take Cash, Check or Fine Wine](#)



[Berkley on Nevada Senate Bid: 'I've Paid My Dues'](#)



[Rothenberg: Are GOP Freshmen Ready to Rumble in 2012?](#)



[Shop Talk: Republican Operative Lands at Direct Impact](#)



[Alaska Republican Joe Miller Gets Speaker's Contract](#)



[Republican Exploring Run for New Mexico's 1st District](#)



[Sherrod Brown Looks Solid in New Ohio Poll](#)



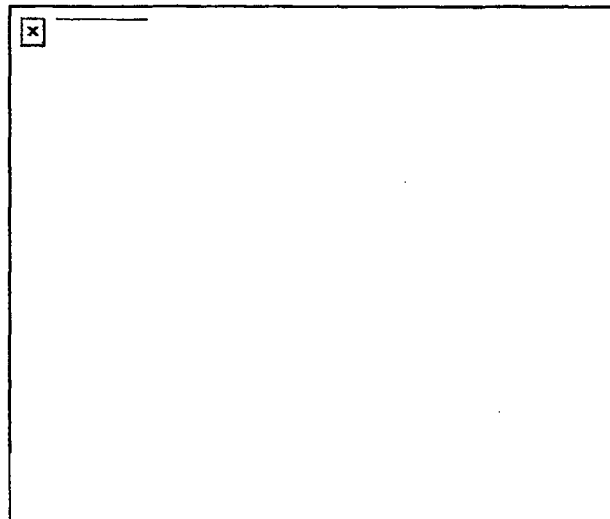
[Sharron Angle Launches House Bid \(VIDEO\)](#)



[Wisconsin Crank Caller May Jump in N.Y. 26 Race](#)



[Barbour Hires N.H. Operative for 2012](#)



GOP Has New 2012 Target: Obama's \$1 Billion Campaign

He may have already shattered presidential fundraising records, but a question lingers over President Barack Obama's budding 2012 re-election bid: Is there such a thing as too much money? [Full Story](#)

Members Take Cash, Check or Fine Wine

Rep. Mike Thompson often holds fundraising events that are BYOB. Since 2001, donors attending his parties and other contributors have given the California Democrat more than 800 gifts of wine worth about \$340,000. [Full Story](#)

Berkley on Nevada Senate Bid: 'I've Paid My Dues'

Rep. Shelley Berkley says that even though national Democrats are openly talking with others about Nevada's open Senate race, she expects the party to defer to her when it comes time to pick a contender. [Full Story](#)

Rothenberg: Are GOP Freshmen Ready to Rumble in 2012?

Redistricting may ultimately save some Republican House freshmen who were elected through no fault of their own. But that isn't stopping GOP insiders from worrying whether freshmen who were swept up on the beach by the strong November tide understand why they won and what they need to do to win re-election. [Full Story](#)

Shop Talk: Republican Operative Lands at Direct Impact

Republican strategist Randy Bumps has signed on as executive vice president at Direct Impact, a communications firm in Washington, D.C., specializing in public affairs, public relations and corporate reputation campaigns. [Full Story](#)

Alaska Republican Joe Miller Gets Speaker's Contract

Former Senate candidate Joe Miller has signed on with the 21st Century Speakers Bureau and will give a speech March 24 in Montara, Calif., at an event called, "A Night With the Joes" — featuring Miller, Samuel "Joe the Plumber" Wurzelbacher and Joe Arpaio, sheriff of Maricopa County, Ariz. [Full Story](#)

Republican Exploring Run for New Mexico's 1st District

Former state Rep. Janice Arnold-Jones (R) has formed an exploratory committee as she considers running for the 1st district, which is currently held by Rep. Martin Heinrich (D). [Full Story](#)

Sherrod Brown Looks Solid in New Ohio Poll

Look no further than Drew Carey for evidence that Democratic Sen. Sherrod Brown's political future is brightening. [Full Story](#)

Sharron Angle Launches House Bid (VIDEO)

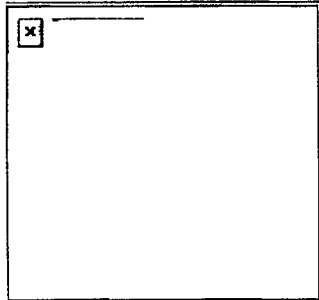
Sharron Angle will enter the open-seat race in Nevada's 2nd district on Wednesday, according to Republican National Committeewoman Heidi Smith. [Full Story](#)

Wisconsin Crank Caller May Jump in N.Y. 26 Race

Ian Murphy may seek the Green Party candidacy in New York's 26th. [Full Story](#)

Barbour Hires N.H. Operative for 2012

In another sign he is moving toward a run at the presidency, Mississippi Gov. Haley Barbour has hired one of New Hampshire's last uncommitted top operatives. [Full Story](#)



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From: OPA Resource
Sent: Thursday, March 17, 2011 9:57 AM
To: Ash, Darren; Barkley, Richard; Batkin, Joshua; Bell, Hubert; Belmore, Nancy; Bergman, Thomas; Bollwerk, Paul; Bonaccorso, Amy; Borchardt, Bill; Bozin, Sunny; Brenner, Eliot; Brock, Terry; Brown, Boris; Bubar, Patrice; Burnell, Scott; Burns, Stephen; Carpenter, Cynthia; Chandrathil, Prema; Clark, Theresa; Collins, Elmo; Couret, Ivonne; Crawford, Carrie; Cutler, Iris; Dacus, Eugene; Dapas, Marc; Davis, Roger; Dean, Bill; Decker, David; Dricks, Victor; Droggitis, Spiros; Flory, Shirley; Franovich, Mike; Gibbs, Catina; Haney, Catherine; Hannah, Roger; Harbuck, Craig; Harrington, Holly; Hasan, Nasreen; Hayden, Elizabeth; Holahan, Gary; Holahan, Patricia; Holian, Brian; Jacobssen, Patricia; Jaczko, Gregory; Jasinski, Robert; Jenkins, Verlyn; Johnson, Michael; Jones, Andrea; Kock, Andrea; Kotzalas, Margie; Ledford, Joey; Lee, Samson; Leeds, Eric; Lepre, Janet; Lew, David; Lewis, Antoinette; Loyd, Susan; Magwood, William; McCrary, Cheryl; McGrady-Finneran, Patricia; McIntyre, David; Mensah, Tanya; Mitlyng, Viktoria; Monninger, John; Montes, David; Nieh, Ho; Ordaz, Vonna; Ostendorff, William; Owen, Lucy; Powell, Amy; Quesenberry, Jeannette; Reddick, Darani; Regan, Christopher; Reyes, Luis; Riddick, Nicole; RidsSecyMailCenter Resource; Riley (OCA), Timothy; Rohrer, Shirley; Samuel, Olive; Satorius, Mark; Schaaf, Robert; Schmidt, Rebecca; Scott, Catherine; Screnci, Diane; Shaffer, Vered; Shane, Raeann; Sharkey, Jeffrey; Sheehan, Neil; Sheron, Brian; Siurano-Perez, Osiris; Steger (Tucci), Christine; Svinicki, Kristine; Tabatabai, Omid; Tannenbaum, Anita; Taylor, Renee; Temp, WDM; Thomas, Ann; Uhle, Jennifer; Uselding, Lara; Vietti-Cook, Annette; Virgilio, Martin; Virgilio, Rosetta; Walker-Smith, Antoinette; Weaver, Doug; Weber, Michael; Weil, Jenny; Werner, Greg; Wiggins, Jim; Williams, Evelyn; Zimmerman, Roy; Zorn, Jason
Subject: Press Release: NRC Cancels Crystal River Plant Restart Meeting
Attachments: 11-009.ii.docx

Office of Public Affairs
US Nuclear Regulatory Commission
301-415-8200
opa.resource@nrc.gov



NRC NEWS

U.S. NUCLEAR REGULATORY COMMISSION

Office of Public Affairs, Region II
61 Forsyth Street SW, Atlanta GA 30303
Web Site: www.nrc.gov

No. II-11-009

CONTACT: Roger Hannah (404) 997-4417
Joey Ledford (404) 997-4416

March 17, 2011

E-mail: OPA2@nrc.gov

NRC CANCELS CRYSTAL RIVER PLANT RESTART MEETING

The Nuclear Regulatory Commission staff has cancelled a meeting to discuss the restart of the Crystal River plant after indications of a new separation or gap in the concrete containment.

The meeting was scheduled to be held at 1 p.m. on Tuesday, March 22 near the plant, which is operated by Progress Energy on the west coast of Florida about 80 miles north of Tampa. A similar meeting will be scheduled by the NRC in the area before the plant restarts.

Progress Energy has reported that there are indications of additional separation or gap resulting from the repair work on the original containment wall. NRC inspectors will closely follow Progress Energy's analyses as well as any planned repairs.

The Crystal River plant shut down in the fall of 2009 for a planned refueling outage that included replacement of the steam generators. To move the large steam generators into the containment building, workers removed concrete to create the necessary opening. During that work, the plant staff discovered a separation or gap in the concrete containment wall. The Crystal River plant has been shut down since then while Progress Energy investigated the cause of the gap and repaired the concrete containment.

###

News releases are available through a free *listserv* subscription at the following Web address: <http://www.nrc.gov/public-involve/listserver.html>. The NRC homepage at www.nrc.gov also offers a SUBSCRIBE link. E-mail notifications are sent to subscribers when news releases are posted to NRC's website.

From: Schmidt, Rebecca
Sent: Thursday, March 17, 2011 3:03 PM
To: Haynes, Laura (Carper)
Subject: RE: Go team setup for Congressional Briefings

Not a problem—everyone is crashing. So was this format ok? How did you think the call went? We figured tomorrow and on out we would use less time updating and more time answering questions

From: Haynes, Laura (Carper) [mailto:Laura_Haynes@carper.senate.gov]
Sent: Thursday, March 17, 2011 1:52 PM
To: Schmidt, Rebecca
Subject: RE: Go team setup for Congressional Briefings

Becky – I'm so sorry I didn't respond earlier – TC was chairing a hearing this am. Thanks for setting this up.

From: Schmidt, Rebecca [mailto:Rebecca.Schmidt@nrc.gov]
Sent: Thursday, March 17, 2011 9:30 AM
To: Haynes, Laura (Carper)
Cc: Powell, Amy
Subject: Go team setup for Congressional Briefings

Laura,

We have organized a team to answer questions everyday for Congressional staff. Since you requested, can you call me and we will finalize the details. We thought we would start Monday since we have the downtown briefing tomorrow with EDO. Becky

From: Schmidt, Rebecca
Sent: Thursday, March 17, 2011 4:12 PM
To: Belmore, Nancy
Subject: Set up a staff mtg

Either tomorrow or monday-whenever we have most people here

From: Schmidt, Rebecca
Sent: Thursday, March 17, 2011 4:57 PM
To: Belmore, Nancy
Subject: Re: Office Meeting

Nancy, I'll be on Hill until 2 or so

From: Belmore, Nancy
To: OCA Distribution
Sent: Thu Mar 17 16:20:23 2011
Subject: Office Meeting

Becky has requested that we have an office meeting, which I have scheduled for Friday, March 18, 2011 at 9:30 a.m.

Nancy Belmore
Office of Congressional Affairs
U.S. Nuclear Regulatory Commission
nancy.belmore@nrc.gov
301-415-1776

From: Schmidt, Rebecca
Sent: Thursday, March 17, 2011 5:10 PM
To: Powell, Amy
Subject: Re: Number of, names of plants near fault lines

Never saw anything

From: Powell, Amy
To: Dacus, Eugene; Schmidt, Rebecca
Sent: Thu Mar 17 16:58:49 2011
Subject: Number of, names of plants near fault lines

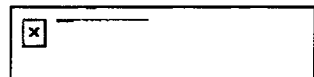
Did RES finish determining a number of these plants? Doug Clapp is looking for the names of those plants... I remember Jennifer Uhle and Jason working on it during the prep session but did not hear the outcome. Including Gene since he has Jennifer...

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Schmidt, Rebecca
Sent: Wednesday, March 16, 2011 5:34 PM
To: Brenner, Eliot
Subject: Chairman off to secure

Bil and I hanging out in hall. Bill doesn't want to get stuck in front of cameras

From: GovExec.com newsletters <news@twa.govexec-media.com>
Sent: Friday, March 18, 2011 5:50 AM
To: Schmidt, Rebecca
Subject: GovExec.com -- The Week Ahead



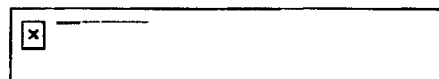
The Week Ahead

MARCH 21 - 25, 2011

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- **In the Spotlight**
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Meeting Federal Accountability Standards with Business Intelligence

Thursday, March 24
2:00 PM

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- How to leverage business intelligence for internal and external reporting
- Why business intelligence consistency ranks as a top CIO priority

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ON THE HILL:

The House and Senate are on recess.

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OTHER EVENTS:

- **Veterans Disability Compensation Issues**

Veterans Affairs Department (VA) (F.R. Page 11855) - Meeting [08:30 am, 03/21/2011]

Veterans Affairs Department (VA) (F.R. Page 11855) holds a meeting of the Advisory Committee on Disability Compensation, March 21-22.

Agenda includes: Briefings on issues related to compensation for Veterans with service-connected disabilities and other VA benefits programs; and public comments

Location: St. Regis Hotel, 923 16th Street NW, Washington, D.C.

Contact: Corina Negrescu, 202-461- 9752 (+WAFE611+)

- **Veterans Disability Compensation Issues**

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Contact: Corina Negrescu, 202-461- 9752 (+WAFE618+)

- **IRS Small Business Customer Service**

Treasury Department; Internal Revenue Service (IRS) (F.R. Page 6190) - Meeting [09:00 am, 03/22/2011]

Treasury Department; Internal Revenue Service (IRS) (F.R. Page 6190) holds a meeting by teleconference of the Taxpayer Advocacy Panel Small Business/Self Employed Correspondence Exam Toll Free Project Committee to solicit public comments, ideas and suggestions on improving customer service at the Internal Revenue Service.

Location: None given

Contact: Timothy Shepard, 888-912-1227; <http://www.improveirs.org> [Note: See contact for dial-in information.] (+WAFE709+)

- **DOE Scientific Computing**

Energy Department (DOE); Office of Science (F.R. Page 9765) - Meeting [09:00 am, 03/22/2011]

Energy Department (DOE); Office of Science (F.R. Page 9765) holds a meeting of the Advanced Scientific Computing Advisory Committee (ASCAC), March 22-23.

Agenda includes: Advanced Scientific Computing Research program updates; ARRA update; Technical talks on exascale relevant research; ASCAC Committee of Visitors (COV) update and new business

Location: American Geophysical Union (AGU), 2000 Florida Avenue NW, Washington, D.C.

Contact: Melea Baker, 301-903-7486, Melea.Baker@science.doe.gov (+WAFE741+)

- **HHS Health IT**

Health and Human Services Department (HHS); Office of the National Coordinator for Health Information Technology (HIT) (F.R. Page 2910) - Meeting [10:00 am, 03/22/2011]

Health and Human Services Department (HHS); Office of the National Coordinator for Health Information Technology (HIT) (F.R. Page 2910) holds a meeting by teleconference of the HIT Policy Committee Meaningful Use Workgroup to discuss recommendations it should make relative to meaningful use Stage 2.

Location: None given

Contact: Judy Sparrow, 202-205-4528, judy.sparrow@hhs.gov [Note: All workgroup meetings will be available via webcast; visit <http://healthit.hhs.gov> for instructions on how to listen via telephone or Web.] (+WAFE029+)

- **IRS Customer Service**

Treasury Department; Internal Revenue Service (IRS) (F.R. Page 6189) - Meeting [02:00 pm, 03/22/2011]

Treasury Department; Internal Revenue Service (IRS) (F.R. Page 6189) holds a meeting by teleconference of the Taxpayer Advocacy Panel Taxpayer Assistance Center Project Committee to solicit public comments, ideas and suggestions on improving customer service at the Internal Revenue Service.

Location: None given

Contact: Ellen Smiley, 888-912-1227; <http://www.improveirs.org> [Note: See contact for dial-in information.] (+WAFE710+)

- **IRS Small Business Customer Service**

Treasury Department; Internal Revenue Service (IRS) (F.R. Page 6189) - Meeting [09:00 am, 03/23/2011]

Treasury Department; Internal Revenue Service (IRS) (F.R. Page 6189) holds a meeting by teleconference of the Taxpayer Advocacy Panel Small Business/Self Employed Correspondence Exam Practitioner Engagement Project Committee to solicit public comments, ideas and suggestions on improving customer service at the Internal Revenue Service.

Location: None given

Contact: Janice Spinks, 888-912-1227; <http://www.improveirs.org> [Note: See contact for dial-in information.] (+WAFE711+)

• **DOE Scientific Computing**

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Agenda includes: Advanced Scientific Computing Research program updates; ARRA update; Technical talks on exascale relevant research; ASCAC Committee of Visitors (COV) update and new business

Location: American Geophysical Union (AGU), 2000 Florida Avenue NW, Washington, D.C.

Contact: Melea Baker, 301-903-7486, Melea.Baker@science.doe.gov (+WAFE742+)

• **IRS Electronic Tax Administration**

Treasury Department; Internal Revenue Service (IRS) (F.R. Page 12793) - Meeting [10:00 am, 03/24/2011]

Treasury Department; Internal Revenue Service (IRS) (F.R. Page 12793) holds a meeting of the Electronic Tax Administration Advisory Committee.

Agenda includes: ETAAC Security Subcommittee; Filing Season Status Update; Overview of ETA Operations

Location: Internal Revenue Service, 1111 Constitution Avenue NW, Room 2116, Washington, D.C.

Contact: Cassandra Daniels, 202-283-2178 (+WAFE021+)

• **IRS Customer Service**

Treasury Department; Internal Revenue Service (IRS) (F.R. Page 6190) - Meeting [02:00 pm, 03/24/2011]

Treasury Department; Internal Revenue Service (IRS) (F.R. Page 6190) holds a meeting by teleconference of the Taxpayer Advocacy Panel Joint Committee to solicit public comments, ideas and suggestions on improving customer service at the Internal Revenue Service.

Location: None given

Contact: Susan Gilbert, 888-912-1227; <http://www.improveirs.org> [Note: See contact for dial-in information.] (+WAFE712+)

• **Agency Rulemaking Comments**

Administrative Conference of the United States (ACUS) (F.R. Page 12315) - Meeting [02:00 pm, 03/24/2011]

Administrative Conference of the United States (ACUS) (F.R. Page 12315) holds a meeting of the Committee on Regulation to consider a report dealing with the timing, availability, confidentiality, and impact of comments submitted during agency rulemakings, as well as agencies' duty to reply to such comments. The consultant for this study is Professor Steven J. Balla of The George Washington University.

Location: 1120 20th Street NW, Suite 706 South, Washington, D.C.

Contact: 202-480-2080 (+WAFE010+)

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THE WEEK IN REVIEW:

Last week's top stories

- [OMB, special counsel nominees approved in committee](#) (March 17)
- [Experts call on agencies to narrow performance goals](#) (March 16)
- [Defense outlines furlough policy](#) (March 15)
- [Federal mentors dispense wisdom on YouTube](#) (March 14)
- [SEC told to reorganize and live within its means](#) (March 11)

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• **Quote of the Week:**

"We want to see data that can be used to hold government accountable," but that is "noticeably absent from Data.gov."

-- Rep. James Lankford, R-Okla., on [apparent errors](#) and trivia on government data websites

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From: Schmidt, Rebecca
Sent: Friday, March 18, 2011 6:45 AM
To: Borchartt, Bill; Sheron, Brian
Subject: This morning's briefings

930 am in 406 senate dirksen (same room as hearing). I will meet you in the grill room -isenate chef -i in basement of dirksen in the hallway between dirksen and hart. I will be there around 900.

From: CQ Budget Tracker <budgettrackerlite-owner@cqrollcall.com>
Sent: Friday, March 18, 2011 7:18 AM
To: Schmidt, Rebecca
Subject: CQ BudgetTracker Newsletter

CQ BudgetTracker Plain Text Newsletter
March 18, 2011

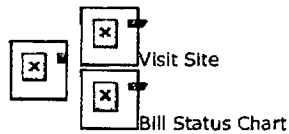
Senate Clears Three-Week Reprieve

The Senate on Thursday cleared for the president's signature the latest extension of stopgap funding, which gives congressional leaders and the White House another three weeks to try to reach a deal on spending for the rest of the year.

<http://www.cq.com/fetchNewsletterEdition.do?editionid=17405>

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Chuck Conlon, Editor, budget@cq.com



Senate Clears Three-Week Reprieve

The Senate on Thursday cleared for the president's signature the latest extension of stopgap funding, which gives congressional leaders and the White House another three weeks to try to reach a deal on spending for the rest of the year.

"Today's vote starts the clock," said Senate Majority Leader Harry Reid after the vote, even as it quickly became apparent that Democrats and Republicans view the spending issue in dramatically divergent ways.

The Nevada Democrat said in a statement that Democrats "are open to additional cuts that make sense," but told reporters that cuts to mandatory spending programs and revenue increases should be part of the discussion. Conference Vice Chairman Charles E. Schumer, D-N.Y., also suggested that cuts to Defense spending be considered. Schumer last week had suggested that savings from mandatory programs and revenues be considered as part of the negotiations over current-year spending, but it was met by a cool response from the White House. Republicans are currently focusing just on reductions in discretionary spending, particularly spending for non-security programs. If they can't reach agreement on funding for the remainder of the year, lawmakers face the prospects of a government shutdown when the new CR expires the night of April 8.

[CQ Today Story](#) | [Reid Statement](#)

The Senate passed the measure (HJ Res 48) by a 87-13 vote, with the legislation attracting an additional four GOP "nay" votes compared to two weeks ago when the Senate cleared an earlier CR extension. A total of nine Republicans opposed the measure, along with four Democrats.

"Patience is wearing thin on both sides," Schumer said of the repeated need to pass short-term measures. The House on Tuesday voted 271-158 to approve the three-week extension, with both parties registering dramatic increases in opposition and GOP leaders needing Democratic votes to pass the measure. Schumer called that "a bad omen." "The last few days have taught us that spending cuts alone will not bring a compromise. The new demand from the far right is that we go along with all their extraneous riders," Schumer said on the



Updated 10:17 p.m., Thursday 3/17

Short-Term CR

The Senate on Thursday voted 87-13 to clear the measure (H J Res 48) for the president's signature. It cuts \$6 billion while extending stopgap funding for three weeks. [CQ Today](#)

[Story](#) | [Complete Bill Coverage](#)
[FY 2011 Spending / Cuts](#)

Aides say talks will continue over the upcoming recess. The parties remain more than \$50 billion apart on spending cuts, and must determine the disposition of GOP policy riders.

[Complete Bill Coverage](#)



floor. "They want to impose their entire social agenda on the back of a must-pass budget." He said that House Speaker John A. Boehner, R-Ohio, faced a choice: to side with conservatives and the tea party, or to seek a compromise with Democrats. "Speaker Boehner wouldn't have been able to pass the short-term measure without Democratic votes, and he won't be able to pass a long-term one without Democratic votes, either," Schumer said.

[CQ Today Story](#) | [Complete Bill Coverage](#)

Floor debate yesterday focused on the desired level of spending for the year, with Republicans arguing for more cuts.

Top Senate Budget Republican Jeff Sessions of Alabama urged Democrats to embrace the House-passed bill ([HR 1](#)), which would cut \$61.5 billion for the year. "We do not need a compromise halfway, some \$30 billion reduction in spending," he said. "We need to meet the test, to face the defining challenge of our time, and that's spending" and rising debt. Sessions noted that cutting spending by \$61 billion this year would reduce the baseline for discretionary spending, which would amount to savings of \$862 billion over 10 years. "That's a real good step. That does make a difference," Sessions said. Minority Whip Jon Kyl of Arizona applauded the cuts being made by the CR extensions, calling them "the first meaningful spending cuts" Congress has made in years. He said that the \$10 billion that has been cut so far from current spending — including the \$6 billion cut in this CR extension — would amount to \$140 billion in savings over 10 years. Said Kyl, "Now, even in Washington, D.C., that's real money."

Statements & Releases: [White House](#) | [Boehner](#) | [Cantor](#) | [Hover](#) | [Sessions](#)

Appropriations Chairman Daniel K. Inouye, D-Hawaii, argued against further cuts, saying that because the government is halfway through its fiscal year, agencies will have a difficult time. "Each dollar we reduce at this time has the effect of doubling the cut made in programs for the rest of the year," Inouye said. And the cuts are even deeper than they appear, he said, because a more accurate gauge of agency needs is inflation-adjusted dollars. "If we are not basing our funding decisions on real costs, adjusted by inflation, we're in fact forcing government to cut the services it provides even when it receives the same funding level as in the previous year. This isn't a political talking point; it is pure and simple mathematics," he said. Inouye also argued that comparing proposed GOP cuts to the government's \$3.7 trillion in annual spending was misleading. He pointed out that with enactment of the new CR, domestic agencies will have just \$195 billion to meet all their needs for the rest of the year. "How much more of this spending can we really afford to cut before we are required to lay off food inspectors and shut down meat plants? How much more can we cut before we have no funds to pay employees

to monitor our borders and ports? How much more before we have to cancel the construction of dams and bridges and highways, sewers and transit projects, and throw thousands of private sector workers on to the street?"

Inouye Statement

BORDER SECURITY OFFICIALS CALL FOR LONG-TERM SPENDING PLAN:

Homeland Security officials this week told House appropriators that a continued reliance on short-term spending measures has somewhat hampered efforts to secure the U.S.-Mexico border, emphasizing the need for a full-year budget plan.

Representatives from various border security agencies within the Department of Homeland Security explained to a House Appropriations panel how the lack of long-term funding has affected their operations along the Southwest border, as lawmakers continue to seek a deal on current-year spending. During testimony Wednesday before the Homeland Security Subcommittee, U.S. Border Patrol Chief Michael Fisher said the "first and foremost operational impact" has been the challenge of accurately projecting deployments of agents to high-risk areas along the border without a clear picture of available funding. Coast Guard Rear Adm. Paul Zukunft offered a bleaker assessment, saying, "We're on life support." Zukunft — the assistant commandant for marine safety, security and stewardship — went on to say, "We can maintain the status quo, but we don't operate on the status quo," warning it's a "readiness issue" for the Coast Guard. Said Zukunft, "When I say we're on life support, it's really on the backs of our people."

Witnesses' Joint Statement

David E. Price of North Carolina, the panel's top Democrat, led the questioning regarding the impact on the short-term spending measures, stressing that using such stopgap bills was "no way to run a government." Looking ahead to fiscal 2012, President Obama's proposed budget would provide slight increases for those U.S. border agencies. Customs and Border Protection (CBP) would get \$10.4 billion in discretionary funding, or 2 percent more than current funding levels; the Coast Guard would get \$8.7 billion, nearly 2 percent more; and Immigration and Customs Enforcement would get \$5.5 billion, just over a 1 percent increase. The president's request would support 21,370 Border Patrol agents and provide additional funds for 300 new CBP officers for passenger and cargo screening. CBP is also assessing how increases in technology and the deployment of personnel and infrastructure along the southwest border improve the security of specific border sectors.

Prepared Remarks: [Aderholt | Price](#)

"Border security is broader than linear miles of control," Fisher said, explaining that it is important to view the border in terms of specific corridors and address what factors ease illegal entry. Fisher said his overall security strategy is risk-based and increasingly reliant on information and intelligence. He noted that his agency has had an influx of additional resources "relatively quickly," and said he is continuing to assess those gains to determine how best to deploy the right combination of personnel, technology and infrastructure. CBP Assistant Commissioner Thomas Winkowski stressed the agency's need to balance its dual responsibility to stop unwanted entry but also facilitate legitimate trade and travel at ports of entry. Zukunft, meanwhile, noted the importance of maintaining relationships with Mexico and, with respect to the use of submersibles, Colombia. Panel member John Carter, R-Texas, said he would work to provide additional resources and authorization language to address growing border security concerns at lakes along his state's border with Mexico. Zukunft said his agency has sent teams to the lakes to assess the threat.

[CO Hearing Transcript](#)

HOUSE APPROPRIATORS EXAMINE VA BUDGET: Veterans Affairs

Secretary Eric Shinseki this week emphasized the need to eliminate veterans' homelessness and reduce the agency's disability claims backlog as he defended the VA's \$162 billion budget request before a House panel.

Shinseki reiterated to the House Appropriations Military Construction-VA Subcommittee that one of the VA's top priorities is to provide every veteran living on the street with a place to live by 2015. "Six years ago, there were approximately 195,000 homeless veterans on any given night; today, there are about 75,600," Shinseki told the panel at a Wednesday hearing. To reach the 2015 goal, he said, the request includes \$939 million for programs to assist homeless veterans, an increase of \$140 million (18 percent) over the current level of \$799 million. That includes an additional \$50.4 million for Housing and Urban Development-VA Supported Housing (HUD-VASH) vouchers to subsidize housing for veterans. "Homelessness is both a housing and health care issue, heavily burdened by depression and substance abuse," Shinseki said. "These funds are required to maintain the services that keep veterans rescued from homelessness sheltered." The VA's overall budget for fiscal 2012 requests \$62 billion in discretionary funds in addition to \$70 billion in mandatory funding (the budget also includes a request for advance fiscal 2013 funding for VA health care).

Shinseki Prepared Testimony

Key members of the panel stressed their support for veterans' concerns but criticized the VA's massive backlog of claims from veterans seeking health and disability benefits. Shinseki said the agency has set 2015 as the goal for eliminating the backlog, which consists of more than 700,000 cases this year. Subcommittee Chairman John Culberson, R-Texas, said the present state of the economy and the U.S. government's dependency on foreign debt puts pressure on the VA to examine ways it could be more efficient. While he stopped short of proposing to cut the agency's funding, Culberson called on Shinseki to dismiss personnel who are not properly addressing the disability claims backlog. "You may need to fire some people," Culberson said. "The VA should be the gold standard in customer service, based on the people you serve." Shinseki said the agency is addressing the problem by focusing on a "culture change" inside VA that emphasizes advocacy for veterans, tapping ideas from stakeholders on best practices, and using technology to process claims more quickly. He also said the department is expected by 2015 to transfer its claims process from paper records to electronic databases.

Prepared Statements: [Culberson](#) | [Bishop](#)

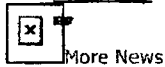
Joanna Anderson and Eugene Mulero contributed to this report.

In Brief

- **Senators Introduce Balanced-Budget Bill:** While House Republican leaders are urging a measure of restraint in setting a balanced-budget deadline, a group of conservative senators is pushing a more ambitious plan to slash the deficit. [Full Story](#)
- **House Republicans Vote to Cut NPR Funding:** House Republicans passed a partisan bill Thursday that would eliminate federal funding for NPR, a move aimed at reducing the deficit and addressing conservative concerns about the news organization's perceived liberal bias. [Full Story](#)
- **Levin Indicates Concern Over Air Force Funding Gaps:** The top defense policy lawmaker in the Senate said Thursday that he is concerned the Air Force is not sufficiently funding its weapon system maintenance programs. [Full Story](#)
- **CFTC Chief: Funding Cuts Will Kill Agency's Ability to Write Regulations:** The chairman of the Commodity Futures Trading Commission told appropriators Thursday that his agency will not be able to write regulations implementing a congressionally mandated expansion of over-the-counter derivatives market regulation if the agency's current funding levels are cut. [Full Story](#)
- **House Ways and Means Chairman Envisions Top Tax Rate of 25 Percent:** The top House taxwriter said Thursday that the highest tax rate for individuals and

corporations should be reduced from 35 percent to 25 percent as part of a larger tax code overhaul. [Full Story](#)

• **House Approves Committee Funding Proposal with 5 Percent Cut:** The House on Thursday approved a reduction in committee funding for the 112th Congress with no debate. [Full Story](#)



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Issue-Id: 14938006:budgettracker:73

From: Schmidt, Rebecca
Sent: Friday, March 18, 2011 7:35 AM
To: Sharkey, Jeffry; Nieh, Ho; Bubar, Patrice; Sosa, Belkys
Cc: Decker, David; Powell, Amy; Batkin, Joshua; Coggins, Angela
Subject: Senate passed CR

Breathing room until April 8th. No NRC spending cuts. President has to sign

From: Rothschild, Trip
Sent: Friday, March 18, 2011 7:36 AM
To: DeJesus, Anthony; Hirsch, Patricia; Powell, Amy; Schmidt, Rebecca
Subject: FW: Morning Headlines

From: Roll Call [mailto:rollcall@e.rollcall.com]
Sent: Friday, March 18, 2011 5:02 AM
To: Rothschild, Trip
Subject: Morning Headlines



Friday, Mar. 18, 2011

Morning Headlines



[Printing Agency May Modernize Its Name](#)



[House Redesigns Website as Information Hub](#)



[Finnian Ponders Third Challenge to Connolly](#)



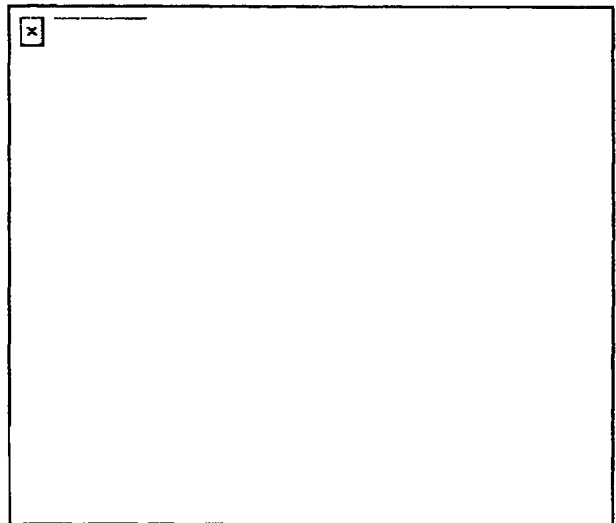
[Oversight Panel Launches Investigation of D.C. Mayor](#)



[Three-Week Spending Measure Sent to President](#)



[House Supports Ending Federal Funding for NPR](#)



Printing Agency May Modernize Its Name

The Government Printing Office, finding its paper-based mission under Congressional attack, is considering a name change to reflect its role in the digital age. [Full Story](#)

House Redesigns Website as Information Hub

House staff got a peek Thursday afternoon at the chamber's redesigned website, which will roll out in mid-April. [Full Story](#)

Fimian Ponders Third Challenge to Connolly

Virginia Republican Keith Fimian said Thursday he will run against Rep. Gerry Connolly (D) for a third straight election unless a rumored incumbent-protection redistricting map is approved by the state Legislature. [Full Story](#)

Oversight Panel Launches Investigation of D.C. Mayor

House Oversight and Government Reform Committee Chairman Darrell Issa announced Thursday that he will investigate the allegations that D.C. Mayor Vince Gray offered a quid pro quo to a former mayoral candidate. [Full Story](#)

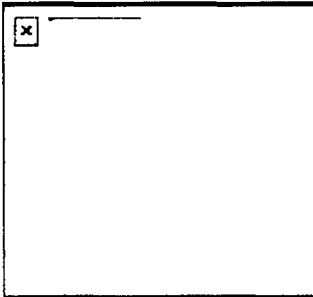
Three-Week Spending Measure Sent to President

The Senate cleared a three-week continuing resolution for the president's signature Thursday, with nine conservative Republicans opposing because it didn't cut spending enough, and three Democrats and Sen. Bernie Sanders (I-Vt.) opposing because it cut too much. [Full Story](#)

House Supports Ending Federal Funding for NPR

The House voted Thursday to pass a bill that would ban National Public Radio from receiving federal funds, a move that quickly drew sharp attacks from Democrats. [Full Story](#)

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From: Roll Call <rollcall@e.rollcall.com>
Sent: Friday, March 18, 2011 8:02 AM
To: Schmidt, Rebecca
Subject: Latest News From Roll Call Politics



Friday, Mar. 18, 2011

Politics

Fimian Ponders Third Challenge to Connolly

Virginia Republican Keith Fimian said Thursday he will run against Rep. Gerry Connolly (D) for a third straight election unless a rumored incumbent-protection redistricting map is approved by the state Legislature. [Full Story](#)



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From: Schmidt, Rebecca
Sent: Friday, March 18, 2011 9:00 AM
To: Batkin, Joshua
Subject: Re: 18th floor

Yes

----- Original Message -----

From: Batkin, Joshua
To: Schmidt, Rebecca
Cc: Powell, Amy; Droggitis, Spiros
Sent: Fri Mar 18 08:59:16 2011
Subject: Re: 18th floor

Staff?

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

----- Original Message -----

From: Schmidt, Rebecca
To: Batkin, Joshua
Cc: Powell, Amy; Droggitis, Spiros
Sent: Fri Mar 18 08:57:54 2011
Subject: 18th floor

Can I setup a short meeting this afternoon to tell them what we hhave been doing with the hill. I don't want to listen to the complaints

From: Borchardt, Bill
Sent: Friday, March 18, 2011 9:08 AM
To: Schmidt, Rebecca
Subject: Re: I'm in senate chef

So are we
Bill Borchardt
Via blackberry

----- Original Message -----

From: Schmidt, Rebecca
To: Borchardt, Bill; Sheron, Brian
Sent: Fri Mar 18 09:06:59 2011
Subject: I'm in senate chef

Basement of dirksen

From: Batkin, Joshua
Sent: Friday, March 18, 2011 9:16 AM
To: Droggitis, Spiros
Subject: Re: 18th floor

Standby

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

----- Original Message -----

From: Droggitis, Spiros
To: Batkin, Joshua; Schmidt, Rebecca
Cc: Powell, Amy
Sent: Fri Mar 18 09:11:10 2011
Subject: Re: 18th floor

Call me 415-1777

----- Original Message -----

From: Batkin, Joshua
To: Schmidt, Rebecca
Cc: Powell, Amy; Droggitis, Spiros
Sent: Fri Mar 18 08:59:16 2011
Subject: Re: 18th floor

Staff?

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

----- Original Message -----

From: Schmidt, Rebecca
To: Batkin, Joshua
Cc: Powell, Amy; Droggitis, Spiros
Sent: Fri Mar 18 08:57:54 2011
Subject: 18th floor

Can I setup a short meeting this afternoon to tell them what we hhave been doing with the hill. I don't want to listen to the complaints

From: Belmore, Nancy
Sent: Friday, March 18, 2011 11:04 AM
To: Schmidt, Rebecca
Subject: FW: Cancel Periodics on Monday Morning

Nancy Belmore
Office of Congressional Affairs
U.S. Nuclear Regulatory Commission
nancy.belmore@nrc.gov
301-415-1776

From: Pace, Patti
Sent: Friday, March 18, 2011 10:56 AM
To: Belmore, Nancy; Quesenberry, Jeannette; Garland, Stephanie; Cianci, Sandra; Hudson, Sharon; Ellis, Marv; Wright, Darlene; Lewis, Antoinette
Cc: Speiser, Herald
Subject: Cancel Periodics on Monday Morning

Good Morning,

Please cancel the periodic that your boss has scheduled with Chairman Jaczko for the morning of March 21st.

Thanks!

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: OCA_Web Resource <OCA_Web.Resource@nrc.gov>
Sent: Friday, March 18, 2011 11:58 AM
To: Droggitis, Spiros; Belmore, Nancy
Subject: FW: REFF-Wall Street 2011 Program Announced

From: American Council on Renewable Energy[SMTP:EVENTS@ACORE.ORG]
Sent: Friday, March 18, 2011 11:58:06 AM
To: OCA_Web Resource
Subject: REFF-Wall Street 2011 Program Announced
Auto forwarded by a Rule

To view this email as a web page, [click here](#)

REFF-Wall Street Program Announced

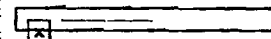
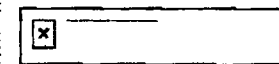
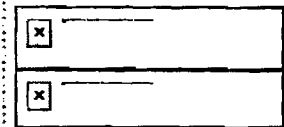
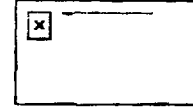
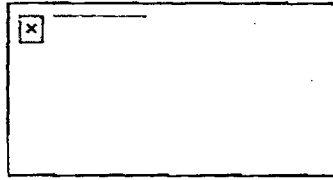
**The Premier Renewable Energy Investment & Finance
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Renewable Energy Finance Forum - Wall Street
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Dear Spiros,

We are delighted to announce the program for the 8th annual Renewable Energy Finance Forum-Wall Street, in New York City, June 21-22.

Since its inception in 2004, REFF-Wall Street has established itself as *the* definitive event in the renewable energy investment and finance sector. This year speakers will bring their expertise and leadership to debate the key challenges facing the renewable energy sector, and identify lucrative future business prospects going forward.

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Up To \$300**



Putting Renewable Energy in Perspective: Market Drivers

As the economic recovery continues, it is important to understand the changing global energy mix, and where renewable energy fits. With oil prices rising, the onset of growth in natural gas markets, and continuing global demand for coal, this session will put renewable energy into perspective.



Solar PV and Other DG Markets, Investment & Finance

With minimal technology risk, projects remain attractive to investors. This session will address the key issues faced in financing PV projects in the U.S.



Utility Scale Solar PV and Solar Thermal Energy

Success stories with a frank account of challenges overcome, showing you these projects are viable with the right expertise. In addition, the session will cover utility-scale PV financing and the difficulties in financing the scale-up.



Renewable Electricity: Wind Power & Geothermal

The makeup of the renewable energy markets is changing. Wind power, once the stalwart of renewable energy in the U.S., is now a mature market and seems to be in momentary decline. By contrast, the geothermal power pipeline is at 7 GW and growing. Hydropower keeps moving ahead and ocean power is coming out of R&D into commercialization. This session will explore the changing state of play in these markets.



Renewable Fuels Outlook, Investment & Finance

Following insight from the major investment banking players and project financiers in the renewable energy sector, this panel will focus on the financing of renewable energy projects from a producer's point of view.



Global Financial Markets: How Investment Banks See It

This session brings you the latest from Wall Street's major investment banks, who are all actively leading deals in the renewable sector. Hear how the global financial landscape has changed, and how the markets are rebounding following the economic downturn.



Unlocking Project Finance: Today & Tomorrow

Having heard from the best and brightest in Wall Street's investment banking community, this session will dig deeper into the financial structuring of renewable energy projects. This session will compare different financial models and their outlooks as we move forward.



Venture Capital & Private Equity Perspectives

A panel of leading venture capitalists and private equity players will give their perspectives on investing in renewable energy companies, answering your questions.



Identifying New Revenue Streams for Renewable Energy

This new session for REFF-Wall Street 2011 will examine emerging revenue streams, and how they relate to the effective development and deployment of renewable energy.



We look forward to seeing you at **REFF-Wall Street** in New York City.

P.S. For further information on how you could benefit from being a sponsor, contact **Chris White** or **Tom Weirich**.

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From: Schmidt, Rebecca
Sent: Friday, March 18, 2011 1:39 PM
To: Shane, Raeann
Subject: Re: Still in briefing

Thanks

----- Original Message -----

From: Shane, Raeann
To: Schmidt, Rebecca; Powell, Amy
Sent: Fri Mar 18 13:34:19 2011
Subject: RE: Still in briefing

Thanks. Annie got me so upset yesterday I forgot to call him. I just sent him an email.

Raeann

-----Original Message-----

From: Schmidt, Rebecca
Sent: Friday, March 18, 2011 1:27 PM
To: Shane, Raeann; Powell, Amy
Subject: Still in briefing

With E and C but peter spencer would like to ask you questions about the press release and the rems. He will setup a conference call with jeff baren. Just give him a call and he will set a time. His number is 202 226 2424 or send him an email

From: Schmidt, Rebecca
Sent: Friday, March 18, 2011 4:05 PM
To: 'lopattjt@westinghouse.com'
Subject: Re: stress

Understand. Finally a question I can answer. Sue is your person. I will send you her phone number

From: Lopatto, Jeanne T. <lopattjt@westinghouse.com>
To: Schmidt, Rebecca
Sent: Fri Mar 18 15:59:54 2011
Subject: stress

Of all the questions I could ask you this week, the most important one is, do you have a recommendation for a needlework finisher -- I finally finished that project we bought in Chicago and want to get it framed as a picture. Do you know anyone who might do a good job?

Other than that, nothing really matters.

Jeanne T. Lopatto
Vice President
Government and International Affairs
Westinghouse Electric Company
900 19th Street, NW
Suite 350
Washington, D.C. 20006
Phone: (202) 945-6410
Fax: (202) 945-6404
Email: lopattjt@westinghouse.com
Home Page: www.westinghousenuclear.com

From: Schmidt, Rebecca
Sent: Friday, March 18, 2011 4:29 PM
To: Leeds, Eric
Subject: Re: Please call me

Spiros will call you and give you the scoop

From: Leeds, Eric
To: Schmidt, Rebecca; Johnson, Michael
Sent: Fri Mar 18 16:27:31 2011
Subject: Please call me

Re: Intelligence on daily call with the hill staffers.

Eric J. Leeds, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
301-415-1270

From: Powell, Amy
Sent: Friday, March 18, 2011 9:21 PM
To: Schmidt, Rebecca
Subject: Out of Office: Sen. Murkowski's staff, radiation tracking

The week of March 21, 2011, I will be on business travel, returning to the office Thursday, March 24, 2011. I will be checking e-mails regularly from the road. If you need immediate assistance from Congressional Affairs, please call 301-415-1776.

Thanks,

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

~~Withhold - Draft SER (Pre-Decisional)~~

Munson, Clifford

From: Cook, Christopher
Sent: Friday, March 11, 2011 2:30 PM
To: Karas, Rebecca; Munson, Clifford
Subject: FW: DRAFT mudmat COLA changes
Attachments: VEGP-VOL-Ch02 mudmat DEP - draft 20110311.pdf

Importance: High

FYI

-----Original Message-----

From: Joshi, Ravindra
Sent: Friday, March 11, 2011 12:21 PM
To: Wang, Weijun; Tegeler, Bret
Cc: Shams, Mohamed; Cook, Christopher; Cruz, Jeffrey
Subject: FW: DRAFT mudmat COLA changes
Importance: High

To All,

(b)(5)

Thanks,

Ravi

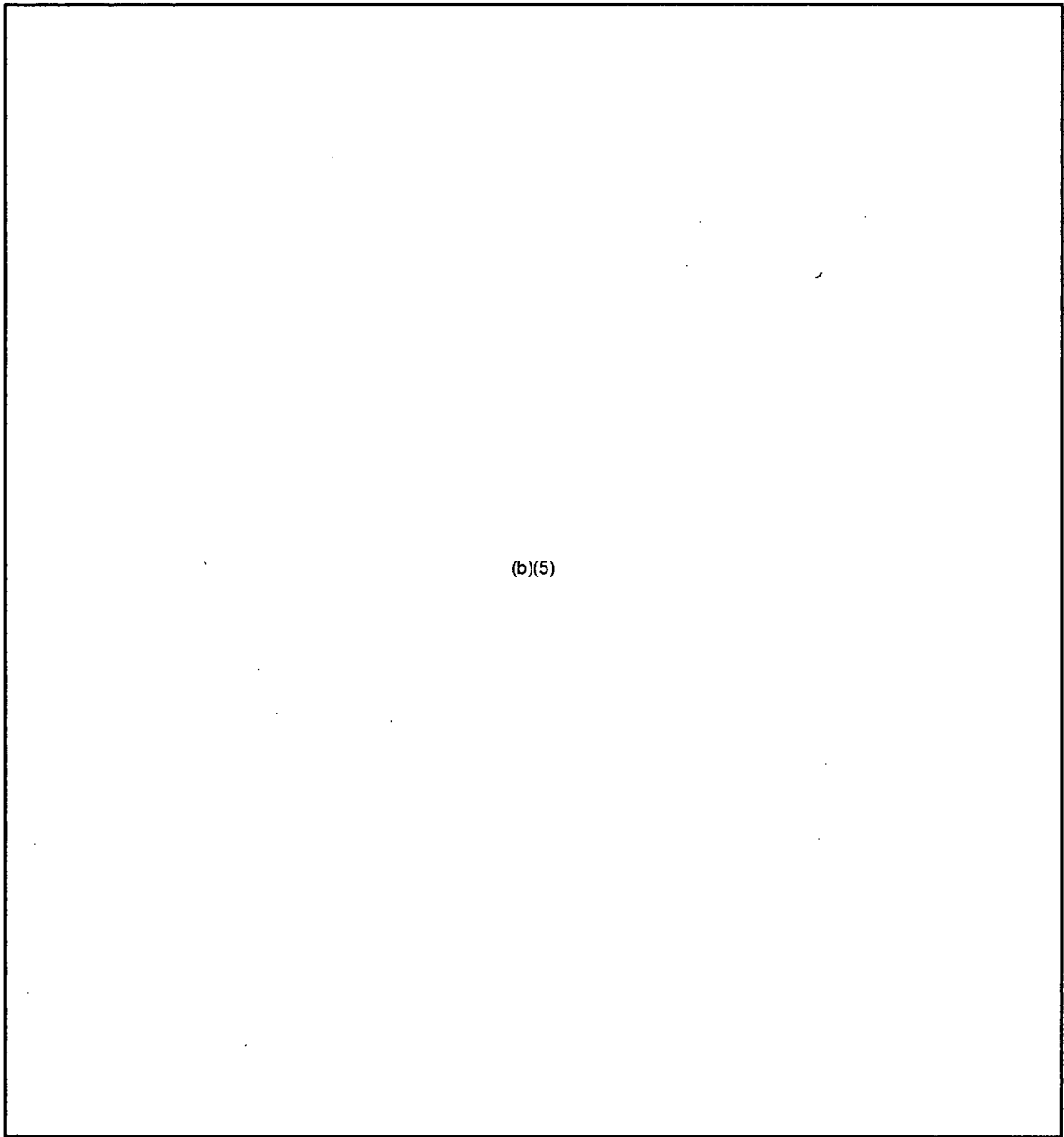
-----Original Message-----

From: Aughtman, Amy G. [mailto: (b)(6)]
Sent: Friday, March 11, 2011 12:02 PM
To: Joshi, Ravindra
Cc: Eddie Grant; Richard Grumbir; Sparkman, Wesley A.
Subject: DRAFT mudmat COLA changes
Importance: High

Ravi

(b)(5)

Amy A.



(b)(5)

Charles R. Pierce

(b)(5)

DRAFT

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

From: [Dube, Donald](#)
To: [Williams, Donna](#)
Cc: [Clark, Theresa](#); [Lombard, Mark](#); [Ader, Charles](#); [Johnson, Michael](#); [Holahan, Gary](#)
Subject: draft slides for NRO all-hands
Date: Friday, March 11, 2011 10:24:20 AM
Attachments: [NRO all-hands 032311_rev 2.pptx](#)
Importance: High

Donna; attached are draft slides for the March 23 meeting. I believe this strikes the right balance between the background for a wide audience, introducing the issues, and where the Commission has directed us. The presentation should fit into a 15-minute slot.

I'll be at the PSA 2011 conference March 13-17, but will be in on the 18th to make any last minute changes, or Theresa might handle any minor editorial kinds of revisions,

Don

Modifying the Risk-Informed Regulatory Framework for New Reactors

Donald A. Dube, PhD
Senior Technical Advisor
Division of Safety Systems & Risk Assessment

NRO All-Hands Meeting
March 23, 2011





U.S.NRC
UNITED STATES NUCLEAR REGULATORY COMMISSION
Protecting People and the Environment

Outline

- **Commission Policy**
- **Risk Comparisons**
- **Issues for New Reactors**
- **Commission SRM on SECY-10-0121**
- **Next Steps**

DN 999 01 1092



What is Probabilistic Risk Assessment (PRA) ?

The “risk triplet”:

1. What can go wrong?
2. How likely is it?
3. What are the consequences (impact on the plant or on people)?



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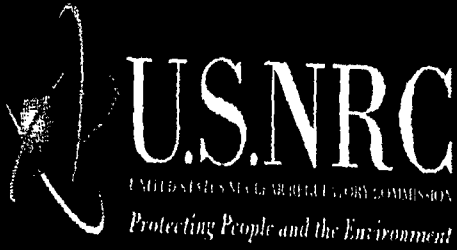
Excerpts from Commission Policy Statements

The Commission “fully expects that vendors engaged in designing new standard (or custom) plants will achieve a higher standard of severe accident safety performance than their prior designs.”

- August 1985

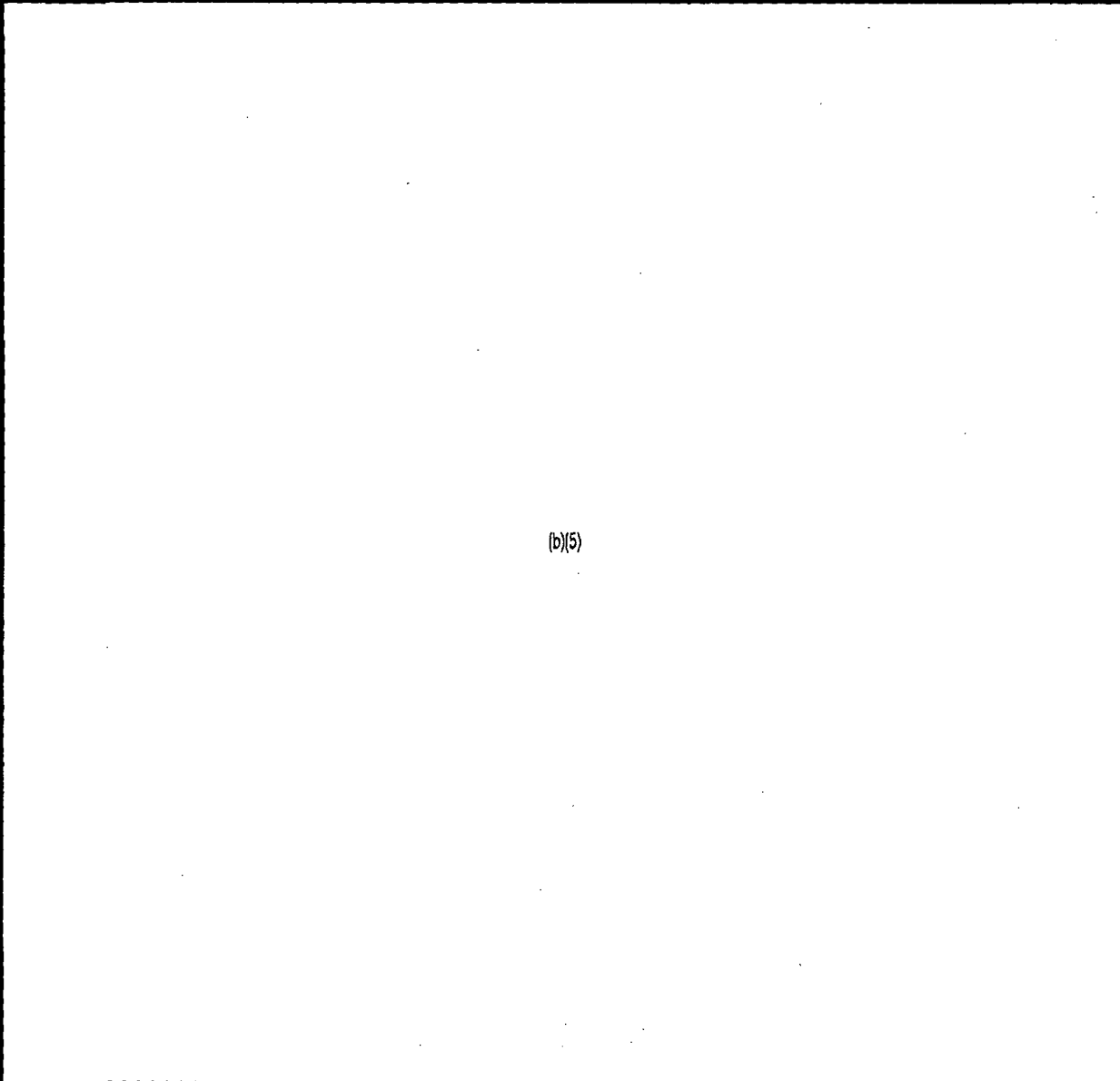
“The Commission expects that advanced reactors will provide enhanced margins of safety and/or utilize simplified, inherent, passive, or other innovative means to accomplish their safety functions.”

- July 1994

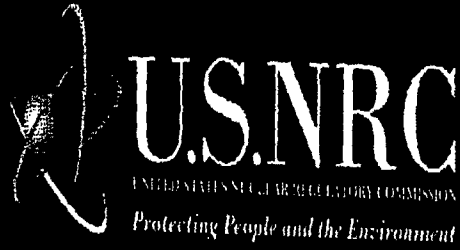


Some Enhanced Features for New Reactors

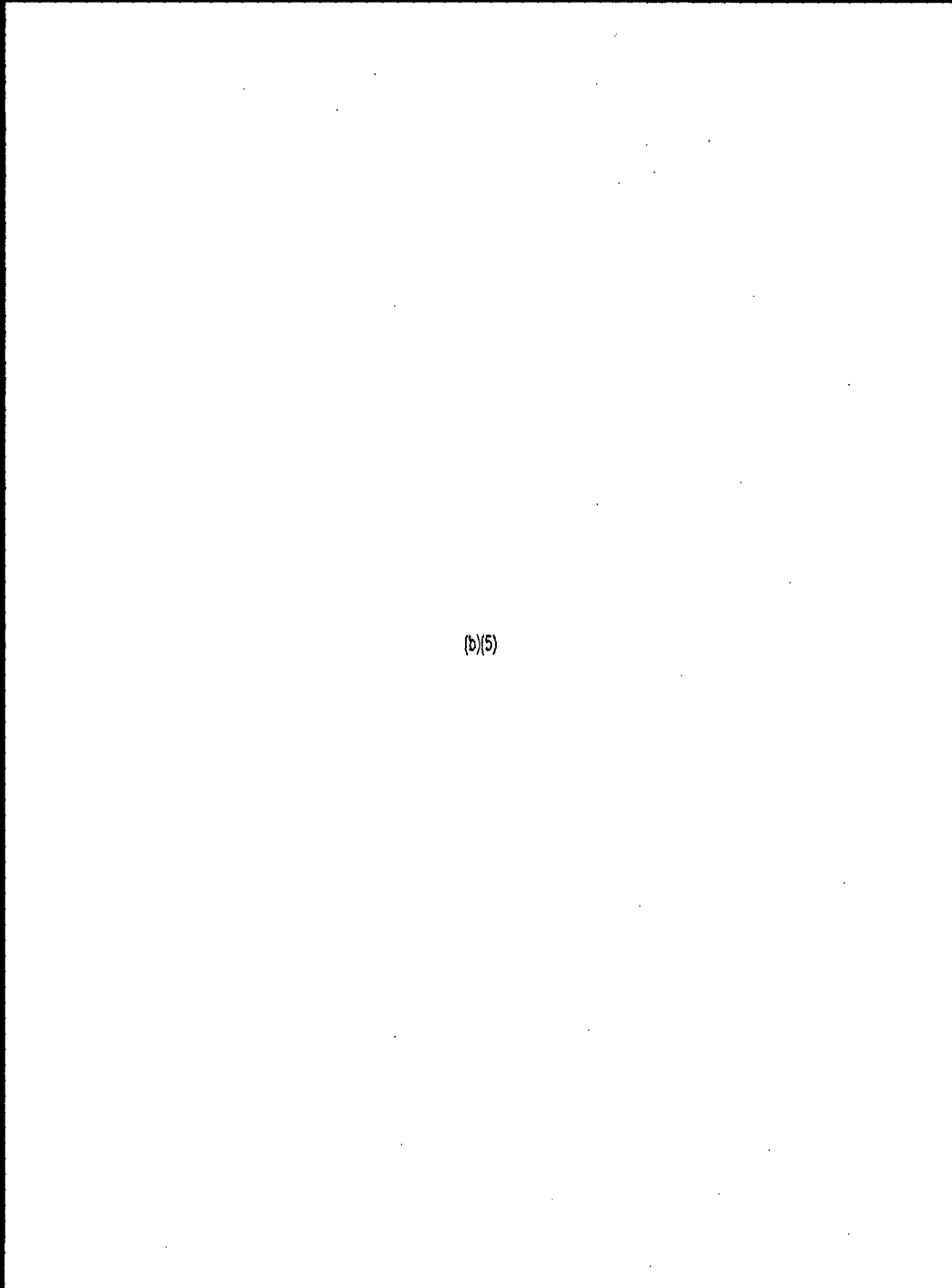
All new designs



(b)(5)



Representative Core Damage Frequencies (CDF) with Uncertainties



(b)(5)



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Issues for New Reactors

**“White paper” sent to Commissioners in early 2009
identified issues with applying current risk framework**

(b)(5)



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Risk-Informed Licensing Basis Change

(b)(5)



U.S.NRC

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Staff 's Risk Framework Options in SECY-10-0121

1)

2)

3)

(b)(5)



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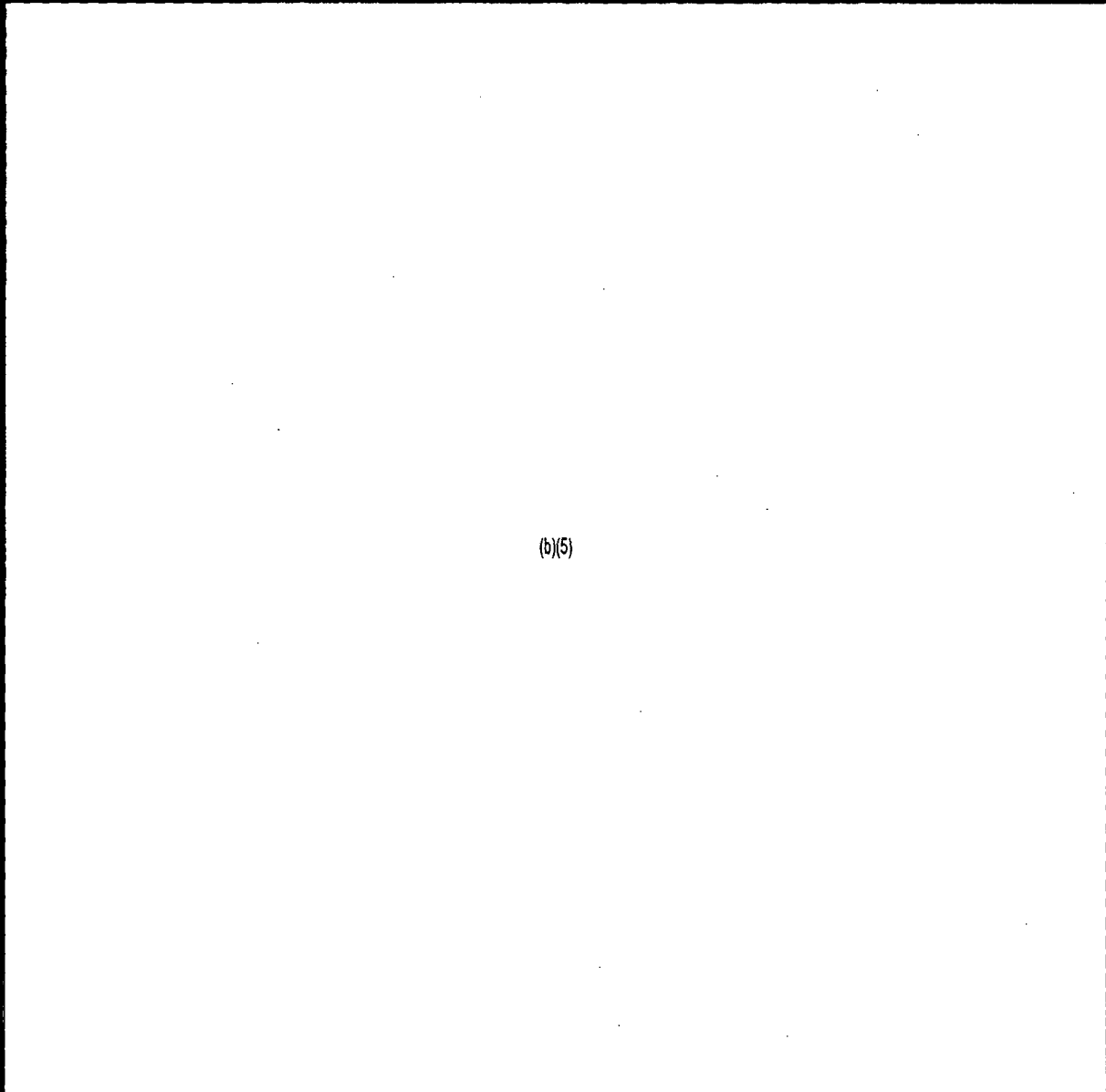
Commission SRM

(b)(5)



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Next Steps



(b)(5)

From: Lewis, Robert
To: Jaczko, Gregory
Cc: Virgilio, Martin; Weber, Michael; Johnson, Michael; Miller, Charles; Moore, Scott; Cool, Donald; Tappert, John; Borchardt, Bill; Wiggins, Jim; Carpenter, Cynthia; Ordaz, Vonna; Batkin, Joshua; FOIA Response.hoc Resource; Coggins, Angela; Lubinski, John; Zimmerman, Roy; Moore, Scott
Subject: draft approach to considering relaxing protective actions
Date: Tuesday, March 22, 2011 6:33:26 AM
Attachments: Relaxing protective action criteria EDITS 03-22-2011.doc

Chairman Jaczko

In response to your request, the PMT and ET developed the attached approach to potentially relax the protective action recommendations, particularly the 50 mile evacuation recommendation.

This could become a potential deputies' meeting discussion topic.

- Rob

Q:

(b)(5)

A:

(b)(5)

Explanation

(b)(5)

(b)(5)

CRITERIA

1.

2.

3.

(b)(5)

M:\PMT\Relaxing protective action criteria.doc

From: Carneal, Jason
Sent: Monday, March 14, 2011 9:33 PM
To: ODriscoll, James; Jackson, Christopher
Cc: McKirgan, John
Subject: RE: EPR 6.5 chapter day HVAC ITAAC OGC question

Jim:

Thanks for the clarification. I agree with the approach of tracking it in Chapter 6 if we decide to ask for it at all.

(b)(5)

Thanks,

Jason

From: ODriscoll, James
Sent: Monday, March 14, 2011 4:22 PM
To: Carneal, Jason; Jackson, Christopher
Cc: McKirgan, John
Subject: RE: EPR 6.5 chapter day HVAC ITAAC OGC question

Jason

(b)(5)

From: Carneal, Jason
Sent: Monday, March 14, 2011 3:59 PM
To: ODriscoll, James; Jackson, Christopher
Cc: McKirgan, John
Subject: RE: EPR 6.5 chapter day HVAC ITAAC OGC question

Jim:

(b)(5)

I've seen it both ways in the SERs for other Chapters.

Thanks.

Jason

From: ODriscoll, James

Sent: Monday, March 14, 2011 2:57 PM

To: Carneal, Jason; Jackson, Christopher

Cc: McKirgan, John

Subject: EPR 6.5 chapter day HVAC ITAAC OGC question

Chris,

I think the SER paragraph under "summary of Application should be changed as follows to address Bob's comment:

(b)(5)

Please let me know what you think.

Thanks,

Jim

From: Wagage, Harry
Sent: Tuesday, March 15, 2011 8:29 PM
To: McKirgan, John; Jackson, Christopher
Subject: AP1000 PCS SS time delay Audit Report.doc

Chris and John,

Enclosed is the audit summary for your review and comment.

Harry

AP1000 DCD REVISION 18

EMERGENCY CORE COOLING SYSTEMS SUCTION STRAINER REVIEW

AUDIT SUMMARY

1. Background

The staff performed an audit of the Westinghouse AP1000 Design Certification Document change to address modeling update on the delay in establishing Passive Containment Cooling System (PCS) water coverage of the containment shell. The applicant updated its modeling to correct the time for PCS to begin steady state film coverage of the containment vessel shell, which is determined using a scaling factor from AP600 full scale 1/8 sector testing.

The staff performed this audit at the Westinghouse Office in Rockville, MD on February 22 and March 4, 2011. The audit team consisted of the following NRC staff members:

Harry Wagage, NRC Technical Staff
David Jaffe, NRC Licensing

2. Objective

The objective of the audit was for the staff to review a calculation report supporting Westinghouse assessment of the impact of the change in delay in establishing PCS after a design basis accident as documented in APP-GW-GLR-096, "Evaluation of the Effect of the AP1000 Enhanced Shield Building Design on the Containment Response and Safety Analysis," Revision 2.

3. Regulatory Basis

This regulatory audit was based on the following:

- GDC 38, "Containment Heat Removal," as it relates to the ability of the containment heat removal system to rapidly reduce the containment pressure and temperature following a loss-of-coolant accident (LOCA) and to maintain them at acceptably low levels.
- GDC 50, "Containment Design Basis," as it relates to demonstrating sufficient margin in accident analysis.
- 10 CFR 52.47(c)(2) and 10 CFR 50.43(e), as they relates to design certification analysis and testing in support of a passive plant design.

4. Documents Audited

The NRC staff reviewed the following documents during the audit:

Westinghouse Document No. APP-SSAR-GSC-193, "Scaling Calculation for Time to Steady State PCS Film Coverage for AP1000 Containment Pressure and Temperature Response Analysis," Revision 0, dated February 2011 and Revision 2, dated March 2011

5. Audit Activities

On February 22, 2011, the staff audited Revision 0 of APP-SSAR-GSC-193, which supports APP-GW-GLR-096, Revision 2. APP-SSAR-GSC-193 addresses the following issues:

- Issue 1 on steady state PCS water coverage as reported in Westinghouse Corrective Action Process Issue Report 10-340-M025, "Scaling Calculation Incorrect for Determining Time to Achieve Steady State Water Coverage," and
- Issue 2 on containment shell coated with epoxy for a short distance above the operating deck as reported in Westinghouse Corrective Action Process Issue Report 10-350-M060"

APP-SSAR-GSC-193, reports that after changing the containment analysis model to address the above two issues, the peak containment pressure of the bounding design basis accident (DBA) increased to 58.04 psig, which is consistent with APP-GW-GLR-096, Revision 2. APP-SSAR-GSC-193 reports that the impact on the peak containment pressure of the bounding DBA is an increase less than 0.05 psi.

The staff noted that a draft version of APP-GW-GLR-096, Revision 2, which the applicant provided to the staff, discusses only Issue 1 but not Issue 2. Therefore, the staff raised a concern and requested the applicant to provide results showing the impact from Issue 1. In response, in APP-SSAR-GSC-193, Revision 1, the applicant added a sensitivity case to provide the impact from issue 1.

On March 4, 2011, the staff audited APP-SSAR-GSC-193, Revision 1. This document reported that as a result of modeling change to address only Issue 1, the peak containment pressure of the bounding DBA increased to 58.034 psig; the impact from Issue 2 was an increase of pressure by 0.01 psi, which is less than that reported in APP-SSAR-GSC-193, Revision 0. This resolved the staff's concern.

During the audit, the staff determined that APP-SSAR-GSC-193, Revision 1, provides supporting documentation for APP-GW-GLR-096, Revision 2, which addresses the delay in establishing PCS coverage of the containment shell.

7. Action Items

None

From: ODriscoll, James
Sent: Tuesday, March 15, 2011 8:59 PM
To: Grady, Anne-Marie; Hart, Michelle; Jackson, Christopher
Subject: Meeting to discuss EPR secondary containment

Ann-Marie/Michelle,

Chris asked me to schedule a meeting to discuss the issue related to the attached email. I'm in all week except Wed. Please let me know your availability and I'll schedule a time.

Thanks,
Jim

From: Ashley, Clinton
Sent: Wednesday, March 16, 2011 1:09 AM
To: Lu, Shanlai; Budzynski, John; Carneal, Jason
Cc: McKirgan, John; Jackson, Christopher
Subject: FW: DRAFT Response to U.S. EPR Design Certification Application RAI No. 416, FSAR Ch. 6, Question 06.03-15

John B, Shanlai -

I find this draft RAI response incomplete for the following reasons

- 1)
- 2)
- 3)

Clint

(b)(5)

Handwritten signature/initials

From: WELLS Russell (AREVA) [mailto:Russell.Wells@areva.com]
Sent: Wednesday, March 09, 2011 5:07 PM
To: Tesfaye, Getachew
Cc: BENNETT Kathy (AREVA); DELANO Karen (AREVA); ROMINE Judy (AREVA); GUCWA Len (EXTERNAL AREVA); RANSOM James (AREVA); BROWNSON Doug (AREVA); BALLARD Bob (AREVA); HALLINGER Pat (EXTERNAL AREVA); RYAN Tom (AREVA); WILLIFORD Dennis (AREVA)
Subject: DRAFT Response to U.S. EPR Design Certification Application RAI No. 416, FSAR Ch. 6, Question 06.03-15

Getachew,

Attached is a draft response for RAI No. 416, Question 06.03-15 in advance of the final response date April 7, 2011 as shown below.

Let me know if the staff has questions or if this can be sent as a final response.

Sincerely,

Russ Wells
U.S. EPR Design Certification Licensing Manager
AREVA NP, Inc.
3315 Old Forest Road, P.O. Box 10935
Mail Stop OF-57
Lynchburg, VA 24506-0935
Phone: 434-832-3884 (work)
[(b)(6) (cell)] E x 6
Fax: 434-382-3884
Russell.Wells@Areva.com

From: BRYAN Martin (External RS/NB)
Sent: Friday, February 11, 2011 8:06 PM
To: Getachew.Tesfaye@nrc.gov
Cc: DELANO Karen (RS/NB); ROMINE Judy (RS/NB); BENNETT Kathy (RS/NB); GUCWA Len (External RS/NB)
Subject: Response to U.S. EPR Design Certification Application RAI No. 416, FSAR Ch. 6, Supplement 2

Getachew,

AREVA NP Inc. (AREVA NP) provided a schedule for a technically correct and complete response to RAI 416 on August 25, 2010. Supplement 1 response to RAI 416 was sent on November 5, 2010 and provided a response to 2 of the 3 questions.

The response schedule for Question 06.03-15 is changed as shown below to provide additional opportunity to interact with the NRC staff.

Question #	Response Date
RAI 416 — 06.03-15	April 7, 2011

Sincerely,

Martin (Marty) C. Bryan
U.S. EPR Design Certification Licensing Manager
AREVA NP Inc.
Tel: (434) 832-3016
[(b)(6) (cell)] E x 6
Martin.Bryan.ext@areva.com

From: BRYAN Martin (External RS/NB)
Sent: Friday, November 05, 2010 7:54 AM
To: 'Tesfaye, Getachew'
Cc: DELANO Karen (RS/NB); ROMINE Judy (RS/NB); BENNETT Kathy (RS/NB); GUCWA Len (External RS/NB)
Subject: Response to U.S. EPR Design Certification Application RAI No. 416, FSAR Ch. 6, Supplement 1

Getachew,

AREVA NP Inc. (AREVA NP) provided a schedule for a technically correct and complete response to RAI 416 on August 25, 2010. The attached file, "RAI 416 Supplement 1 Response US EPR DC.pdf" provides technically correct and complete responses to 2 of the 3 remaining questions, as committed. Appended to this

file are affected pages of the U.S. EPR Final Safety Analysis Report in redline-strikeout format which support the response to RAI 416 Question 06.02.01-94.

The following table indicates the respective pages in the response document, "RAI 416 Supplement 1 Response US EPR DC.pdf," that contain AREVA NP's response to the subject questions.

Question #	Start Page	End Page
RAI 416 — 06.02.01-94	2	31
RAI 416 — 06.02.01-95	32	35

The response schedule for Question 06.03-15 is changed to provide additional opportunity to interact with the NRC staff as shown below.

Question #	Response Date
RAI 416 — 06.03-15	February 24, 2011

Sincerely,

Martin (Marty) C. Bryan
 U.S. EPR Design Certification Licensing Manager
 AREVA NP Inc.
 Tel: (434) 832-3016
 (b)(6) cell [initials]
Martin.Bryan.ext@areva.com

From: BRYAN Martin (External RS/NB)
Sent: Wednesday, August 25, 2010 8:13 PM
To: 'Tefaye, Getachew'
Cc: DELANO Karen (RS/NB); ROMINE Judy (RS/NB); BENNETT Kathy (RS/NB); GUCWA Len (External RS/NB)
Subject: Response to U.S. EPR Design Certification Application RAI No. 416, FSAR Ch. 6

Getachew,

Attached please find AREVA NP Inc.'s response to the subject request for additional information (RAI). The attached file, "RAI 416 Response US EPR DC.pdf" provides a schedule since a technically correct and complete response to the 3 questions cannot be provided at this time.

The following table indicates the respective pages in the response document, "RAI 416 Response US EPR DC.pdf," that contains AREVA NP's response to the subject questions.

Question #	Start Page	End Page
RAI 416 — 06.02.01-94	2	3
RAI 416 — 06.02.01-95	4	4
RAI 416 — 06.03-15	5	6

A complete answer is not provided for 3 of the 3 questions. The schedule for a technically correct and complete response to these questions is provided below.

Question #	Response Date
RAI 416 — 06.02.01-94	November 6, 2010
RAI 416 — 06.02.01-95	November 6, 2010

Sincerely,

Martin (Marty) C. Bryan
U.S. EPR Design Certification Licensing Manager
AREVA NP Inc.
Tel: (434) 832-3016
(b)(6) cell
Martin.Bryan.ext@areva.com

From: Tesfaye, Getachew [mailto:Getachew.Tesfaye@nrc.gov]

Sent: Monday, July 26, 2010 6:52 AM

To: ZZ-DL-A-USEPR-DL

Cc: Peng, Shie-Jeng; Jackson, Christopher; McKirgan, John; Ashley, Clinton; Lu, Shanlai; Donoghue, Joseph; Carneal, Jason; Colaccino, Joseph

Subject: U.S. EPR Design Certification Application RAI No. 416(4767,4749),FSAR Ch. 6

Attached please find the subject requests for additional information (RAI). A draft of the RAI was provided to you on June 6, and discussed with your staff on June 30, 2010. No change is made to the draft RAI as a result of that discussion. The schedule we have established for review of your application assumes technically correct and complete responses within 30 days of receipt of RAIs. For any RAIs that cannot be answered within 30 days, it is expected that a date for receipt of this information will be provided to the staff within the 30 day period so that the staff can assess how this information will impact the published schedule.

Thanks,
Getachew Tesfaye
Sr. Project Manager
NRO/DNRL/NARP
(301) 415-3361

**Response to
Request for Additional Information No. 416(4767, 4749), Revision 1**

7/26/2010

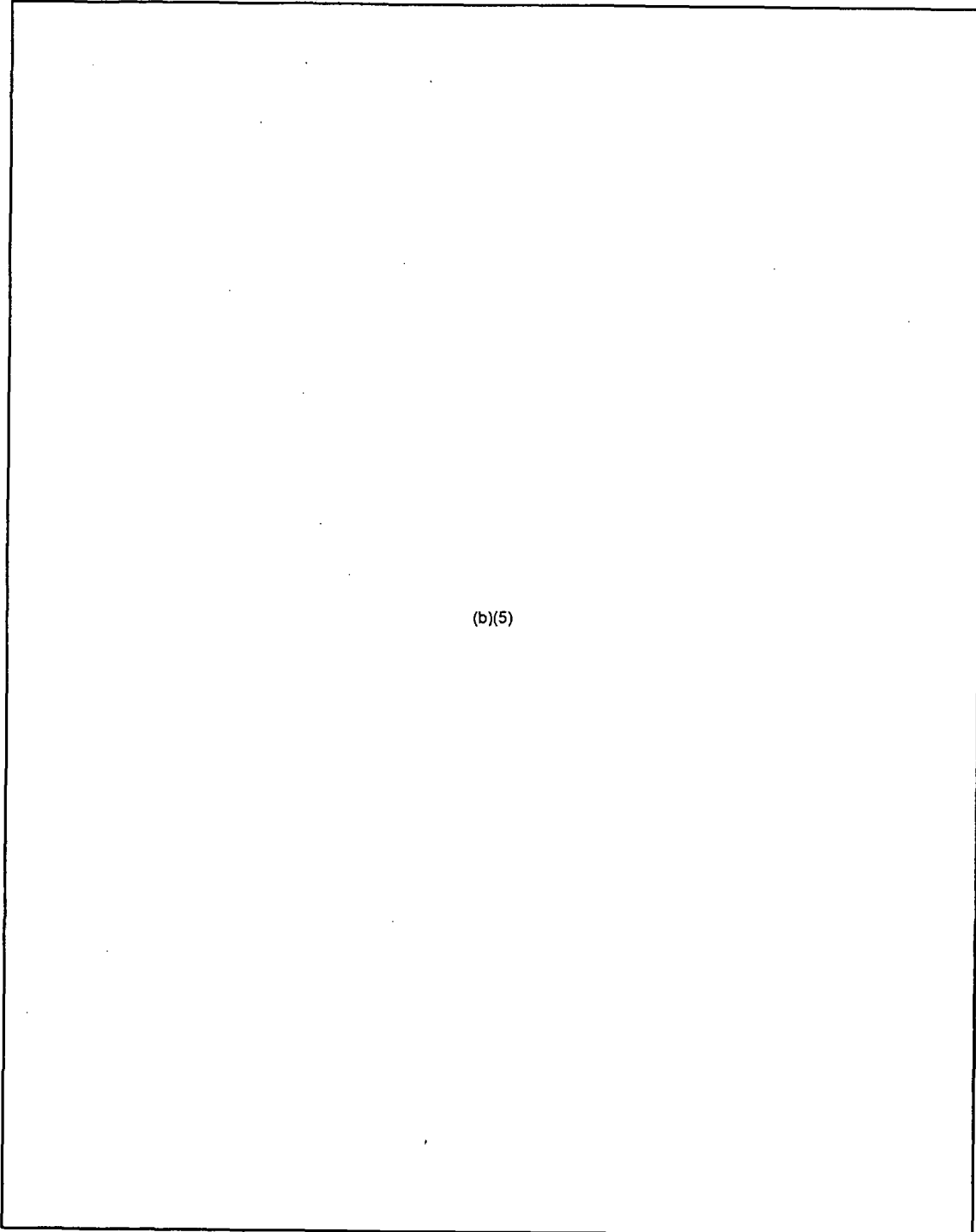
**U.S. EPR Standard Design Certification
AREVA NP Inc.
Docket No. 52-020
SRP Section: 06.02.01 - Containment Functional Design
SRP Section: 06.03 - Emergency Core Cooling System**

Application Section: FSAR Chapter 6

**QUESTIONS for Containment and Ventilation Branch 1 (AP1000/EPR Projects)
(SPCV)
QUESTIONS for Reactor System, Nuclear Performance and Code Review (SRSB)**

Question 06.03-15:

Follow-up to RAI 212, Question 6.03-6



(b)(5)

Response to Question 06.03-15:

A. ECCS NPSH Evaluation Methodology

(b)(5)

1.

(b)(5)

2.

(b)(5)

B. Supplemental Information

The following is the additional information requested by the staff:

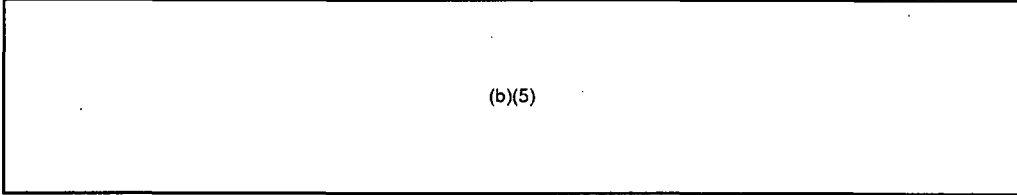
1.

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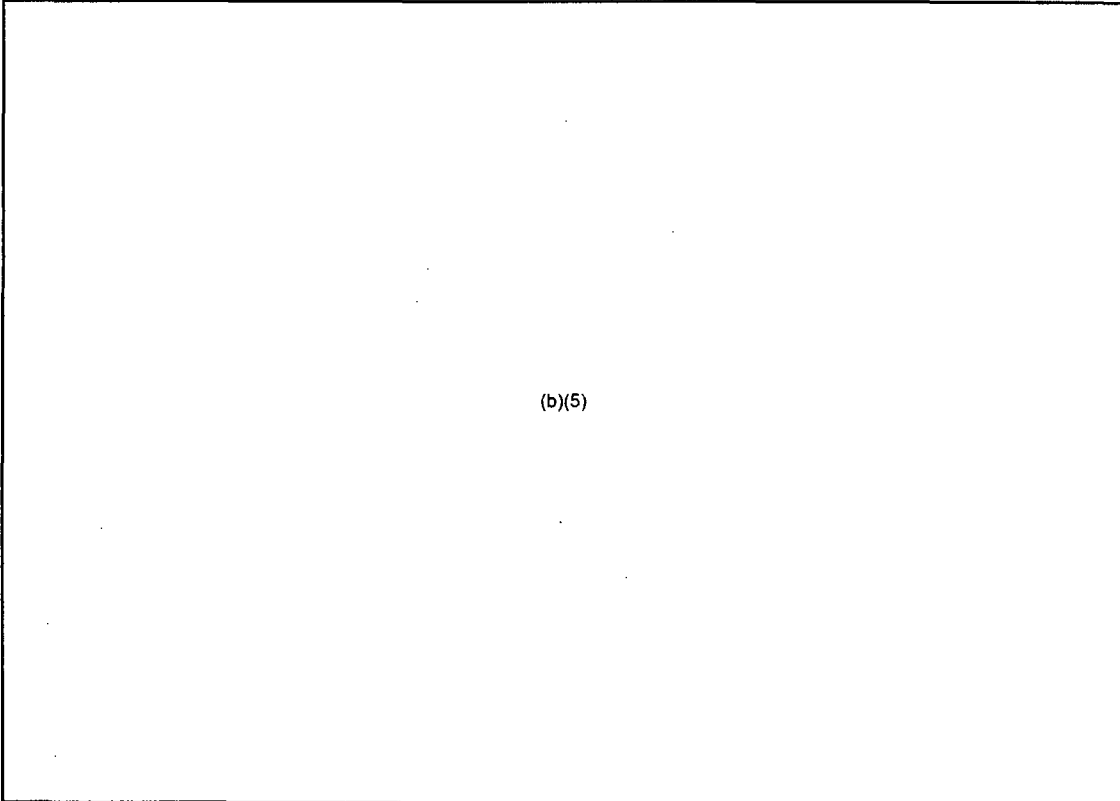
a)

(b)(5)

b)

c)  (b)(5)

Based on these results it is concluded that containment breach leading to a pressure boundary failure following a LOCA initiator is a low probability event ($< 5 \times 10^{-5}$).

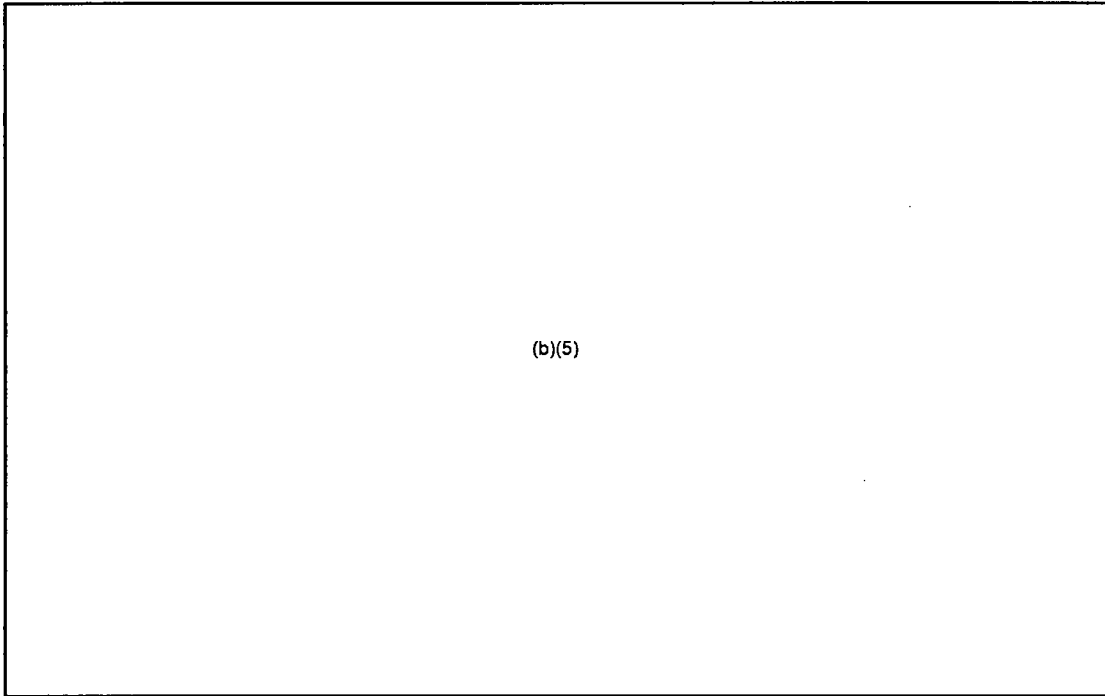
2.  (b)(5)

3.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

**Figure 06.03-15-1—Containment and IRWST Water Saturation Pressure for
Hot Leg LOCA**



From: Carneal, Jason

Sent: Wednesday, March 16, 2011 2:40 PM

To: ODriscoll, James

Cc: Jackson, Christopher; Hart, Michelle

Subject: SPCV follow-up items in Section 6.5.3

Jim:

We came across a couple of items during the Section 6.5.3 review that were containment branch items. I have attached a highlighted copy of the OGC comments on which that Michelle said we would need to confer with SPCV.

1.

2.

3.

(b)(5)

(b)(5)

Thanks,

Jason

JASON CARNEAL
PROJECT MANAGER
U.S. NUCLEAR REGULATORY COMMISSION
NRO/DNRL/NARP (T-6J4)
301-415-3813

(b)(5)



(b)(5)

6-131

(b)(5)

6-132

DK 985 of 1892

-----Original Appointment-----

From: Miller, Eric

Sent: Thursday, March 17, 2011 3:27 PM

To: Miller, Eric; Ashley, Clinton; Jensen, Walton; Drozd, Andrzej; Peng, Shie-Jeng; McKirgan, John

Cc: Jackson, Christopher

Subject: Update on Code Methodology recommendations regarding NPSH

When: Wednesday, March 23, 2011 1:00 PM-2:00 PM (GMT+01:00) Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna.

Where: John's Office (T-10F34)

When: Wednesday, March 23, 2011 8:00 AM-9:00 AM (GMT-05:00) Eastern Time (US & Canada).

Where: John's Office (T-10F34)

Note: The GMT offset above does not reflect daylight saving time adjustments.

~~*~*~*~*~*~*~*~*



} E.F.S

Containment ML09110052
eling for NPSI 10.pdf

NPSH Methodology Assumptions used in approved NRC Staff Safety Evaluation

Model Options
Heat Transfer

LY-5

(b)(5)

Revaporization Fraction

(b)(5)

Fog and Mist Modeling

(b)(5)

Jet and Drop Breakup Model

(b)(5)

Drop-Liquid Phase Conversion

(b)(5)

Structural Heat Sinks

(b)(5)

Ex 5

Containment Spray

(b)(5)

Heat Exchangers

(b)(5)

Fan Coolers

(b)(5)

Interfacial Area

(b)(5)

Break Flow Flashing

(b)(5)

Mass and Energy Calculations

(b)(5)

Single Failure

(b)(5)

NPSH for non-design basis events assumptions

(b)(5)

From: Jensen, Walton
Sent: Thursday, March 17, 2011 4:15 PM
To: McKirgan, John
Cc: Jackson, Christopher; Peng, Shie-Jeng
Subject:

John,

Here are the draft ACRS slides on the multi-node model, LOCA M&E, MSLB M%E and min. containment pressure. I borrowed some from Chris and put in lots of pictures since that seems to be what ACRS likes.
Walt



US-EPR CONTAINMENT EVALUATION

Containment Functional Design

SRP Section 6.2.1.1

Presented by Walton Jensen

(USNRC Staff)

(b)(5)

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Slide From AREVA Presentation

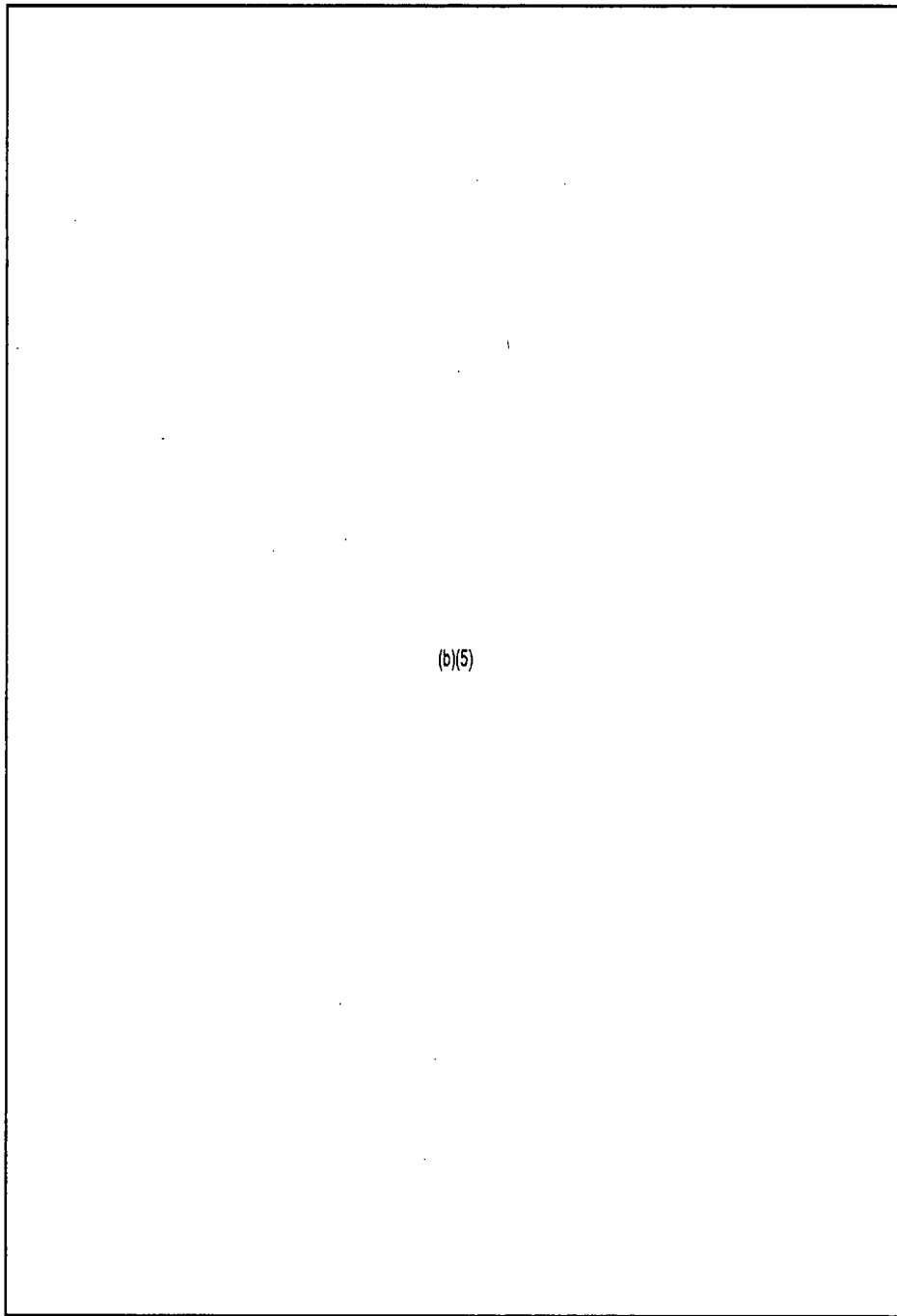


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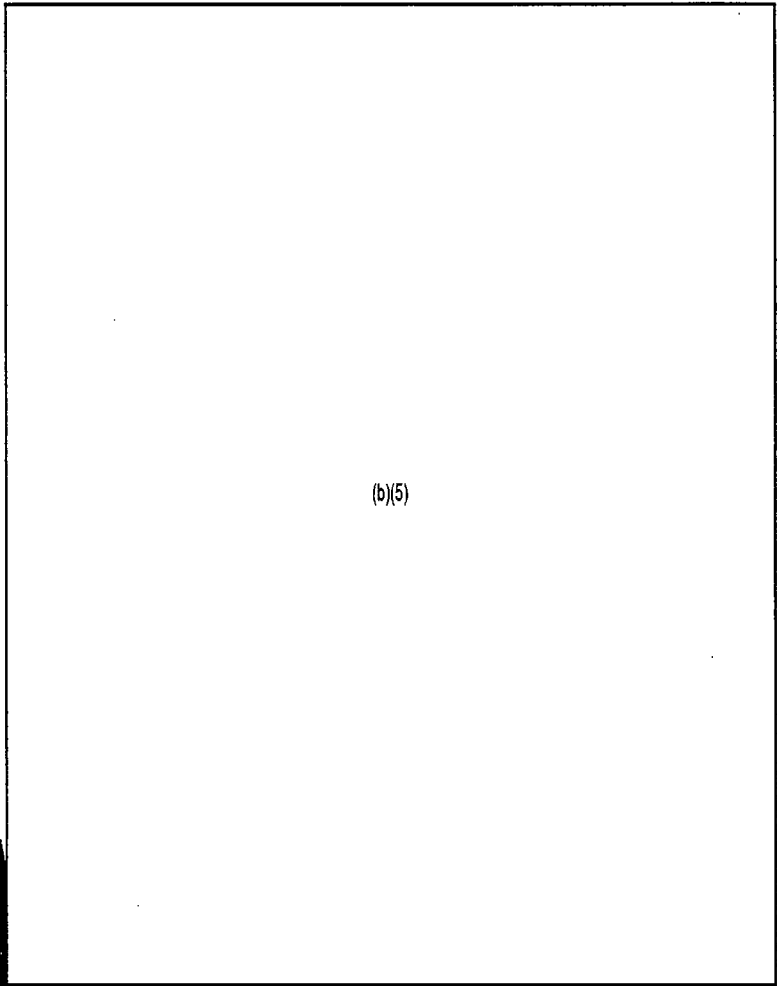
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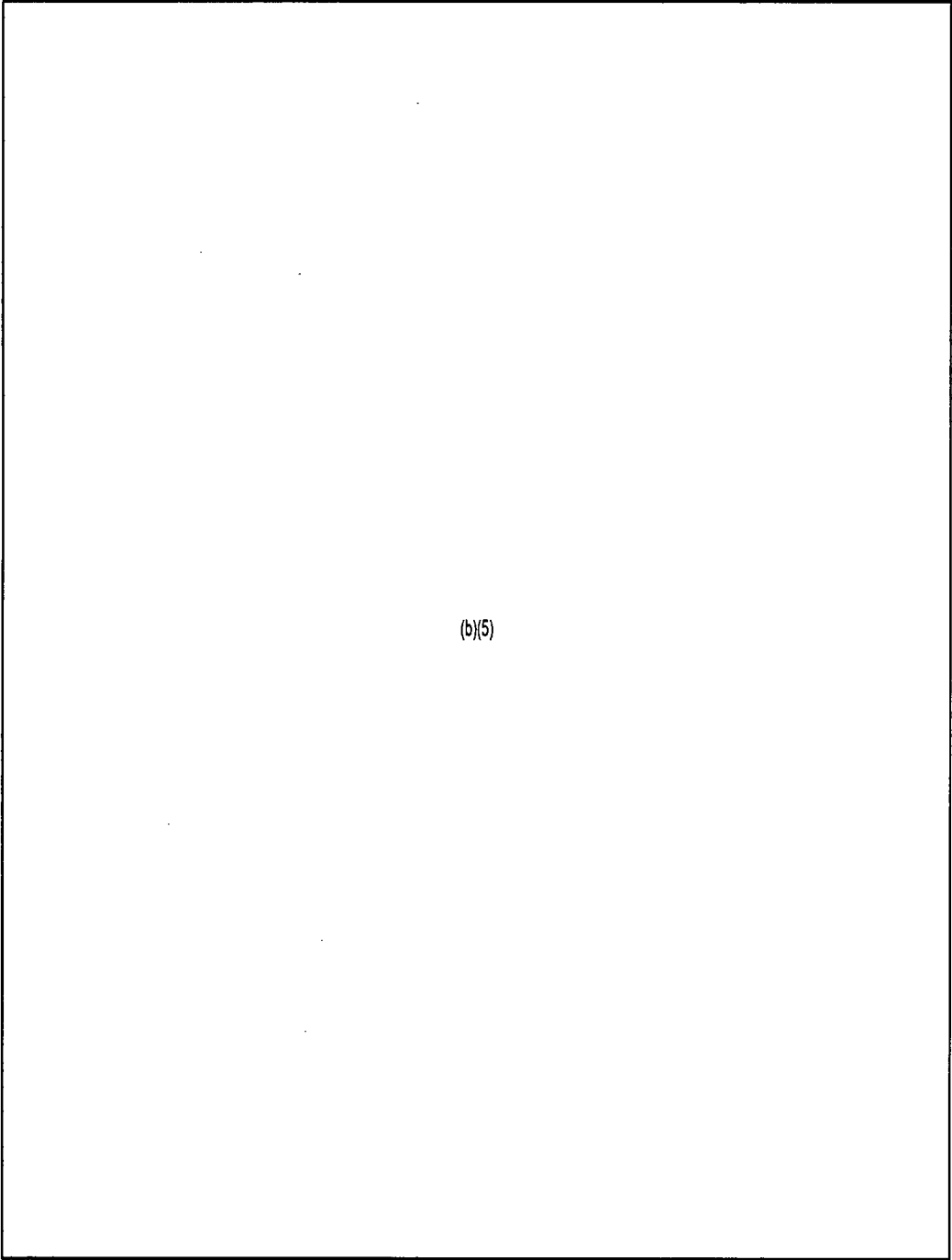
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A
AREVA

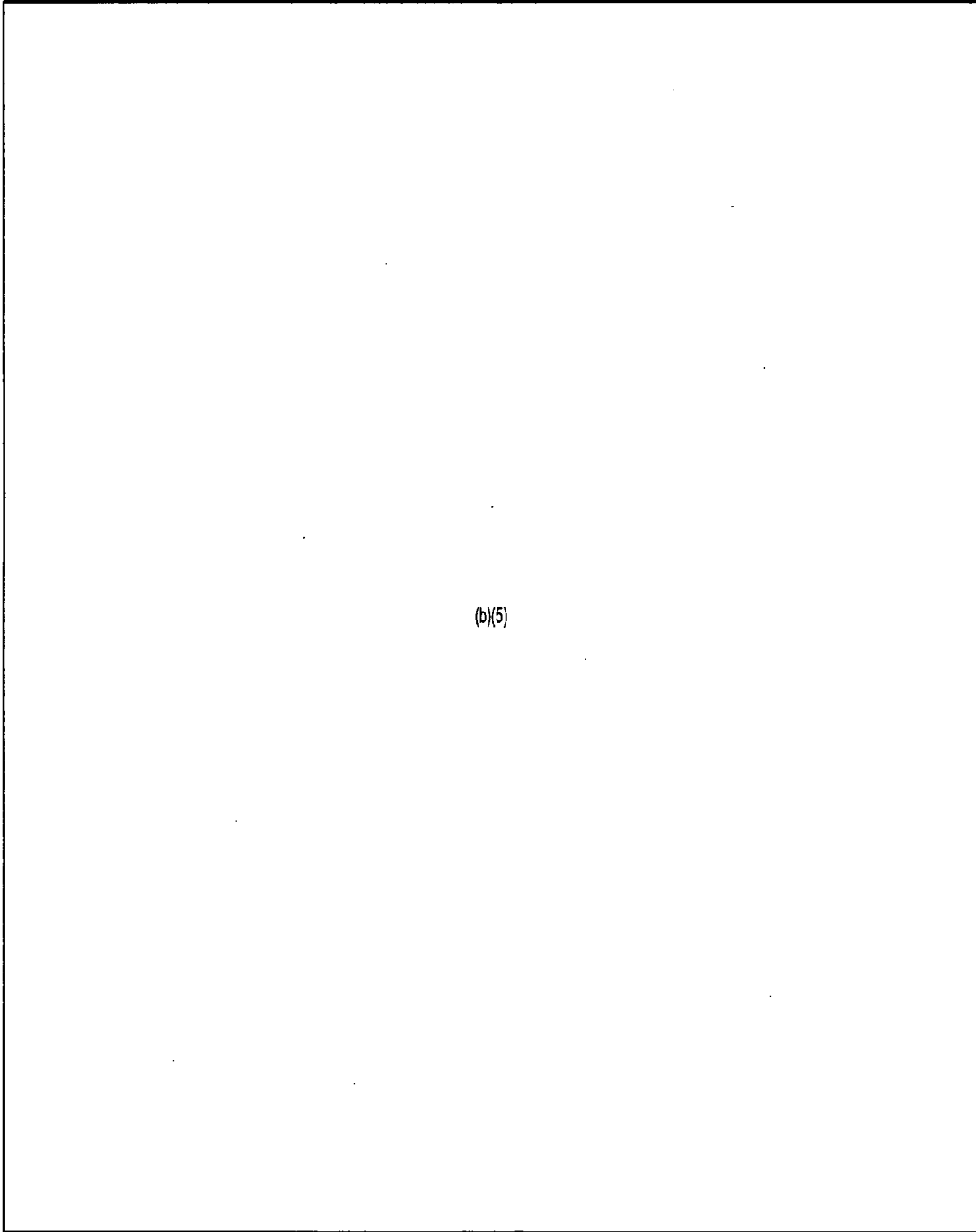


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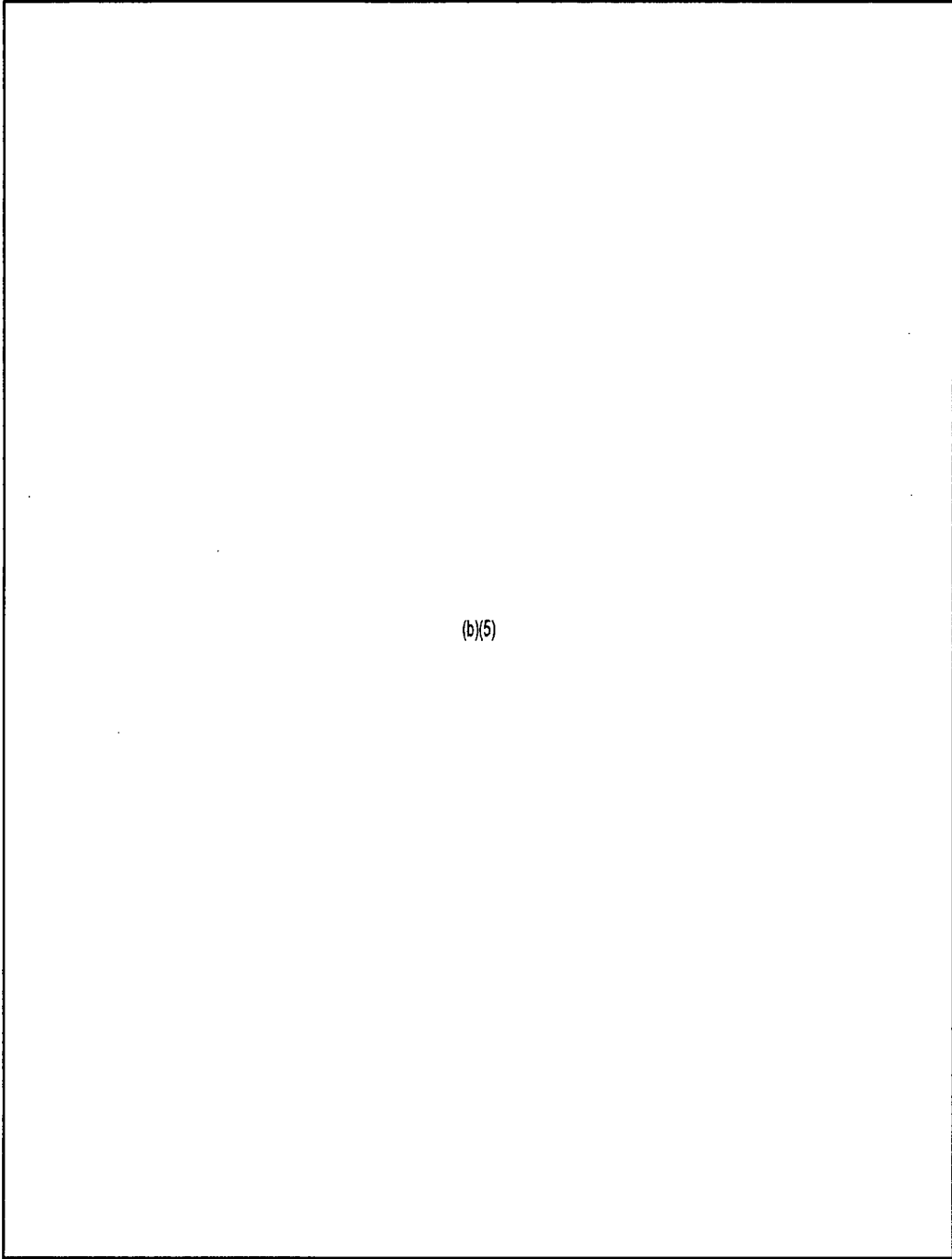
AREVA N.P. S.A.



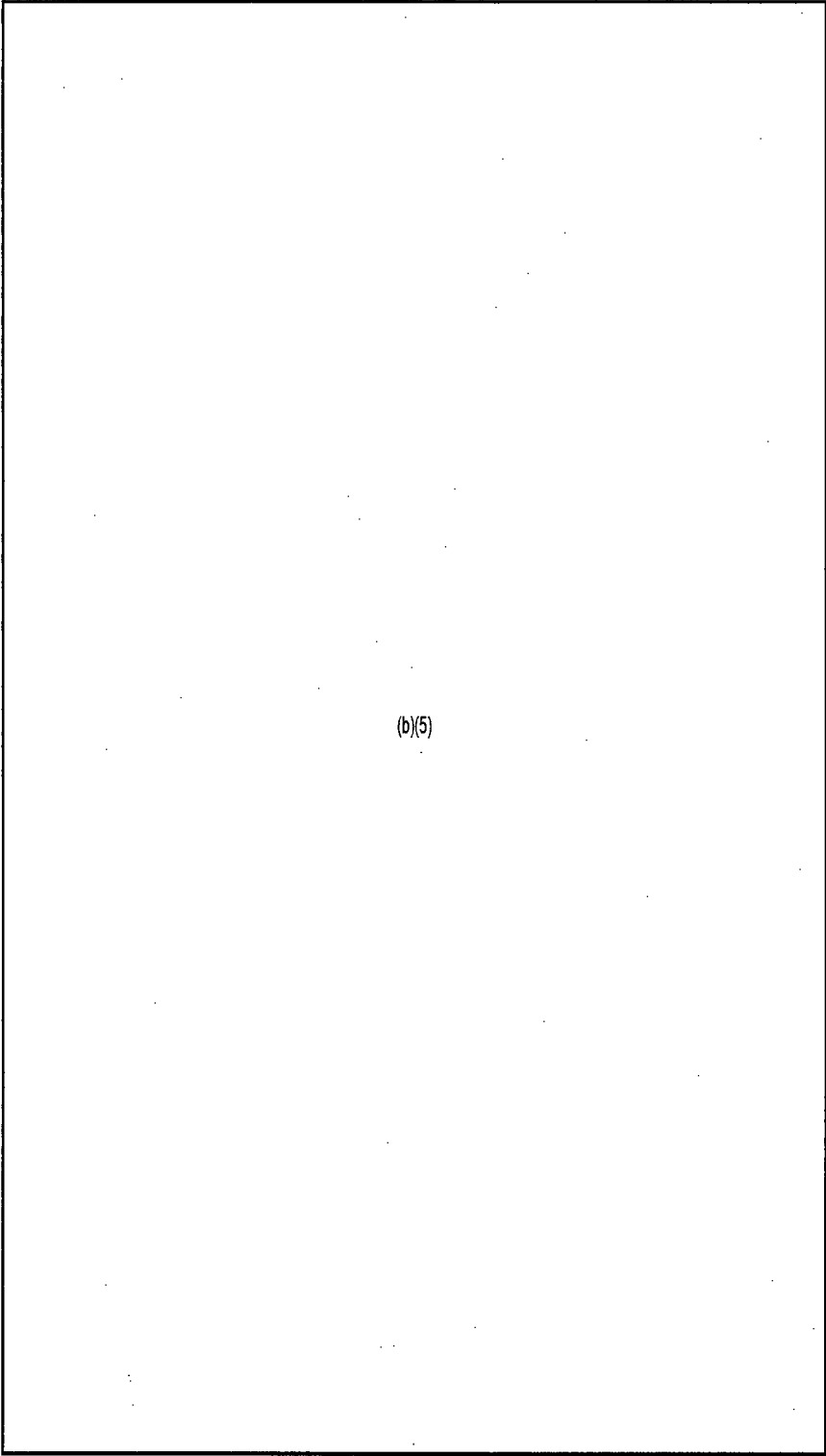
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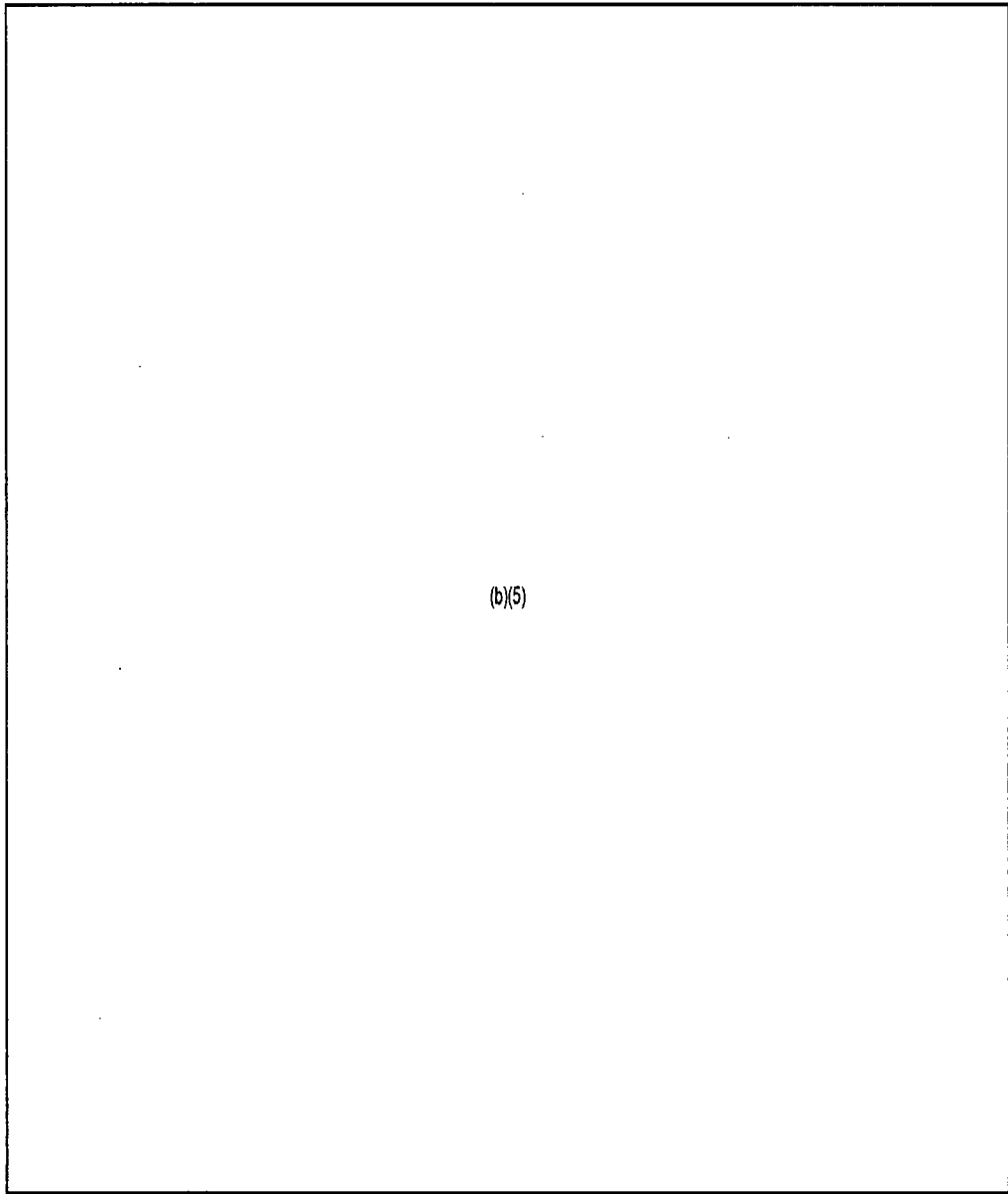
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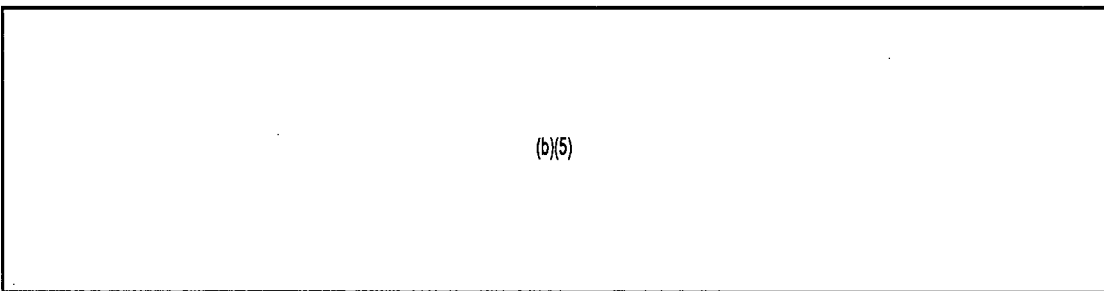
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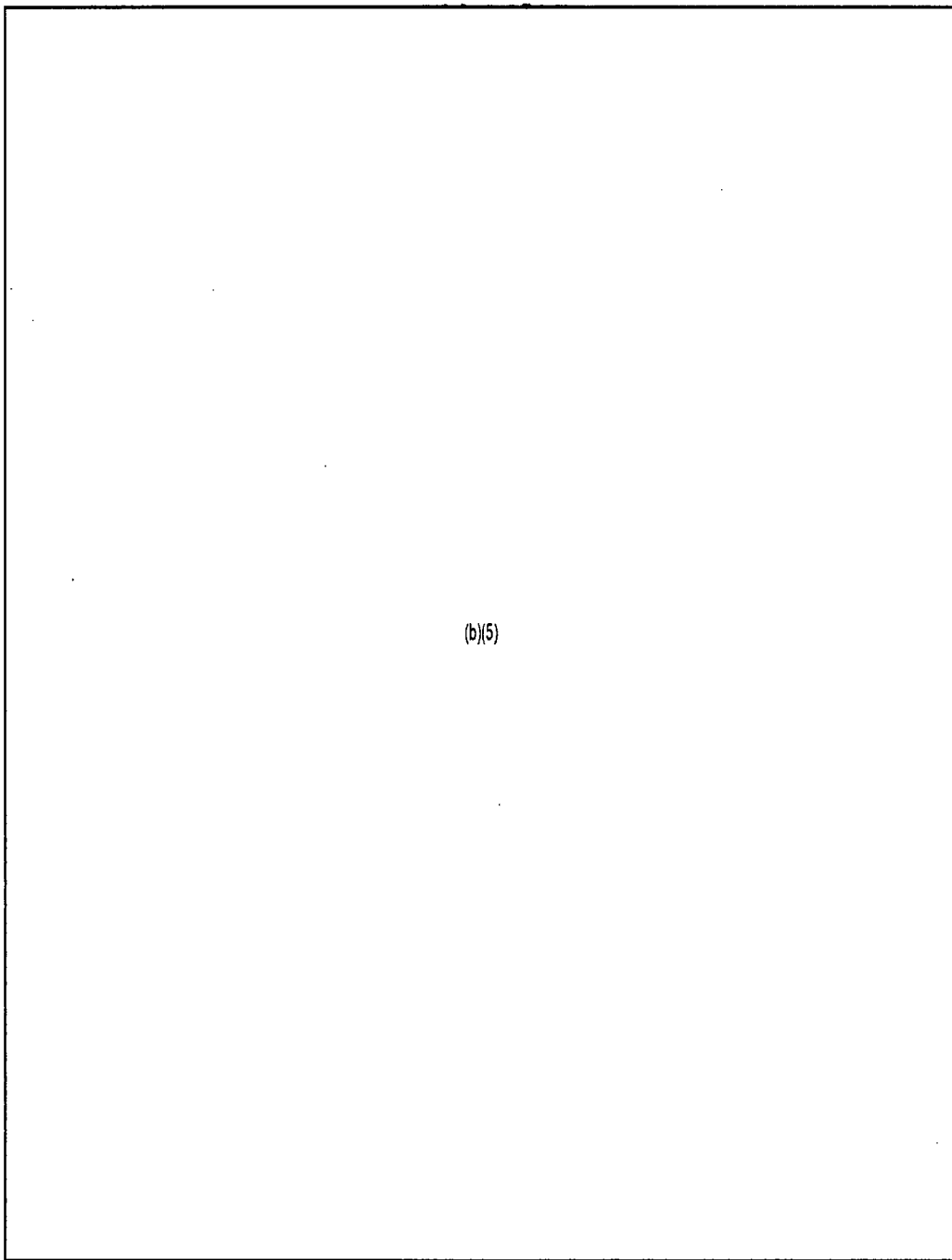
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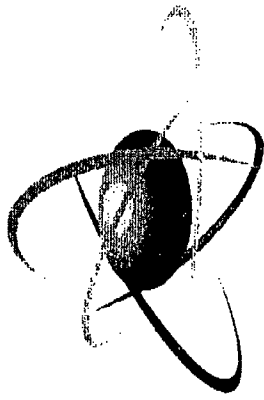
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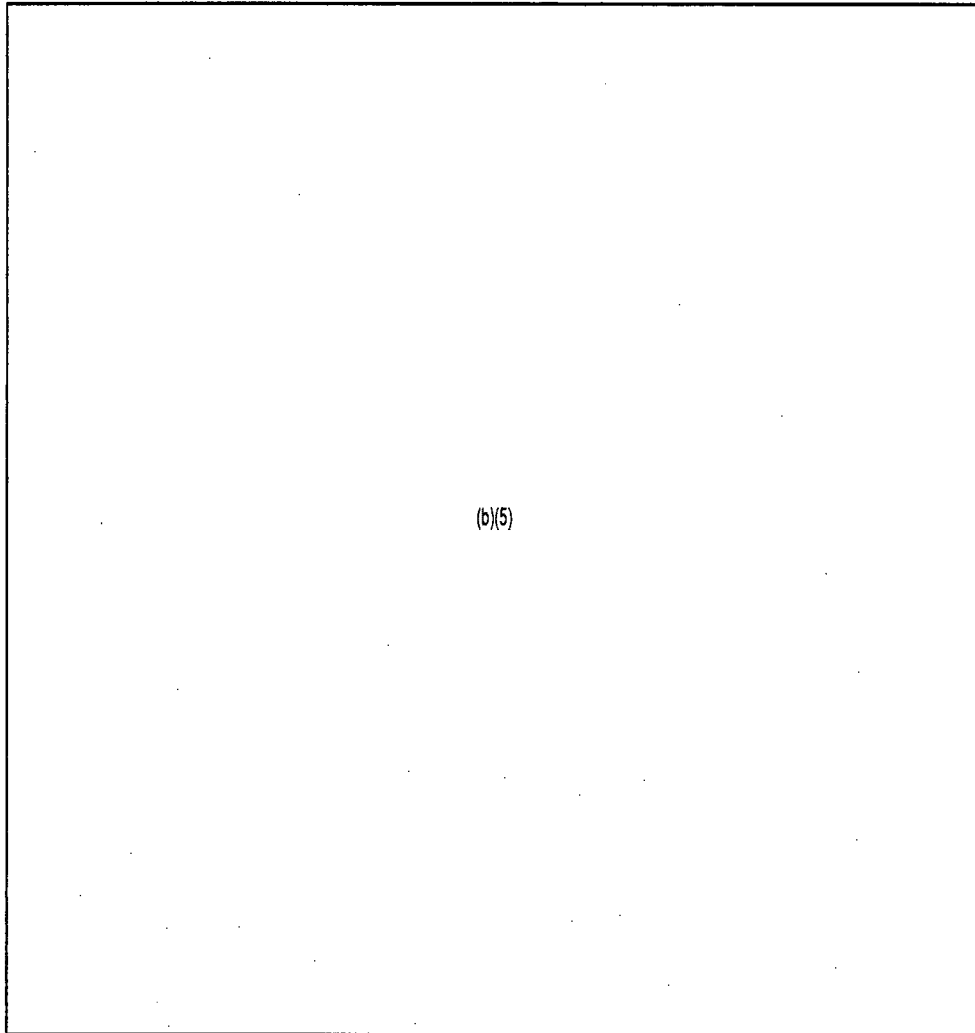
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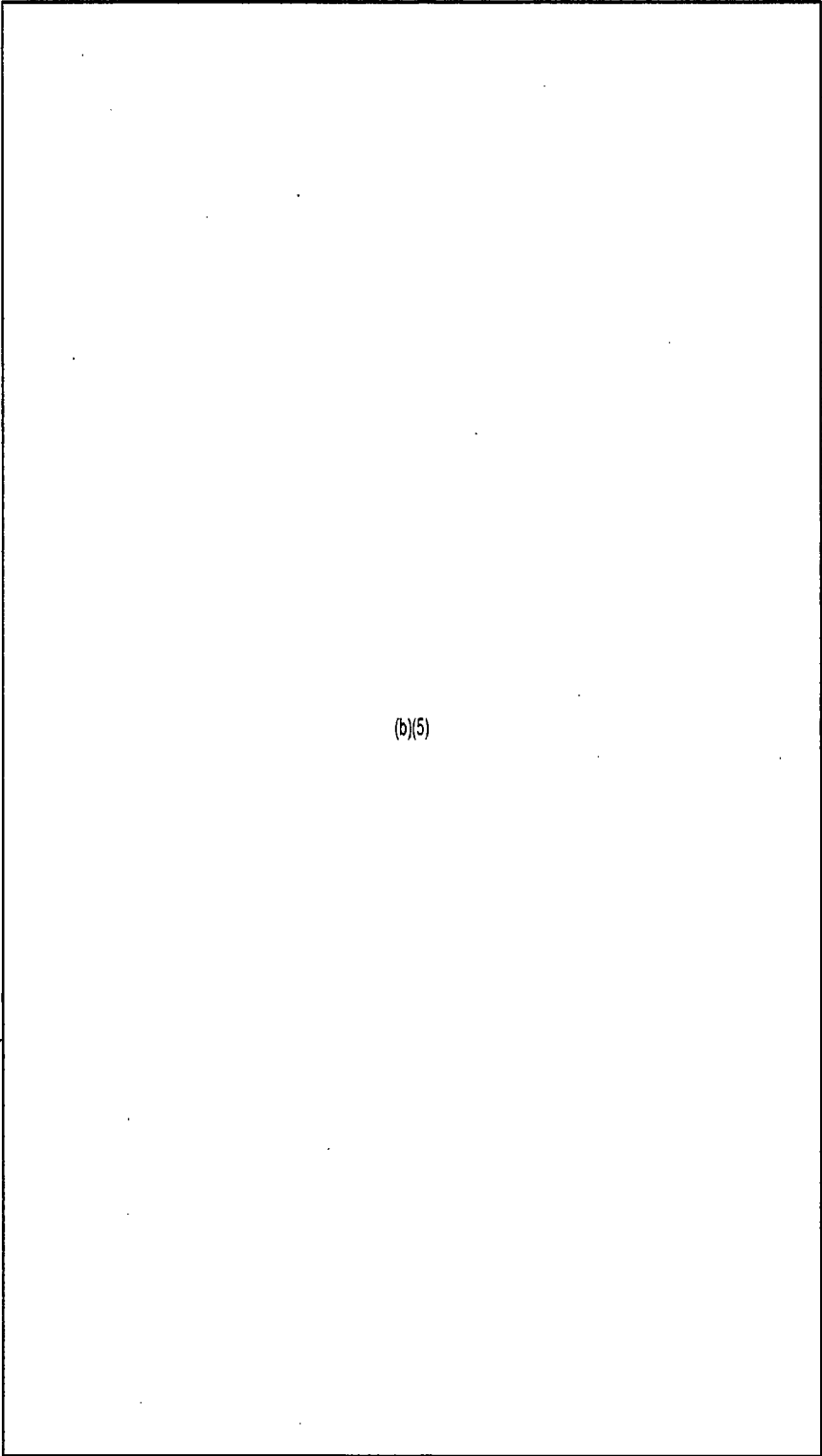
Protecting People and the Environment



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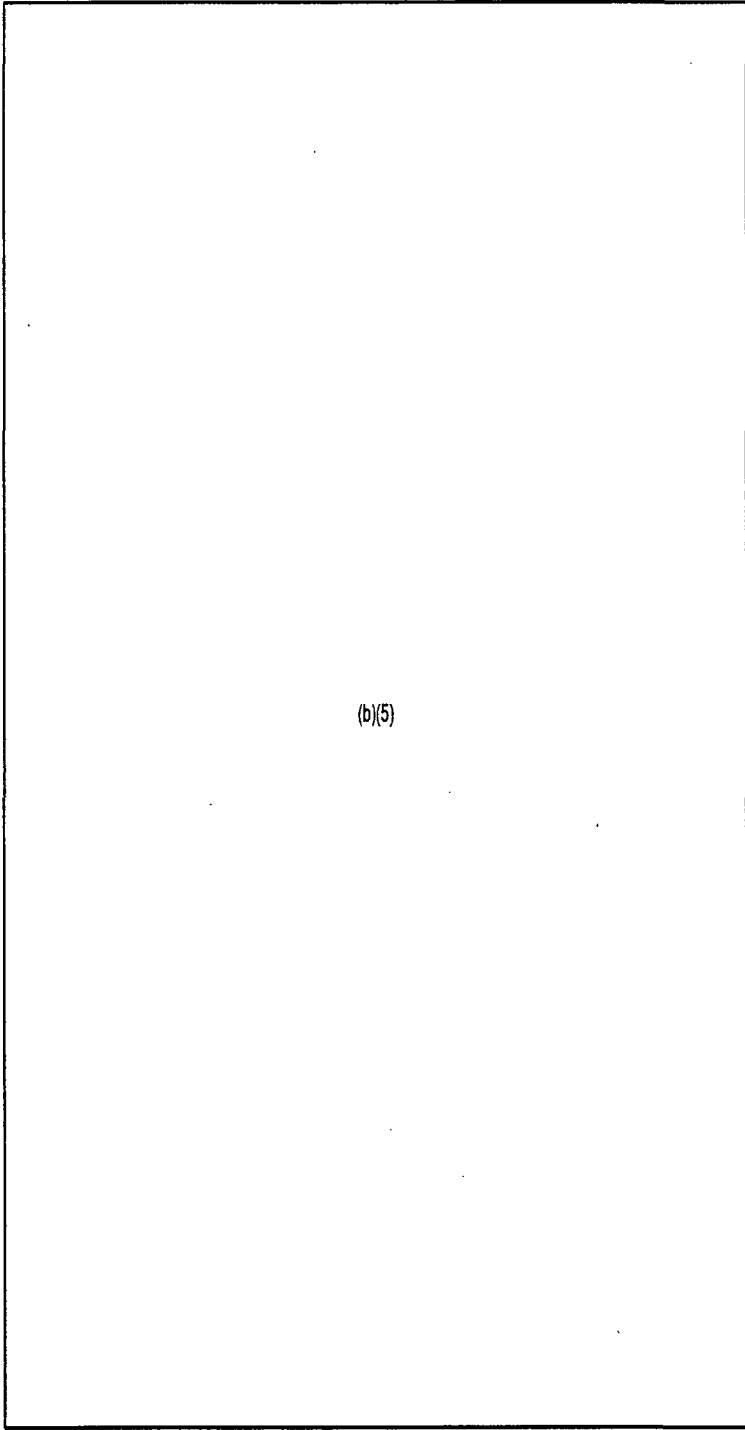
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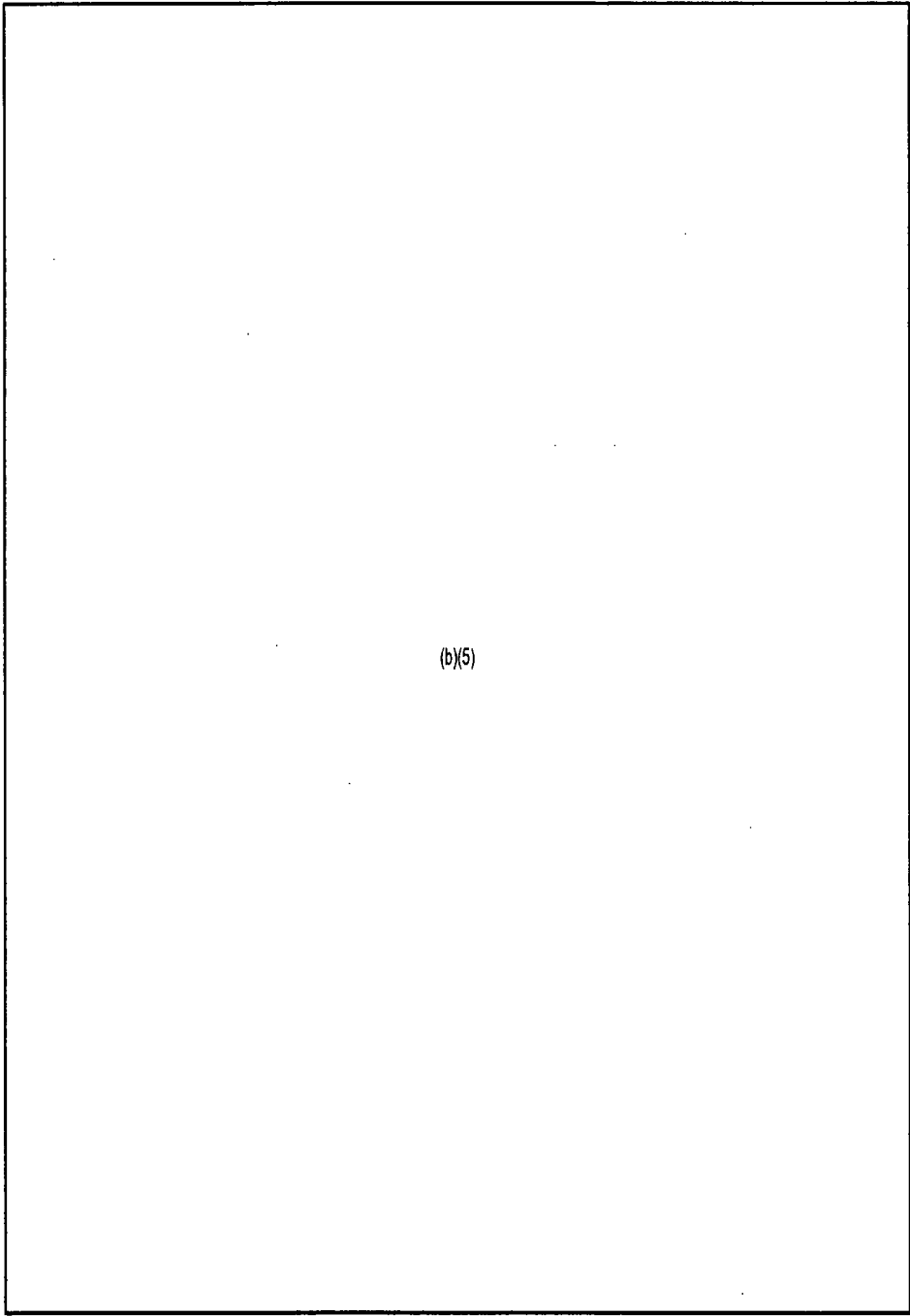
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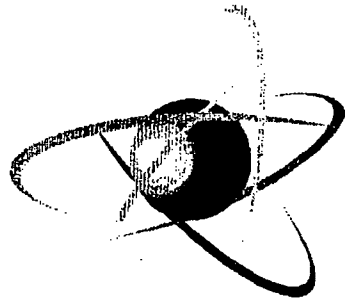
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U.S.NRC

UNITED STATES NUCLEAR REGULATORY COMMISSION

Protecting People and the Environment

US-EPR CONTAINMENT EVALUATION

Minimum Containment Pressure for
ECCS Evaluation

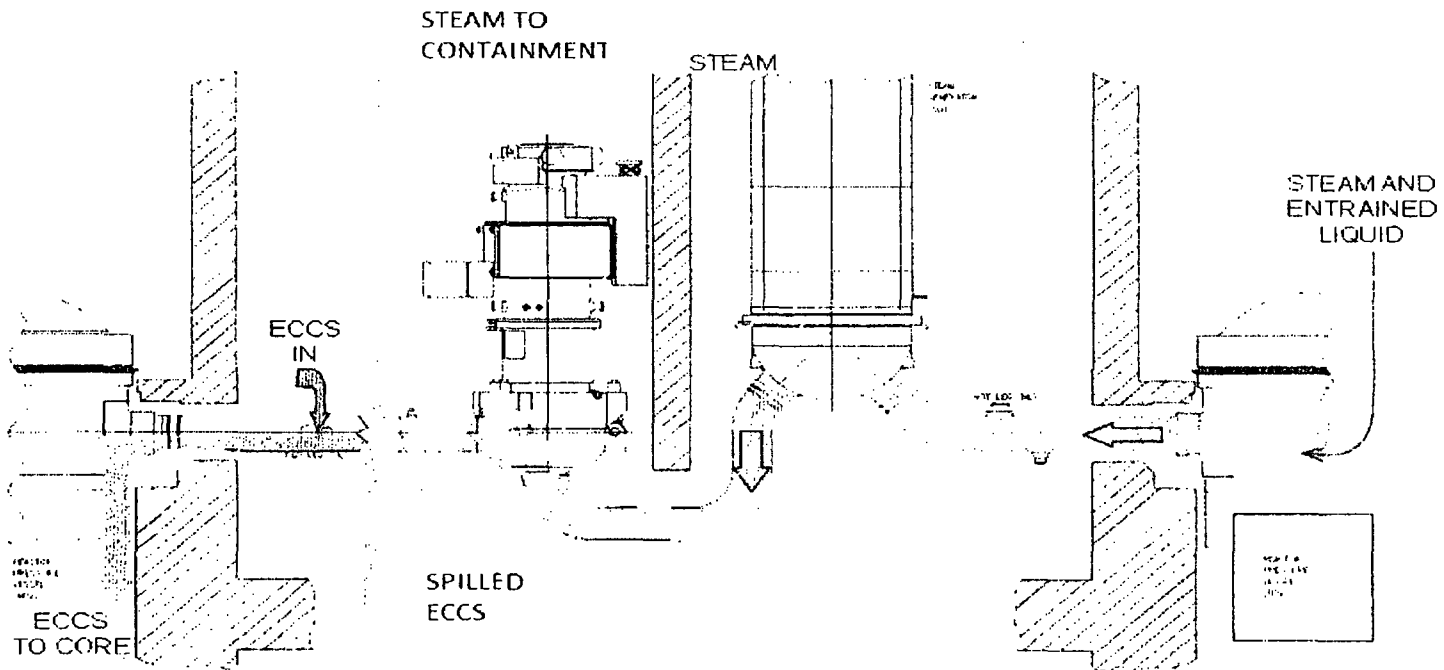
SRP Section 6.2.1.5

Presented by Walton Jensen
(USNRC Staff)

Regulatory Requirements and Guidance

- Realistic Methodology 10CFR50.46(a)(1)(i)
- RG 1.157 – Include the effects of heat sinks and pressure reducing equipment
- SRP 6.2.1.5 “Minimum Containment Pressure Model for PWR ECCS Performance Evaluation”
- BTP 6-2 “Minimum Containment Pressure Model for PWR ECCS Performance Evaluation”

DE PUMP DISCHARGE BREAK CORE REFLOOD



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US-EPR Modeling Assumptions

- Containment pressure calculated by one-node ICECON directly connected to S-RELAP5
- Heat structures as recommended by BTP 6-2
- Heat transfer – 1.2 times Uchida Data
- Containment volume and temperature sampled

Approval Path

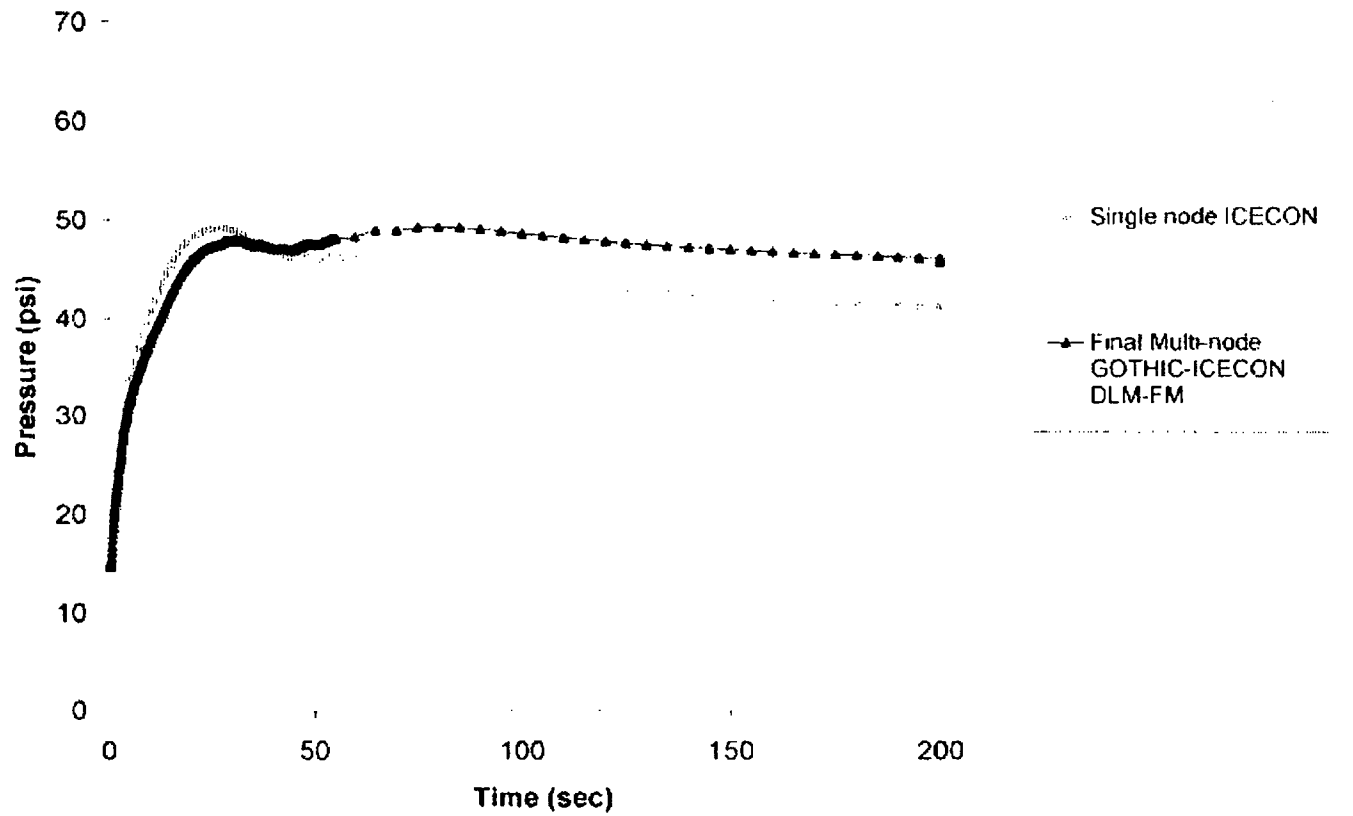
NRC staff has previously concluded that AREVA methodology for calculating minimum containment back pressure using the ICECON code could be accepted if it is shown to be conservative for each case.

The staff requested that the ICECON methodology be shown to be conservative compared with a best estimate analysis using the AREVA multi-node US-EPR GOTHIC model.

Multi-Node GOTHIC Benchmark

- Used mass and energy from S-RELAP5
- Interfacial heat transfer to the IRWST pool was included.
- The total containment volume was increased to match the volume in the ICECON model used in the comparison. Initial conditions were changed to match those in the ICECON model.
- The containment heat sink surface areas were increased to match the ICECON model
- Condensation and heat transfer: The DLM option of the original model changed to the best estimate DLM-FM option

Figure 06.02.01-52-2—Comparison of Containment Pressure Predicted by the Multi-Node GOTHIC with DLM-FM and Single-Node ICECON



Remaining Issue

Staff requested an ITAAC requirement to ensure that the as-built containment heat structure inventory does not exceed the heat removal capability assumed in Section 6.2.1.5 fo the FSAR (RAI 437 06.02.01-96)

From: Carneal, Jason
Sent: Thursday, March 17, 2011 5:05 PM
To: Jackson, Christopher
Subject: FW: US EPR DCD ch 6.2.4 AGrady changes to OGC comments for chapter day 17 Mar

Chris:

Attached are the changes Anne-Marie sent me. We will work from this file today, and I'll incorporate any updates into the master ADAMS file after the meeting.

Thanks.

Jason

From: Grady, Anne-Marie
Sent: Thursday, March 17, 2011 11:39 AM
To: Carneal, Jason
Subject: US EPR DCD ch 6.2.4 AGrady changes to OGC comments for chapter day 17 Mar

Jason,

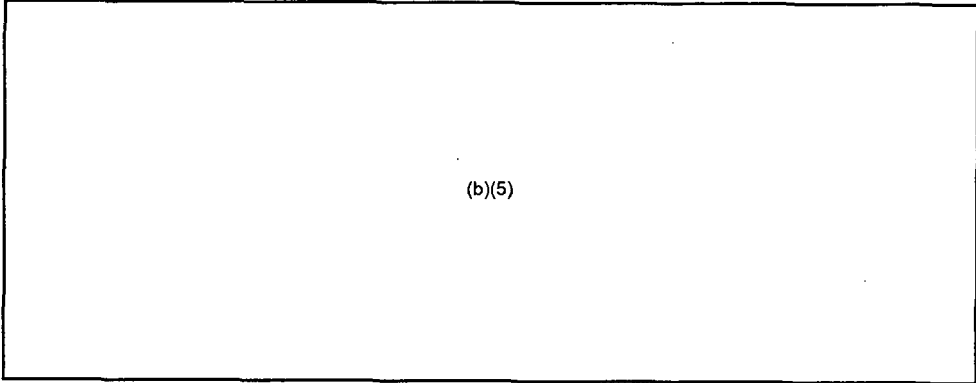
Attached is the Word document including ch 6.2.4. I have addressed OGC comments by revising the text using track changes, as you requested.

Anne-Marie

Anne-Marie Grady, PE
Reactor Systems Engineer
US Nuclear Regulatory Commission
NRO/DSRA/SPCV
301-415-7645
Anne-Marie.Grady@nrc.gov

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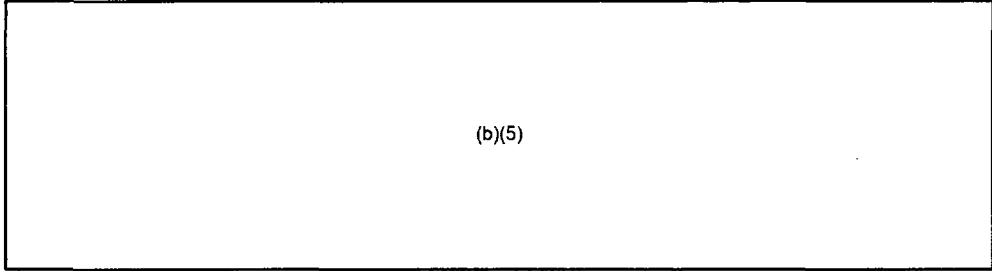
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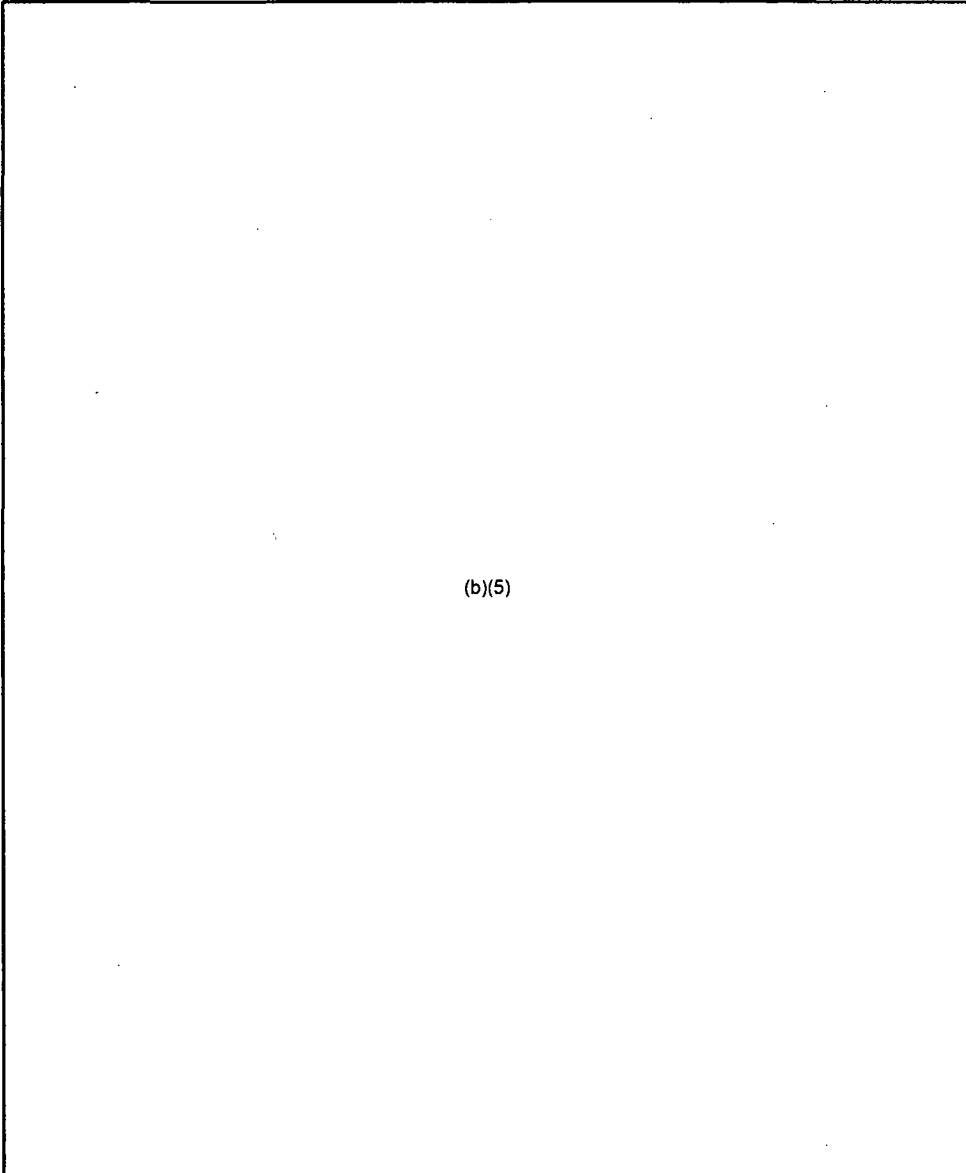
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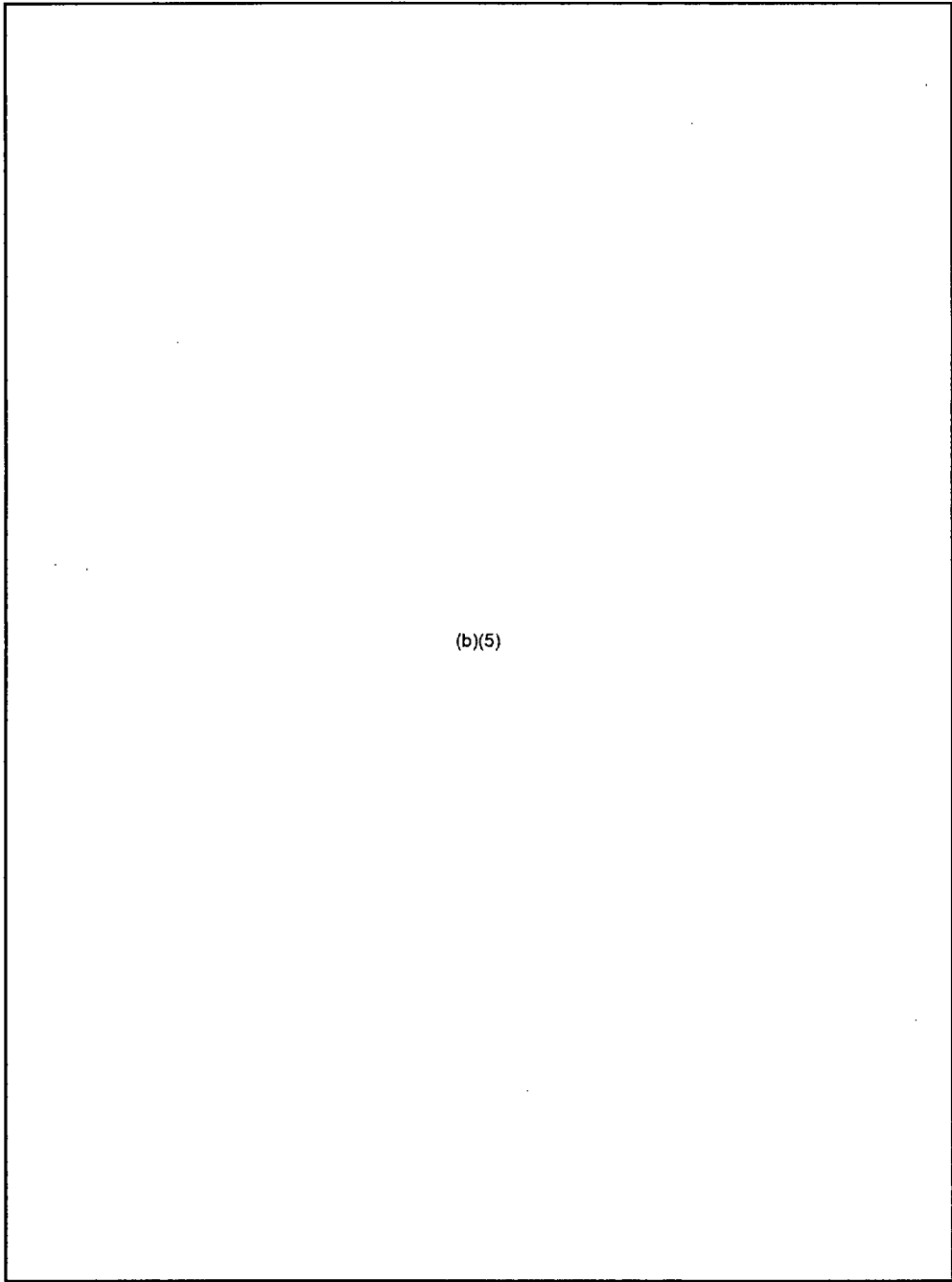


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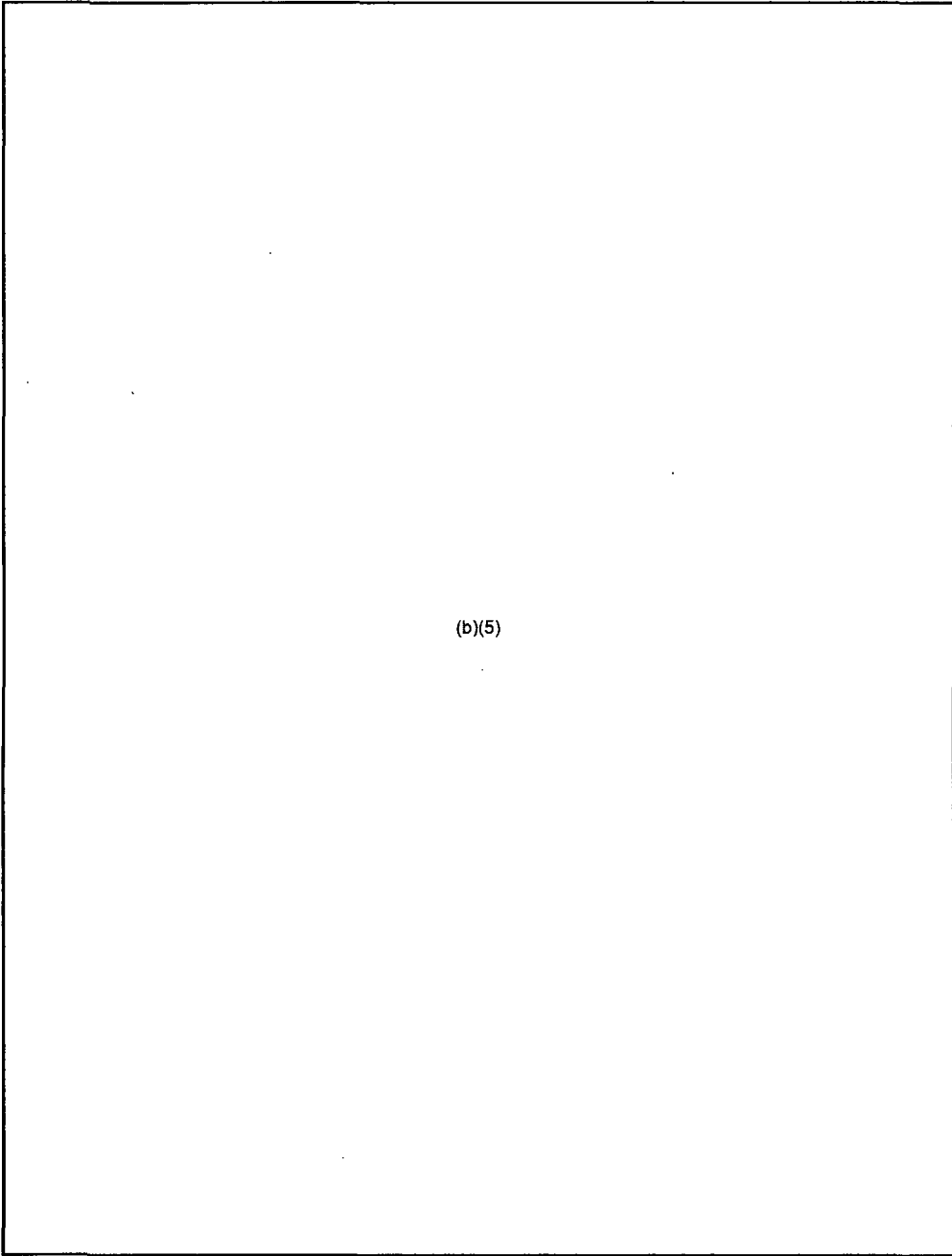
6 ENGINEERED SAFETY FEATURES



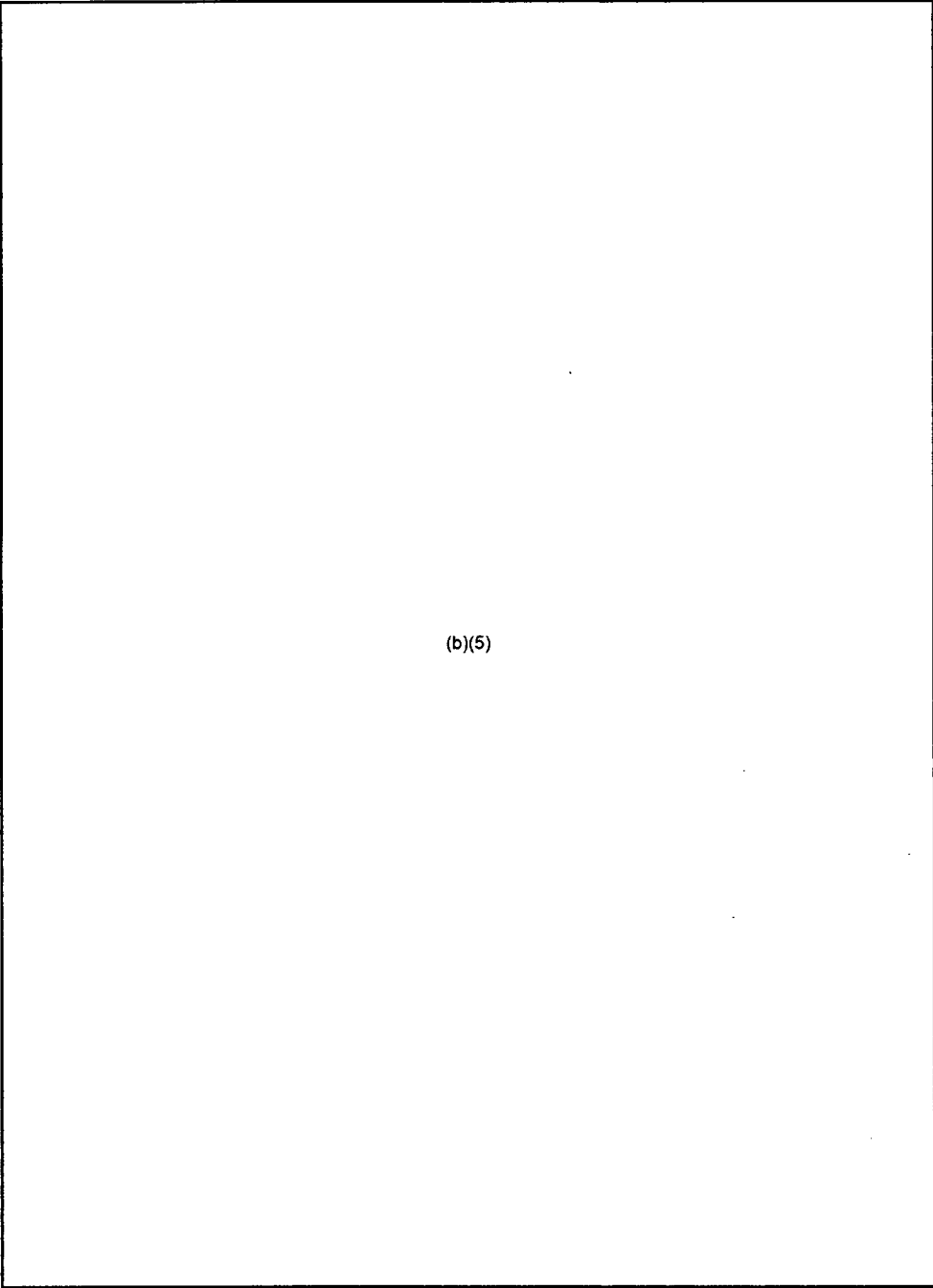
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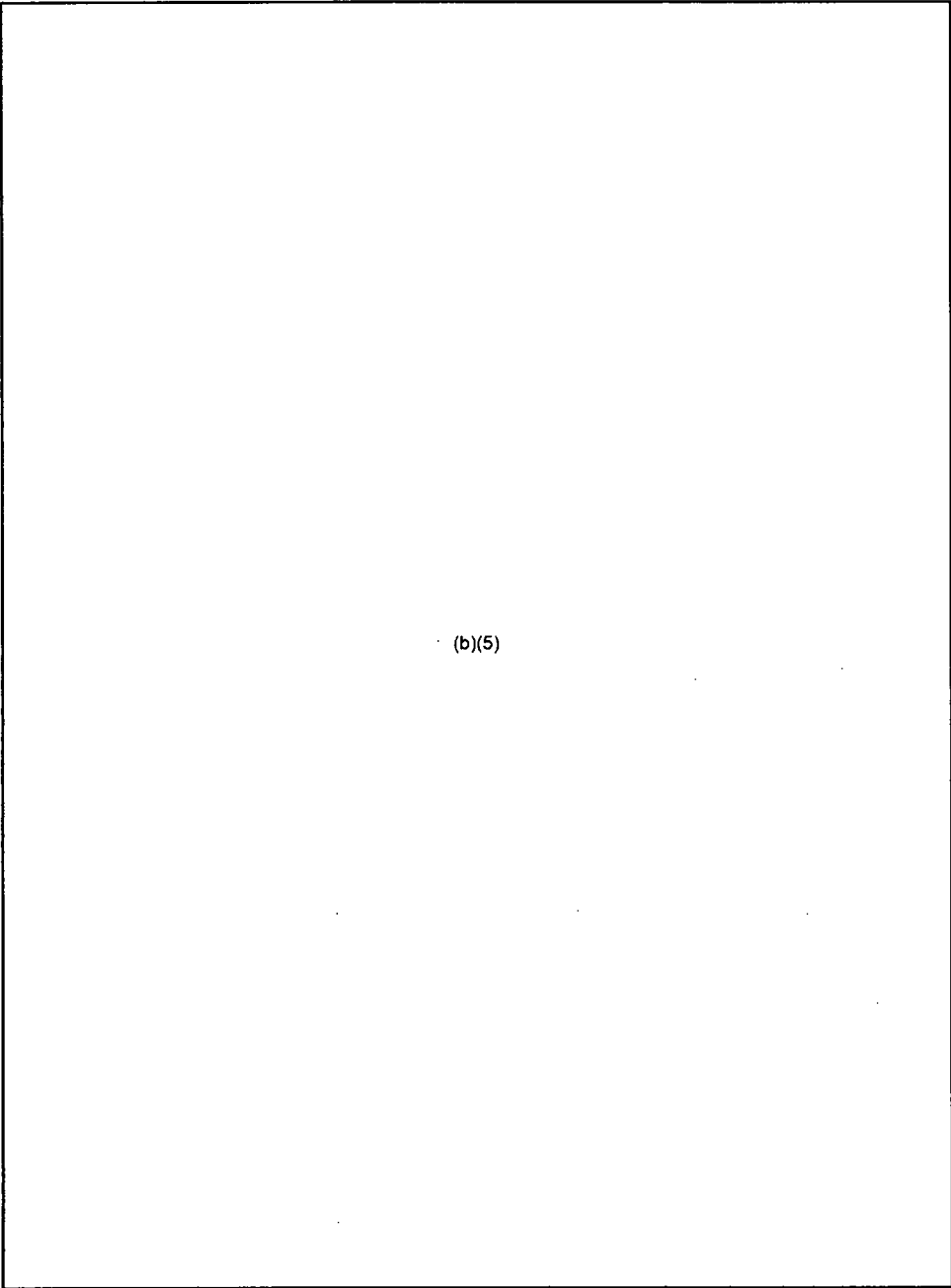
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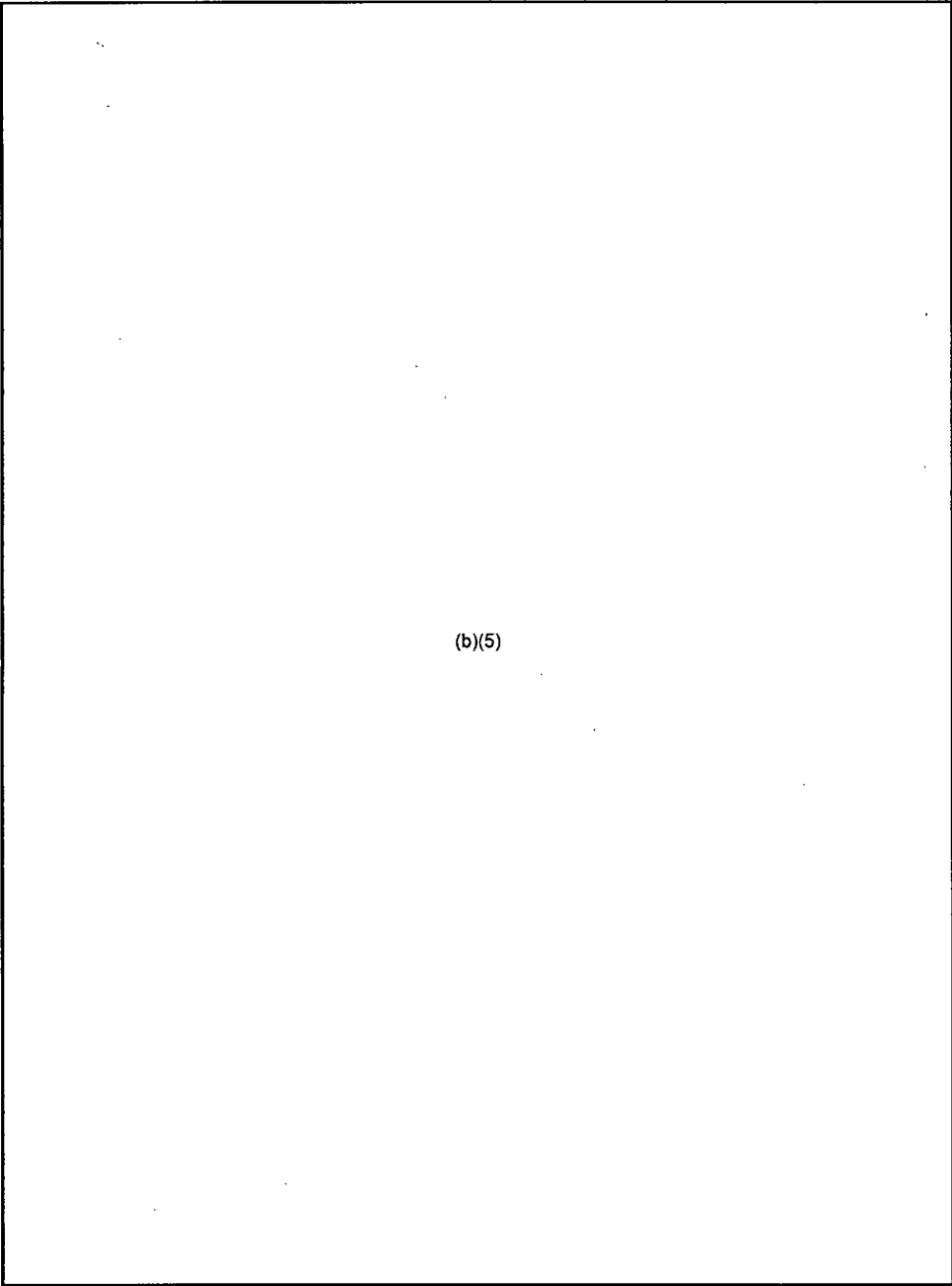
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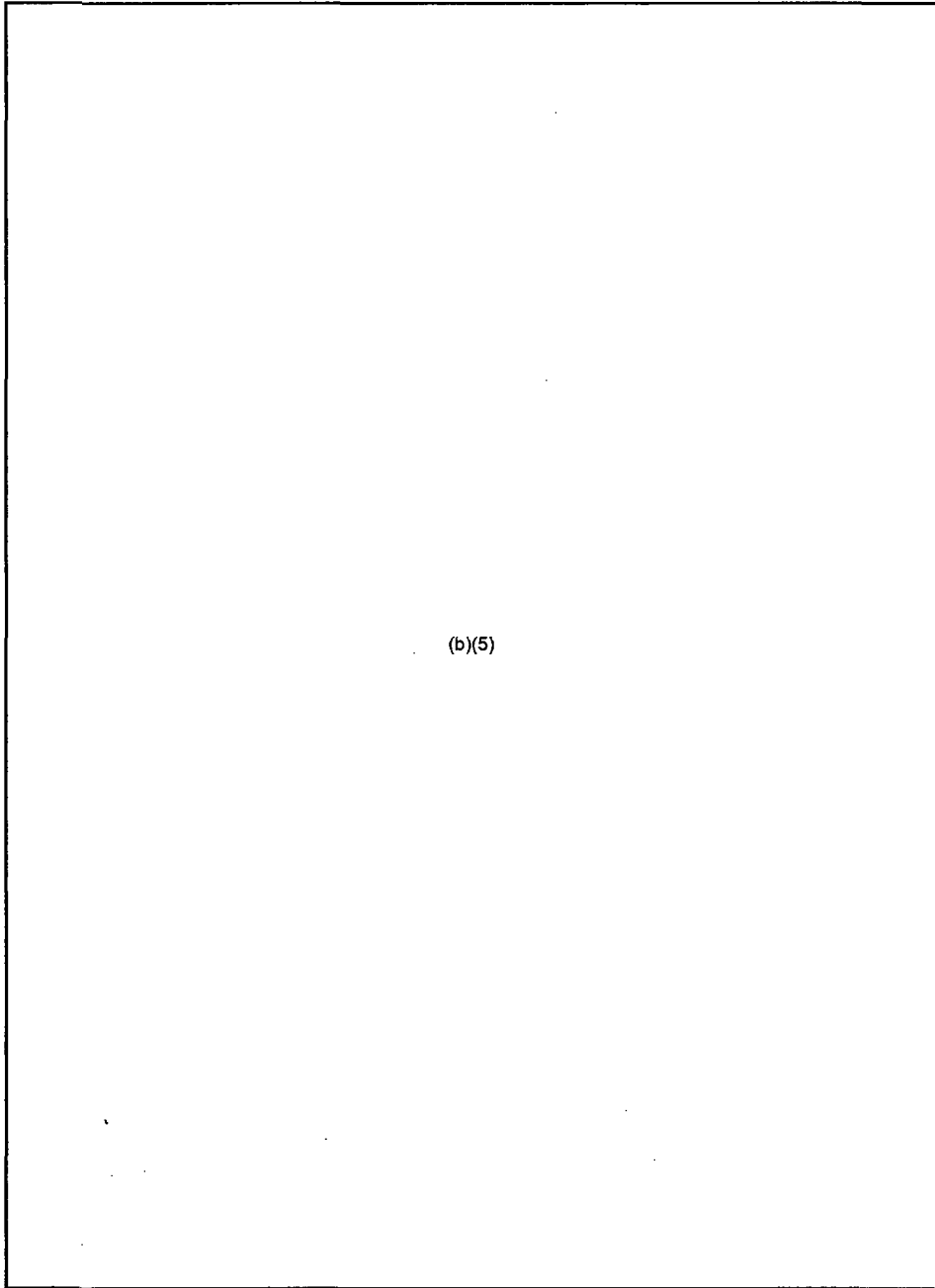
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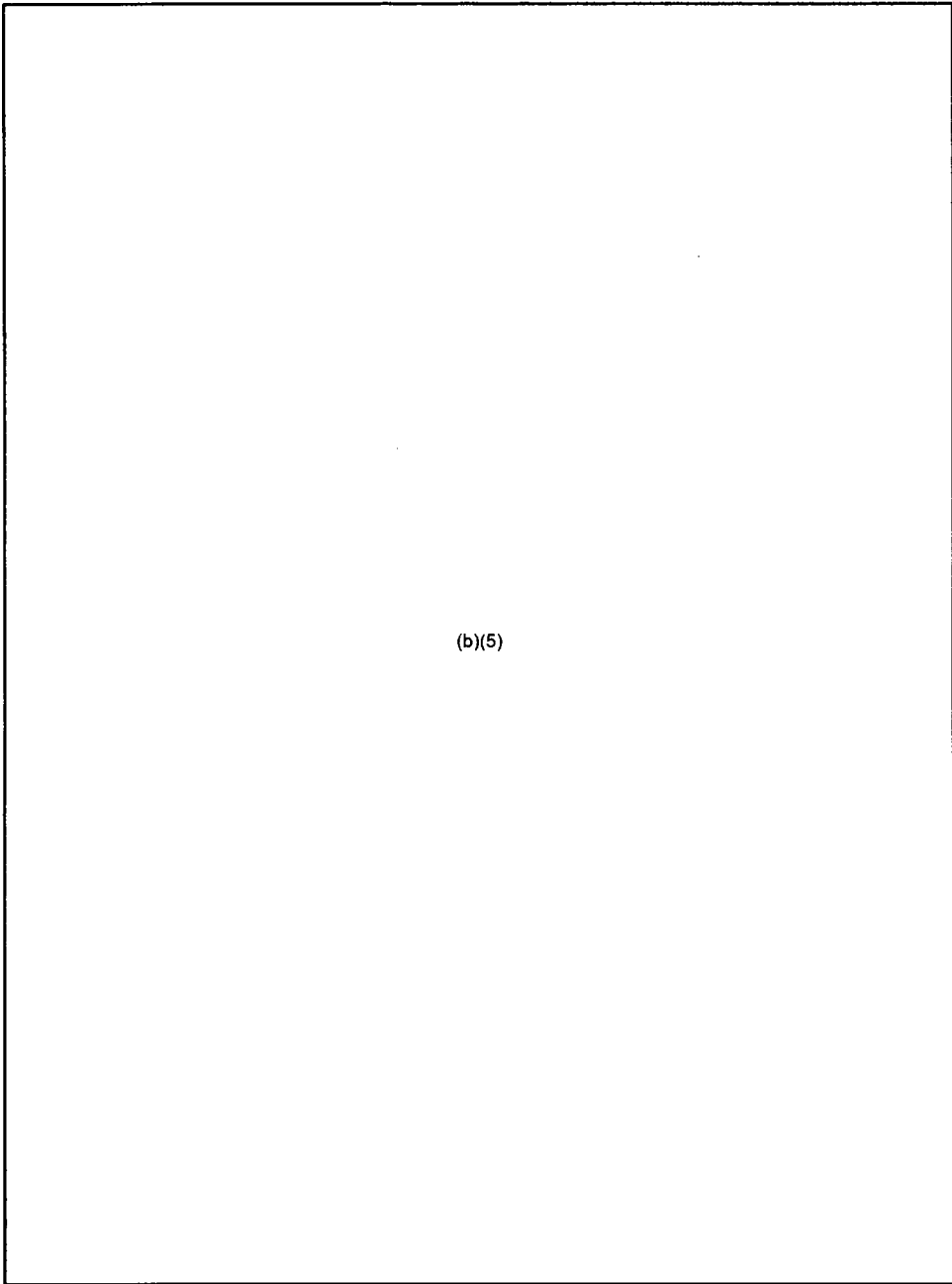
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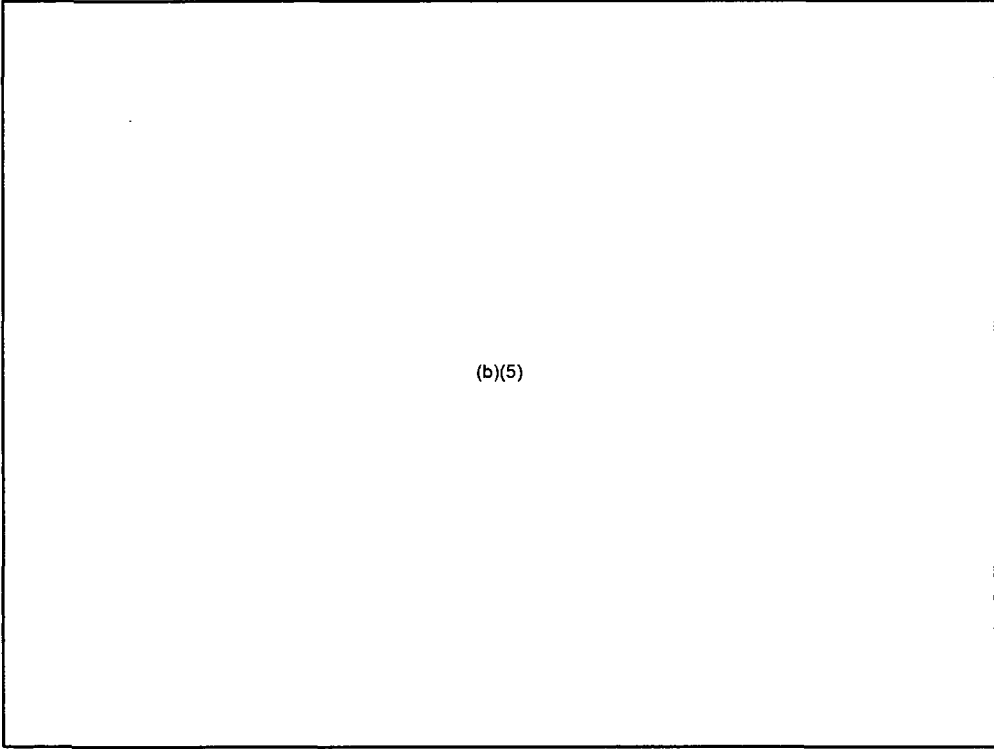
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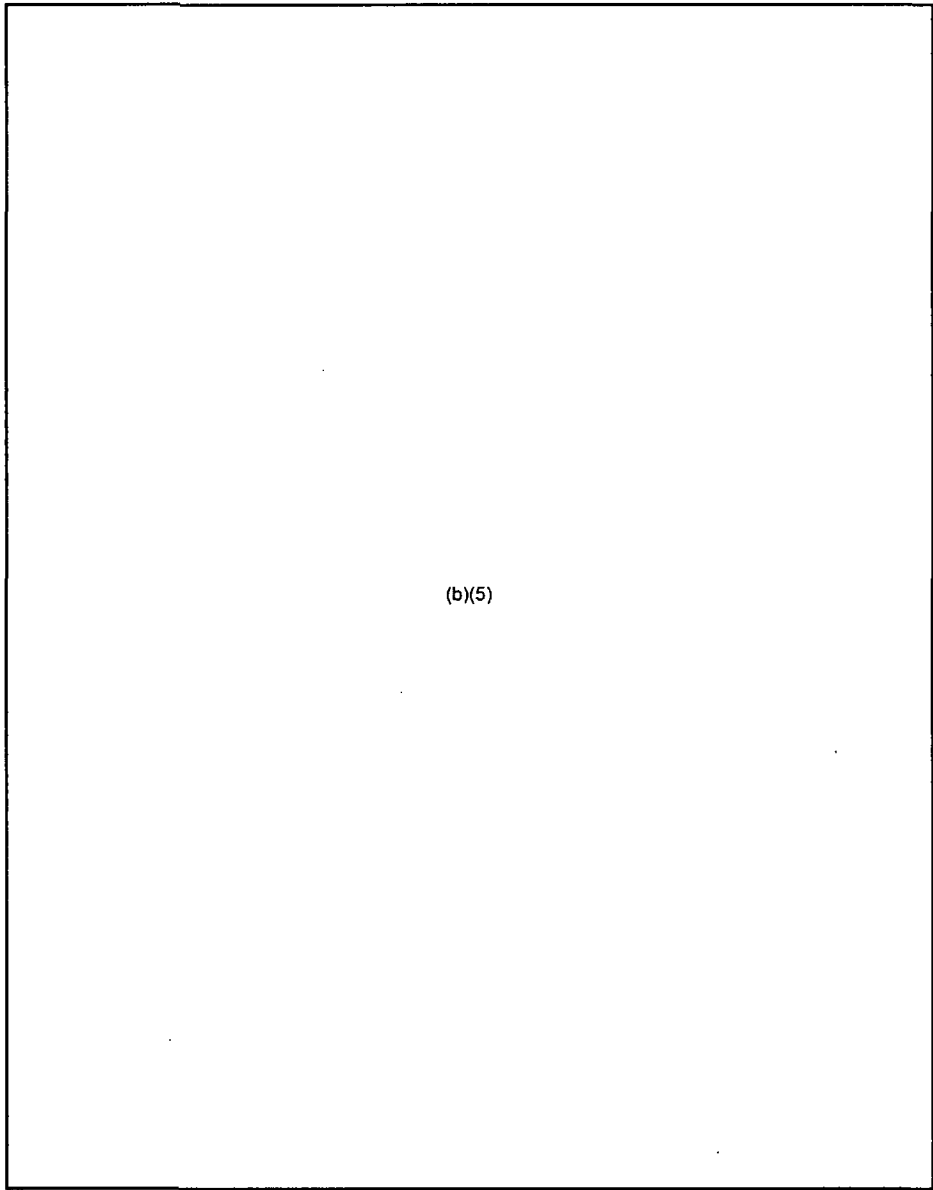
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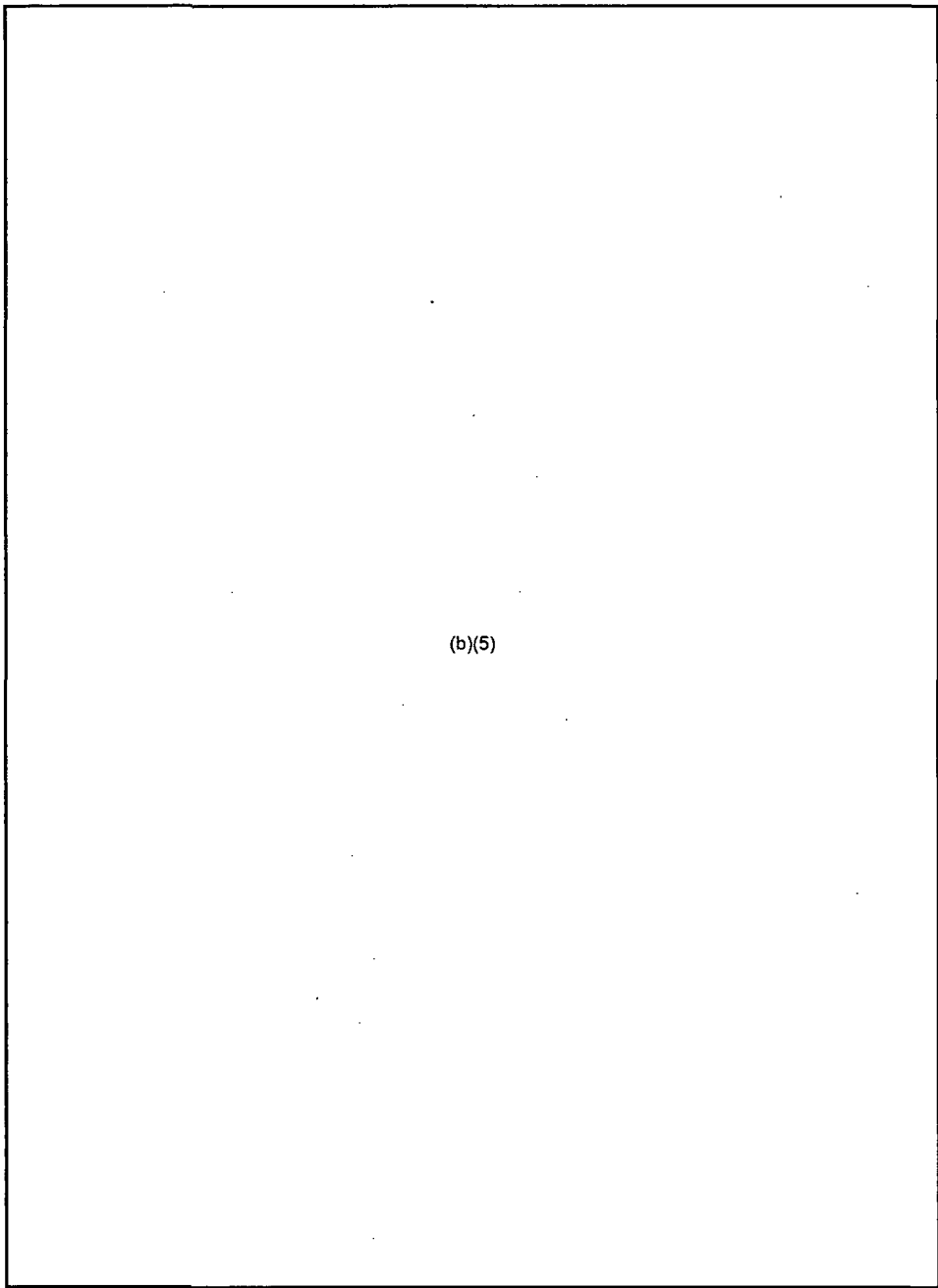
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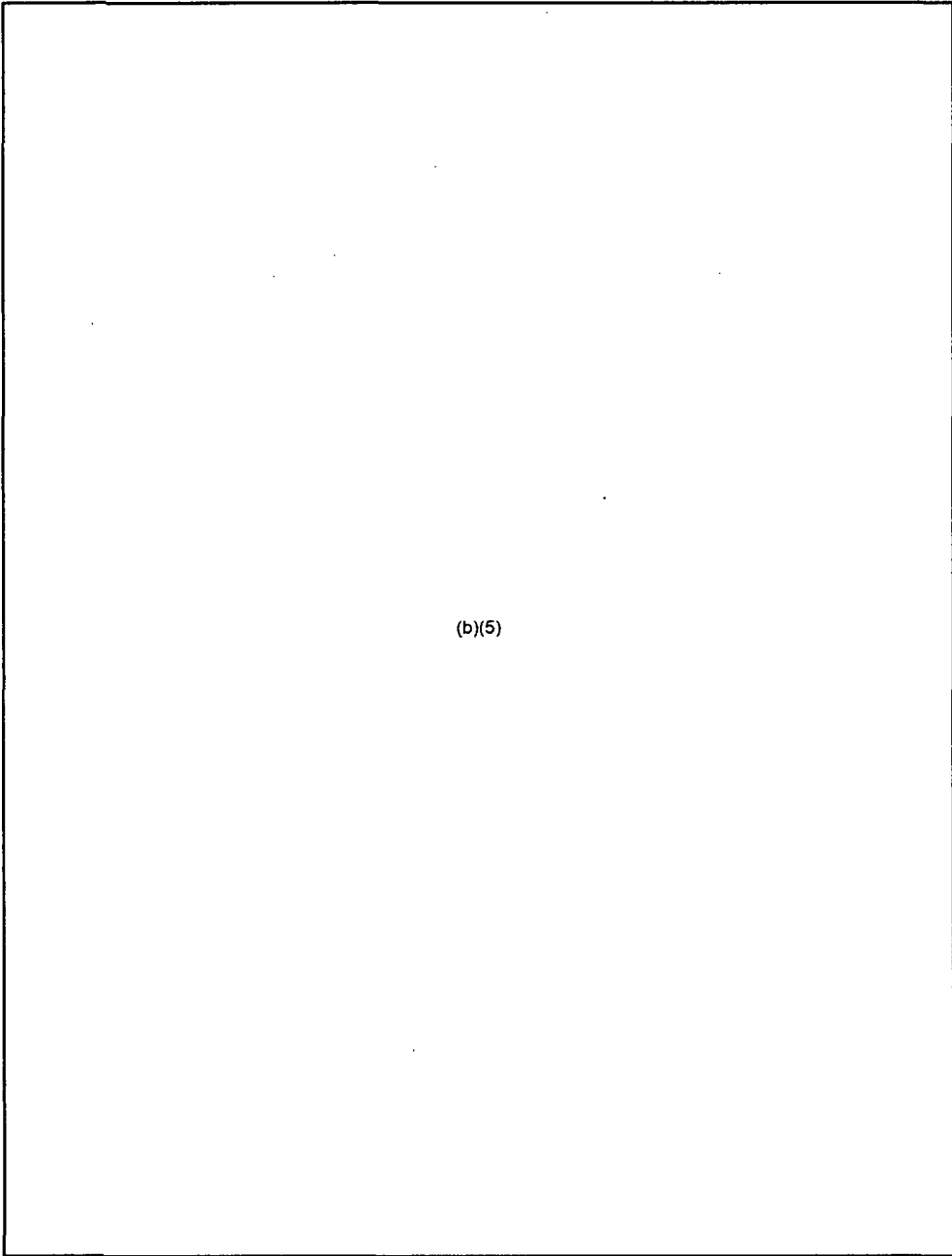
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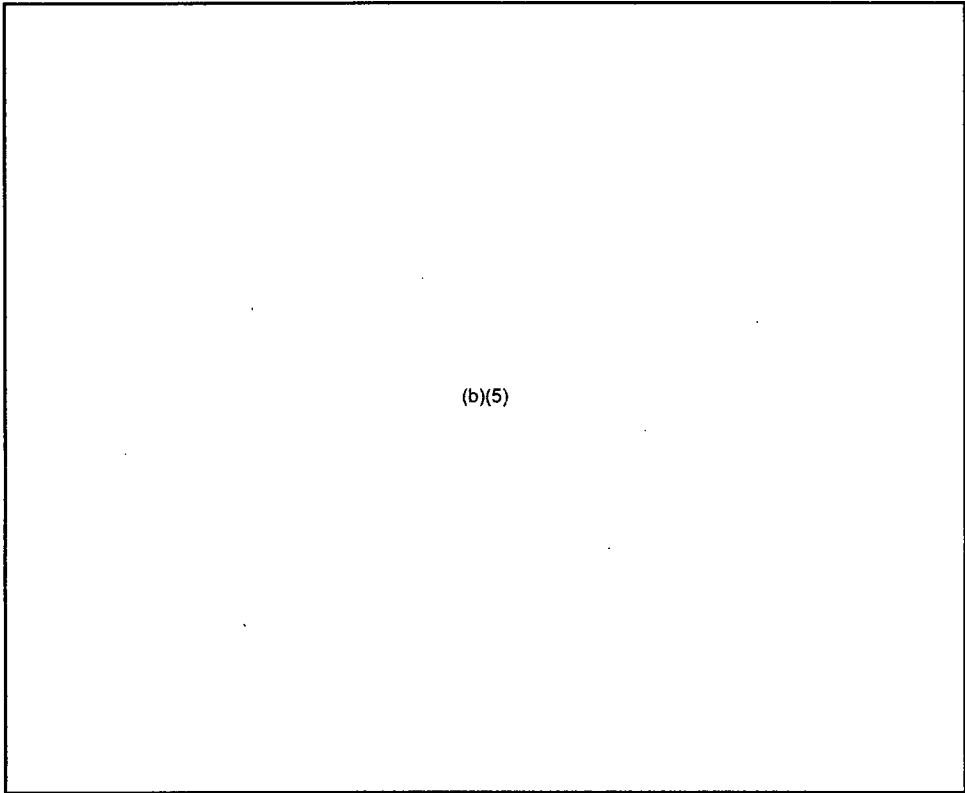
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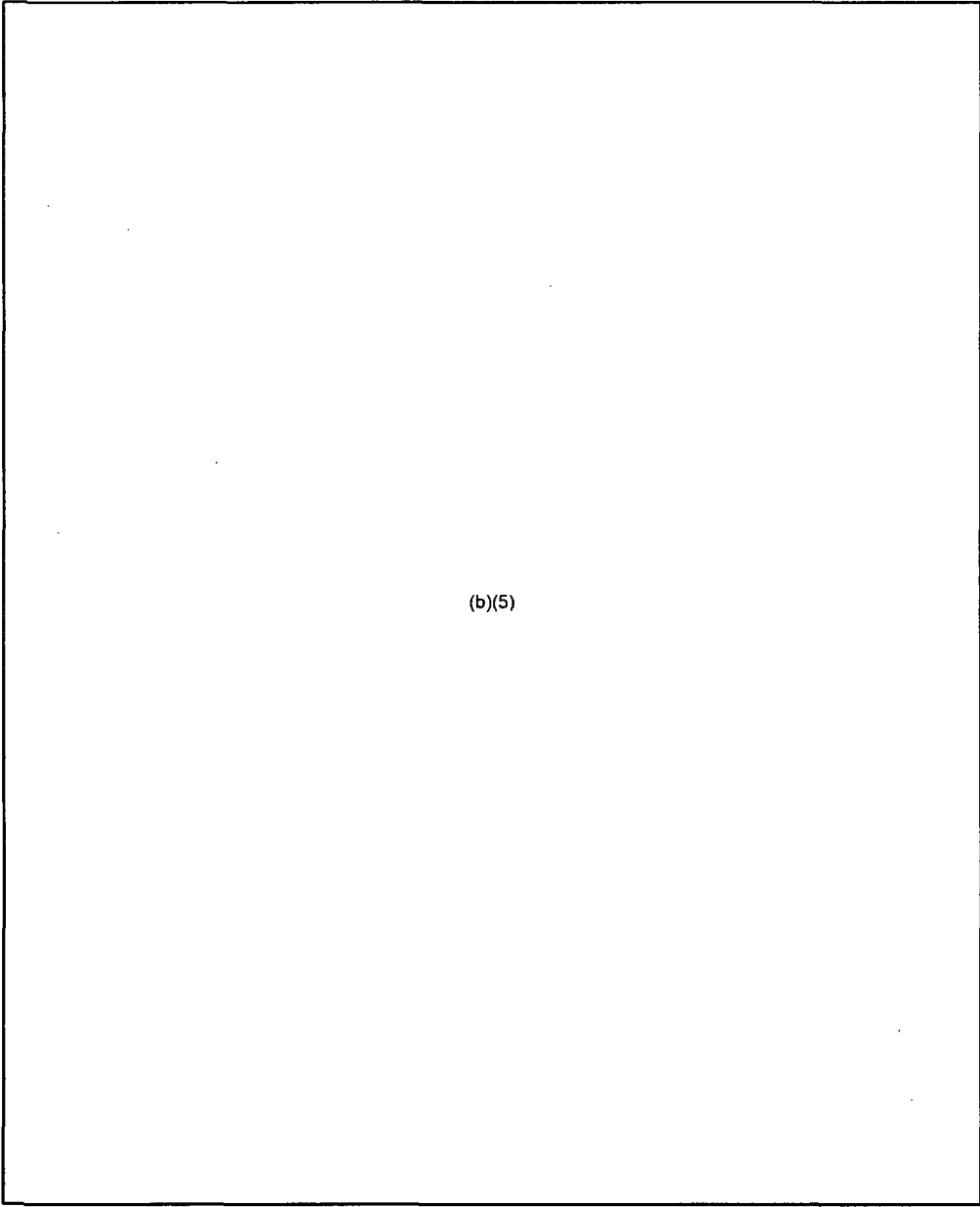


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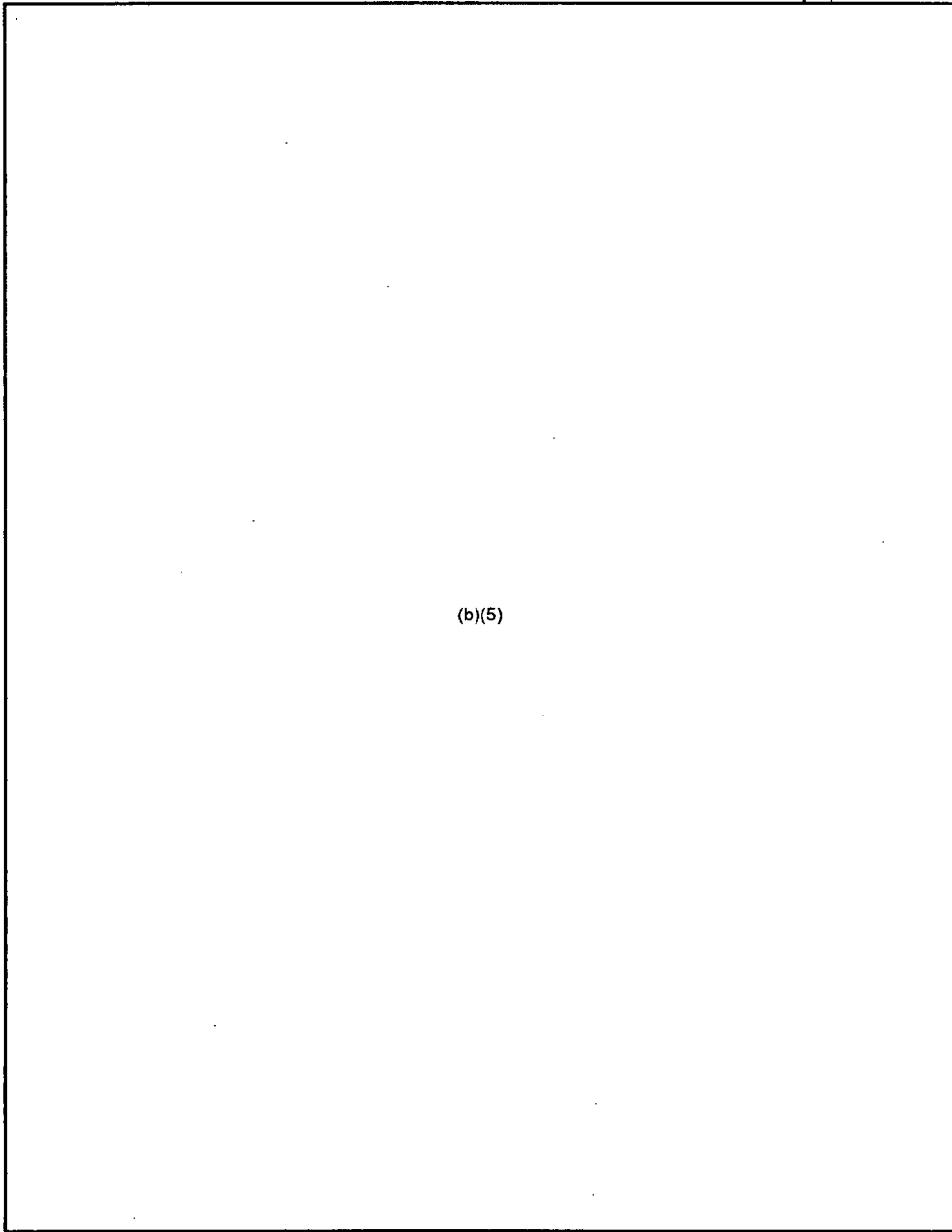
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6.2 Containment Systems



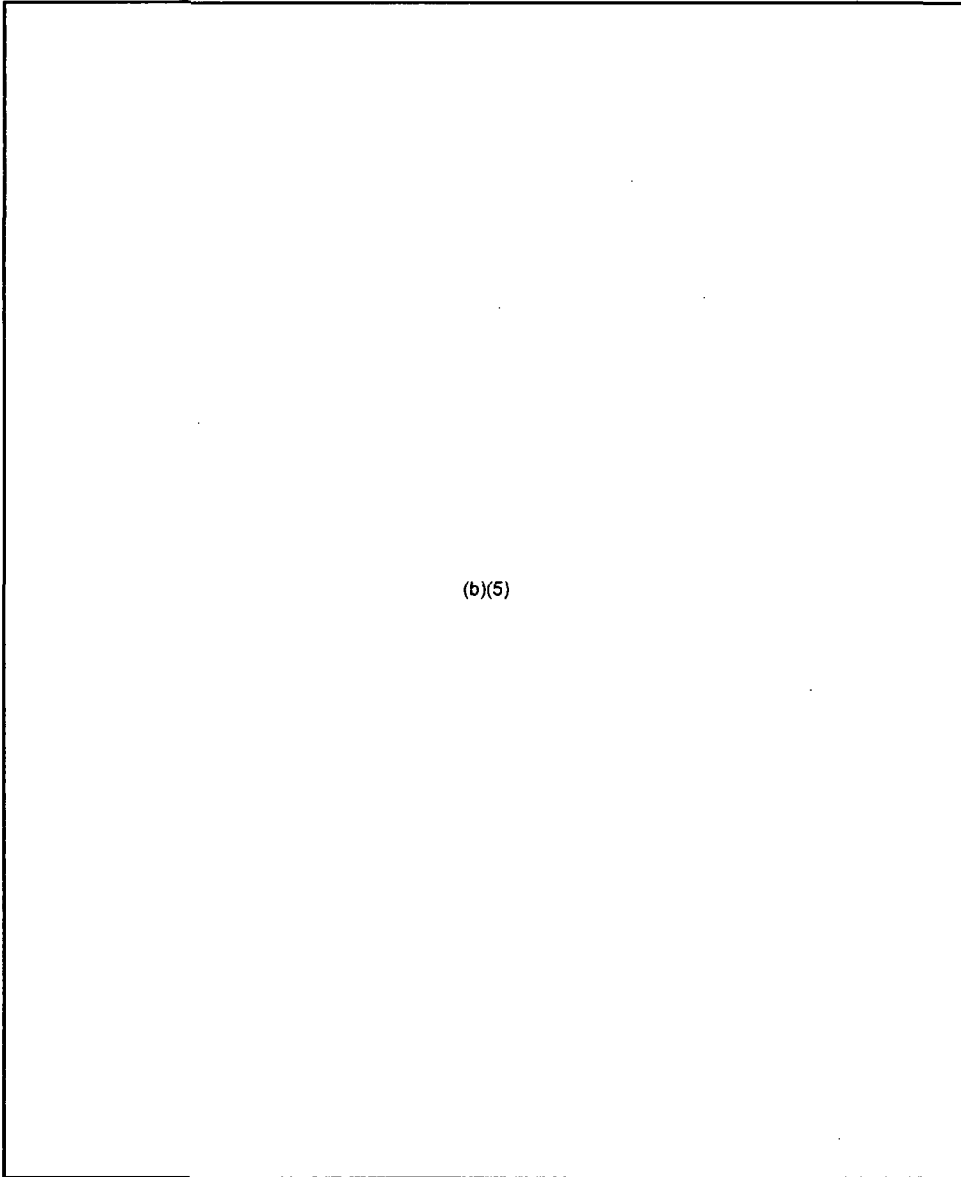
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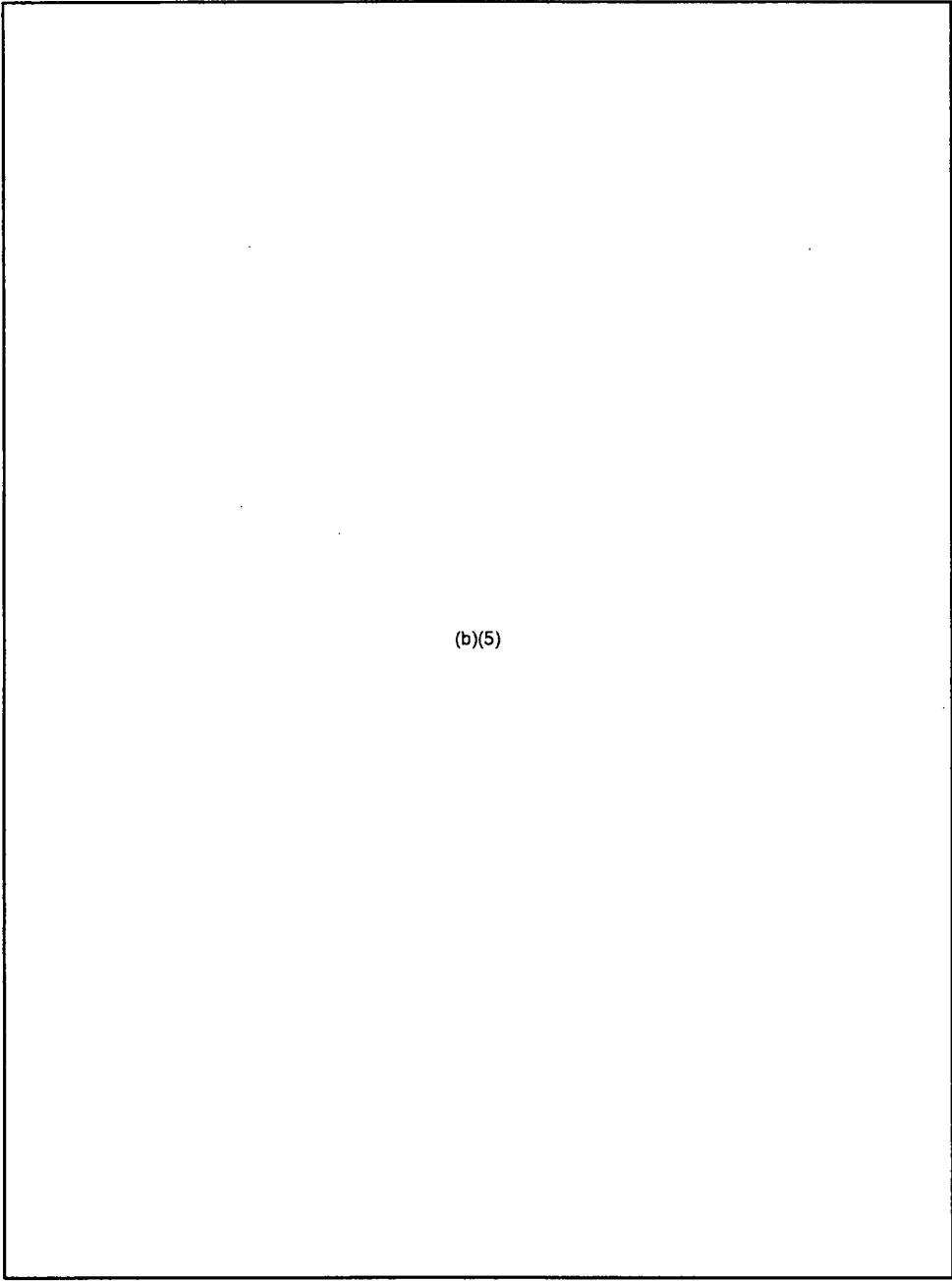
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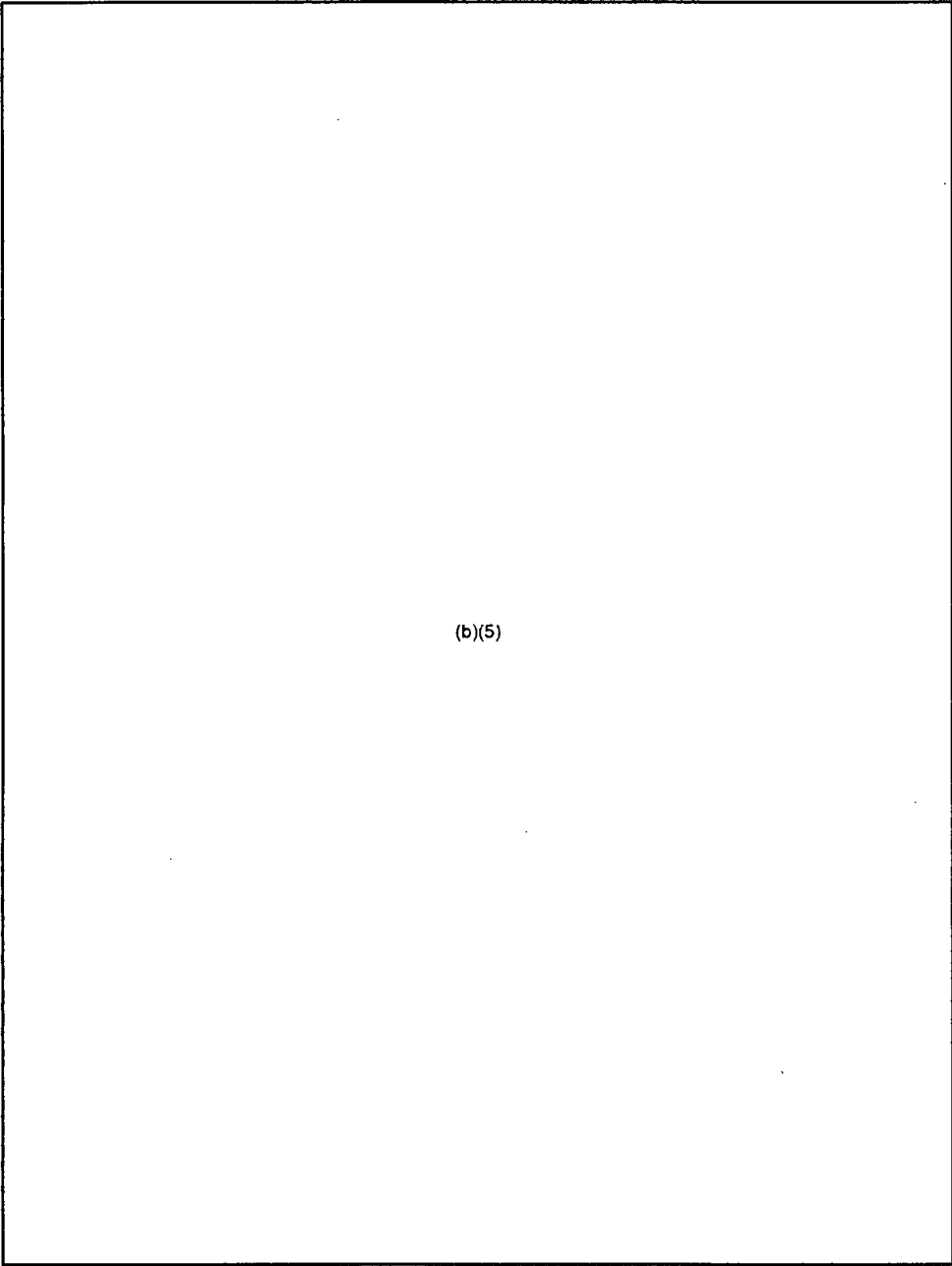
6.2.1.1.1 Introduction



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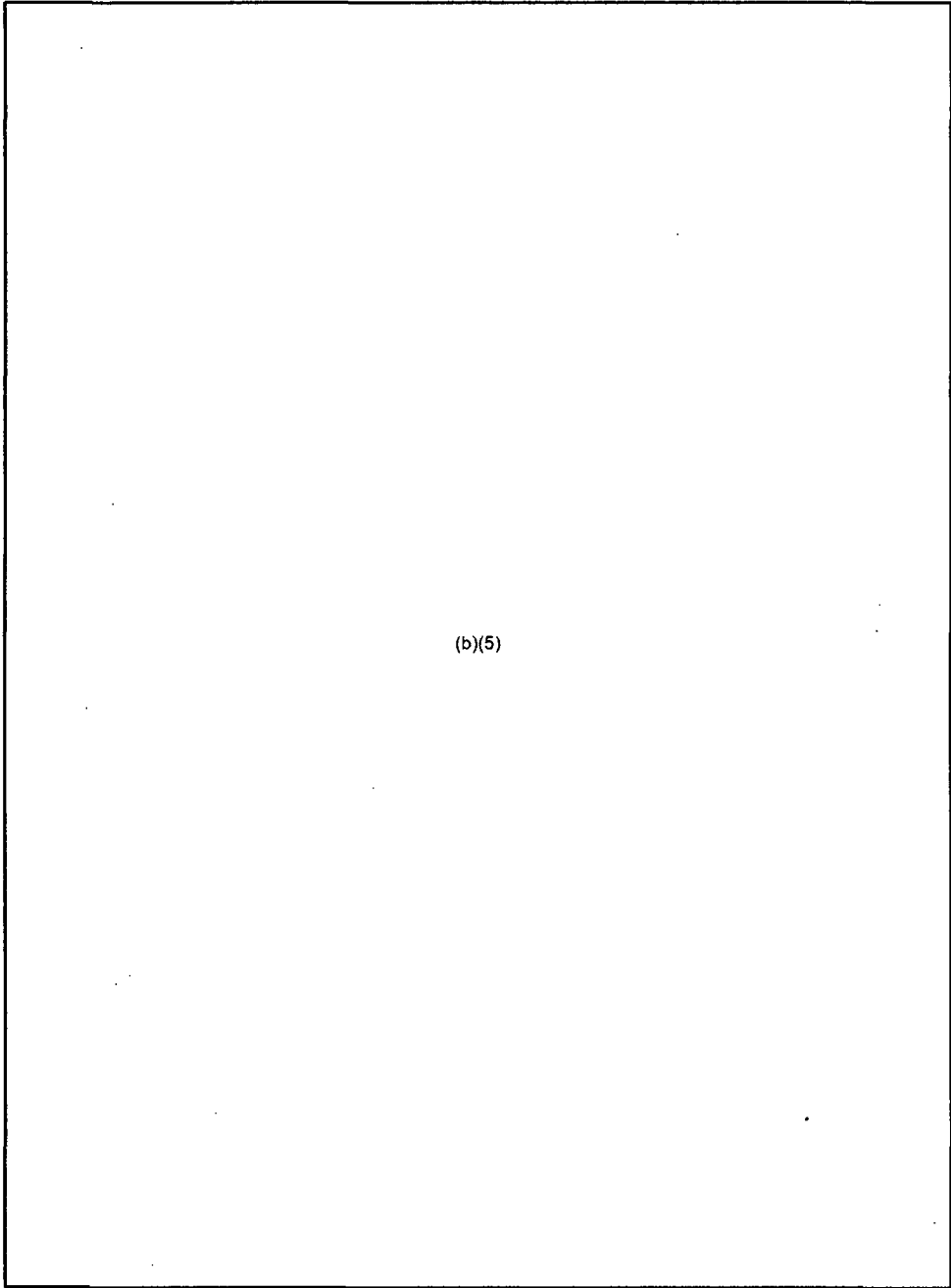


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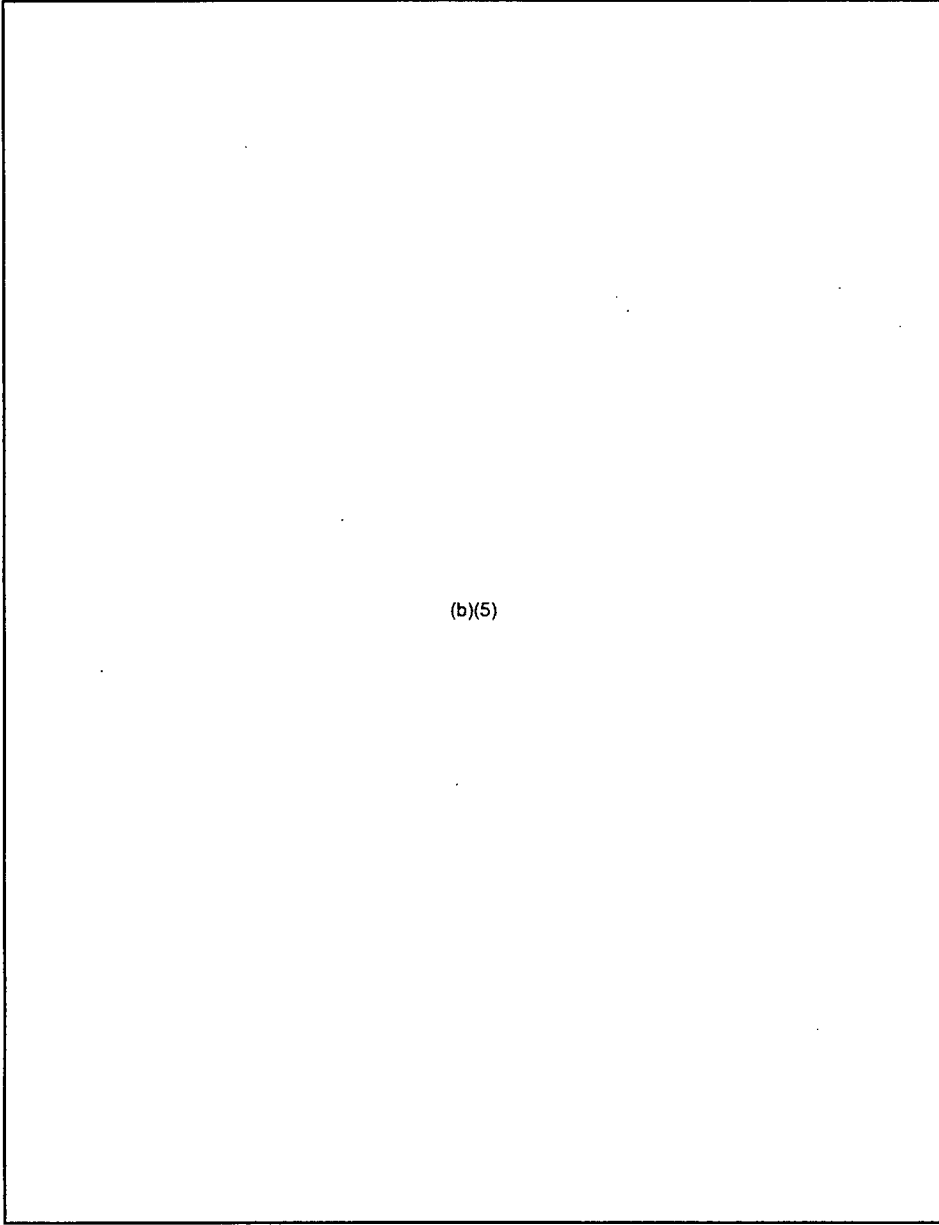
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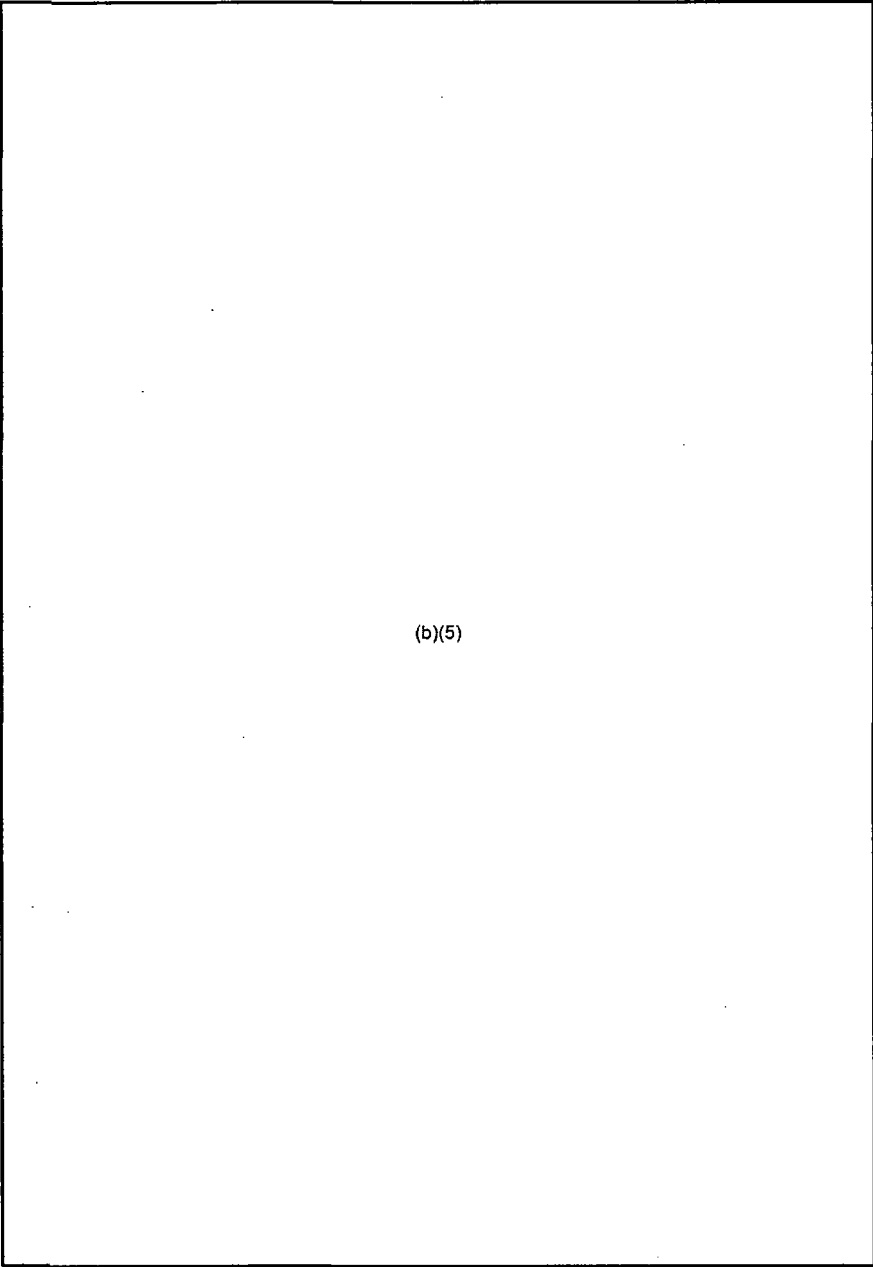
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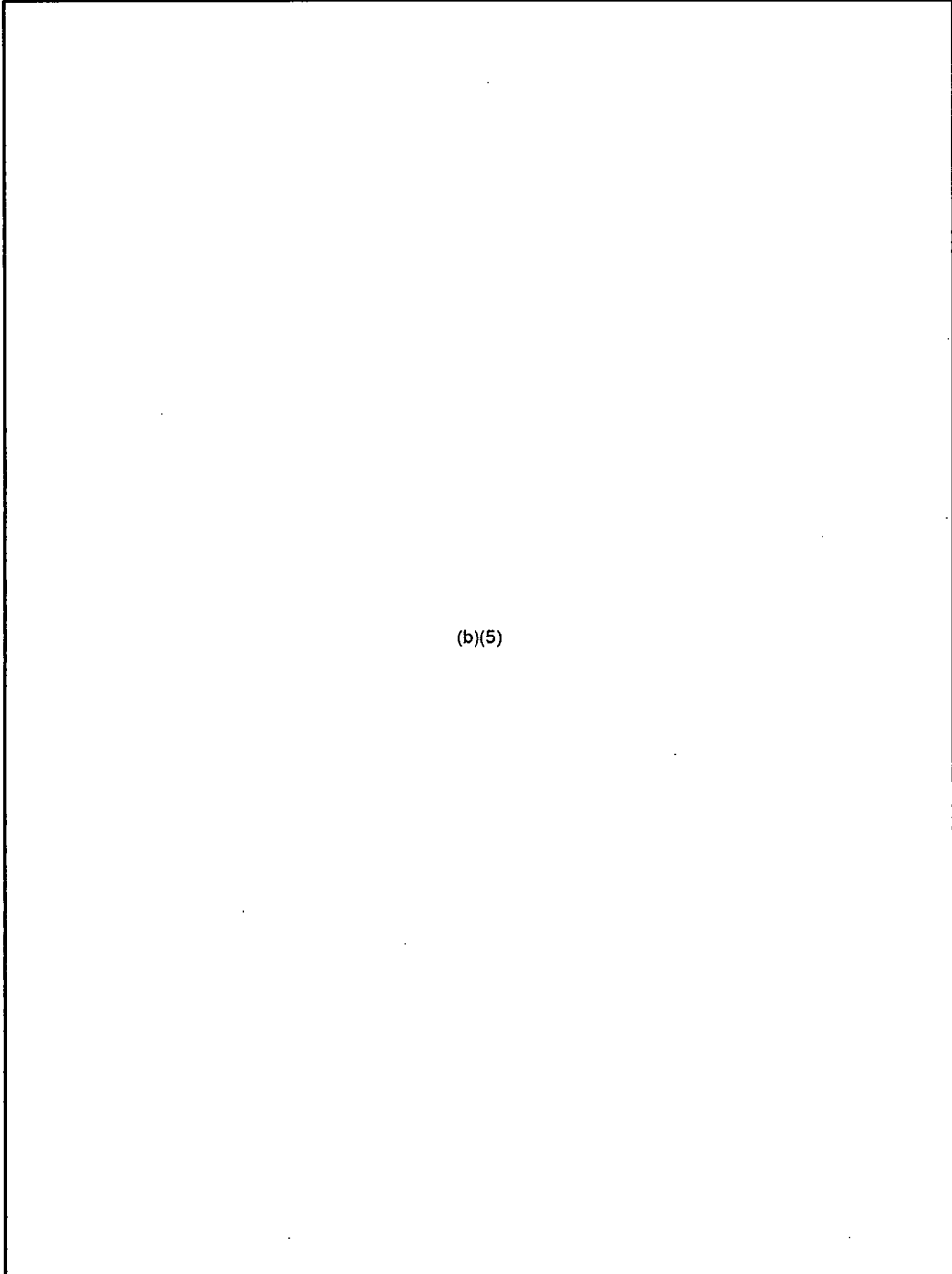
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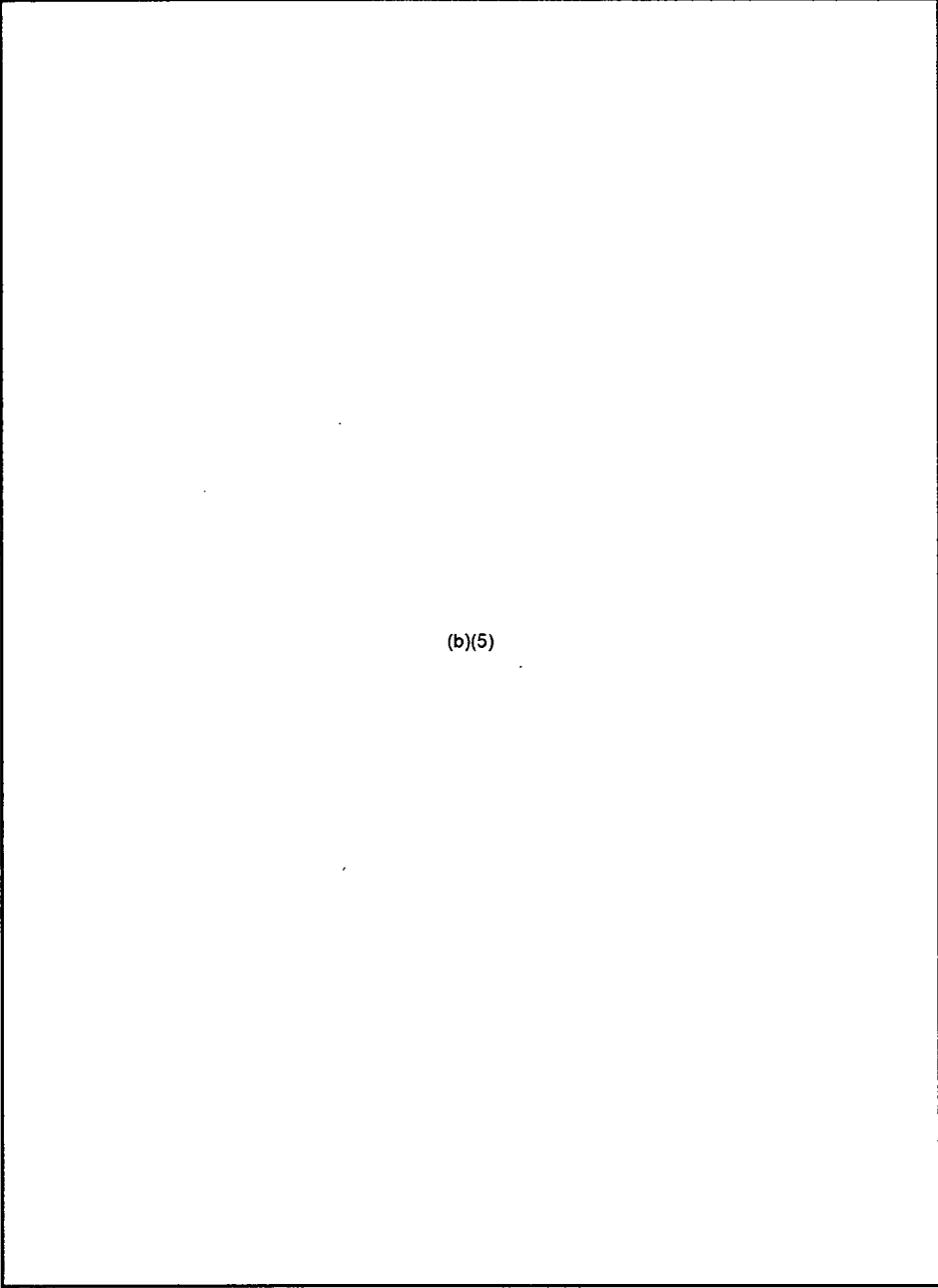
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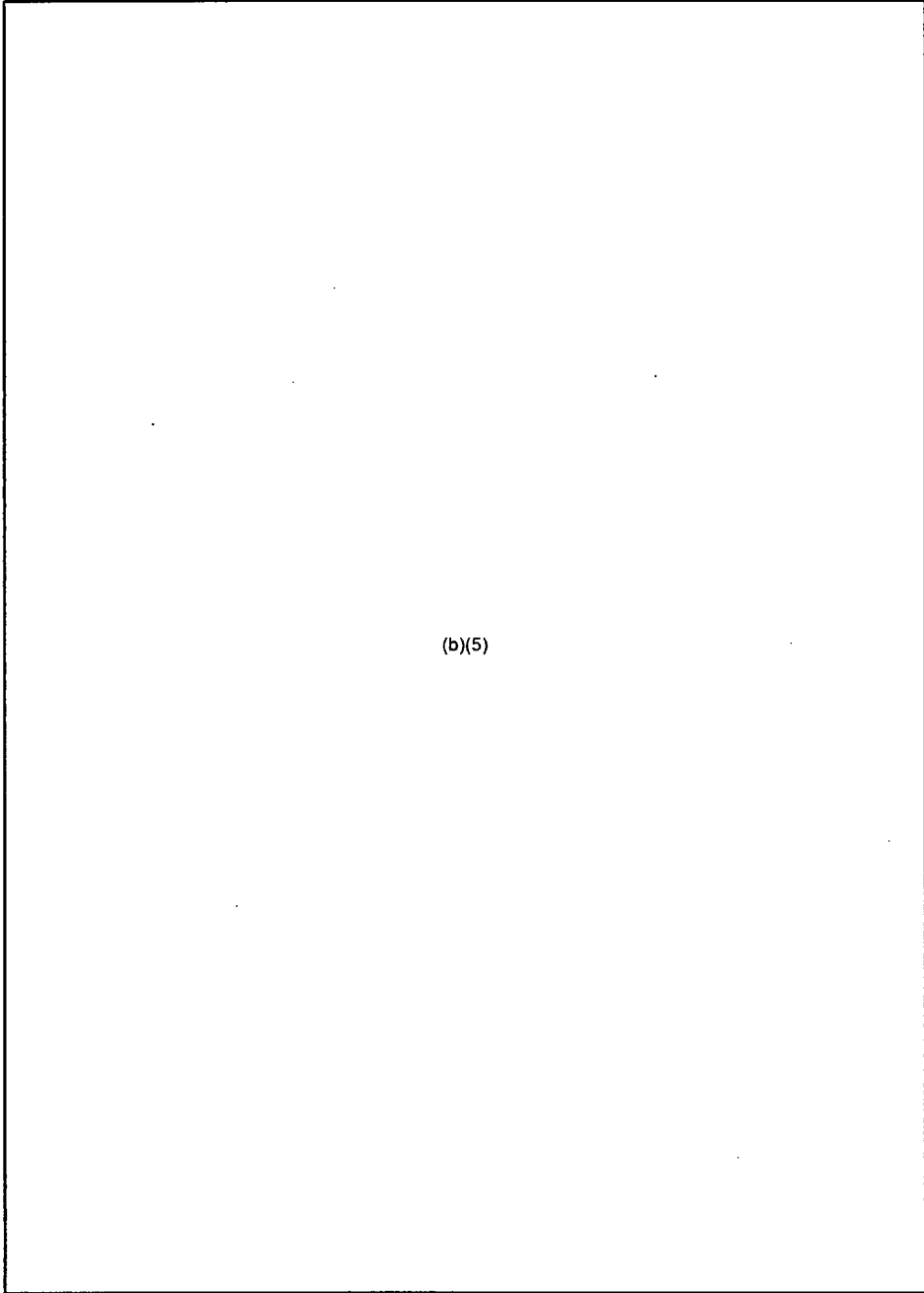
6.2.1.3 *Mass and Energy Release Analyses for Postulated Loss of Coolant Accidents*

6.2.1.3.1 **Introduction**

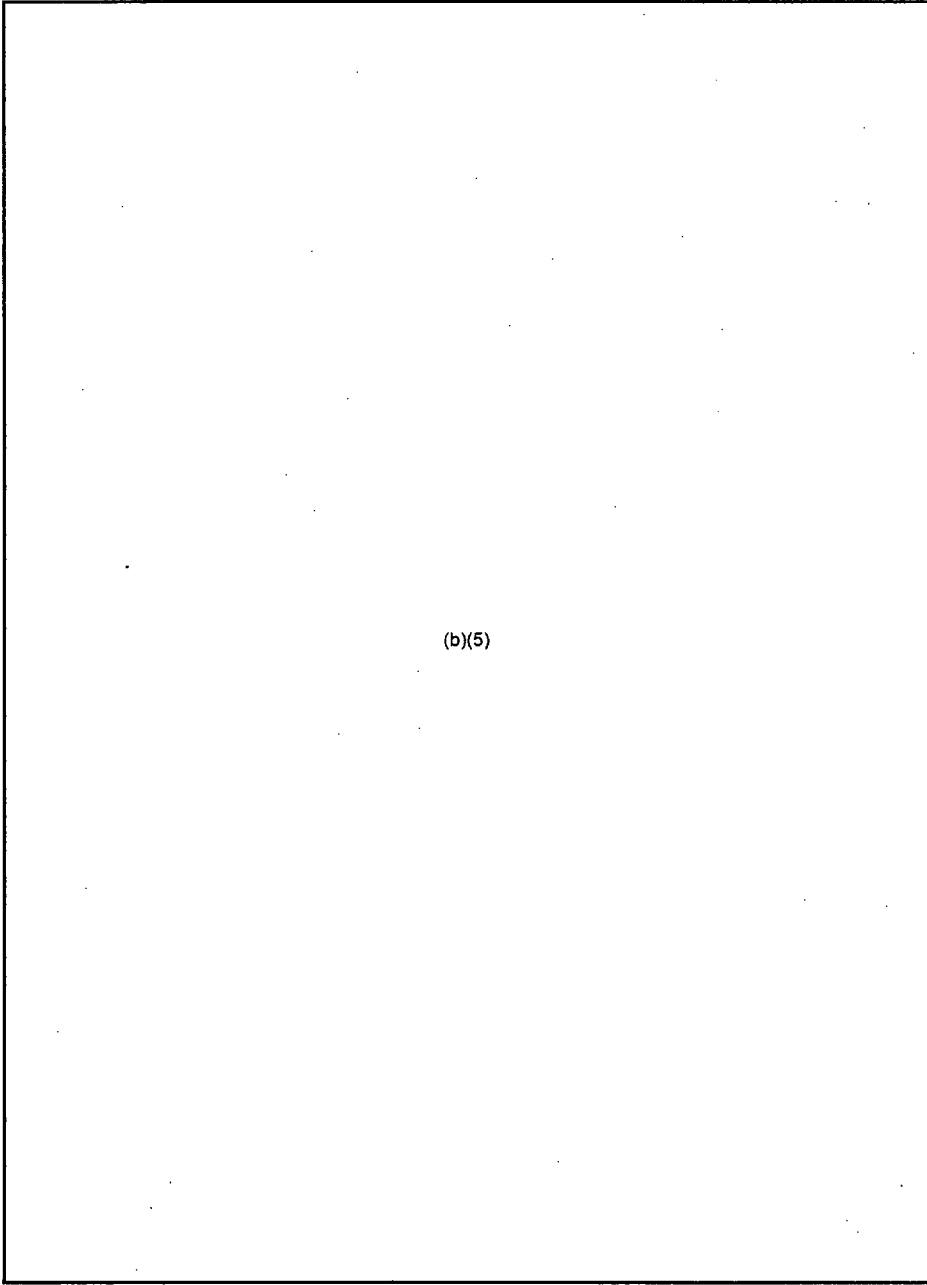
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6.2.1.3.2 **Summary of Application**

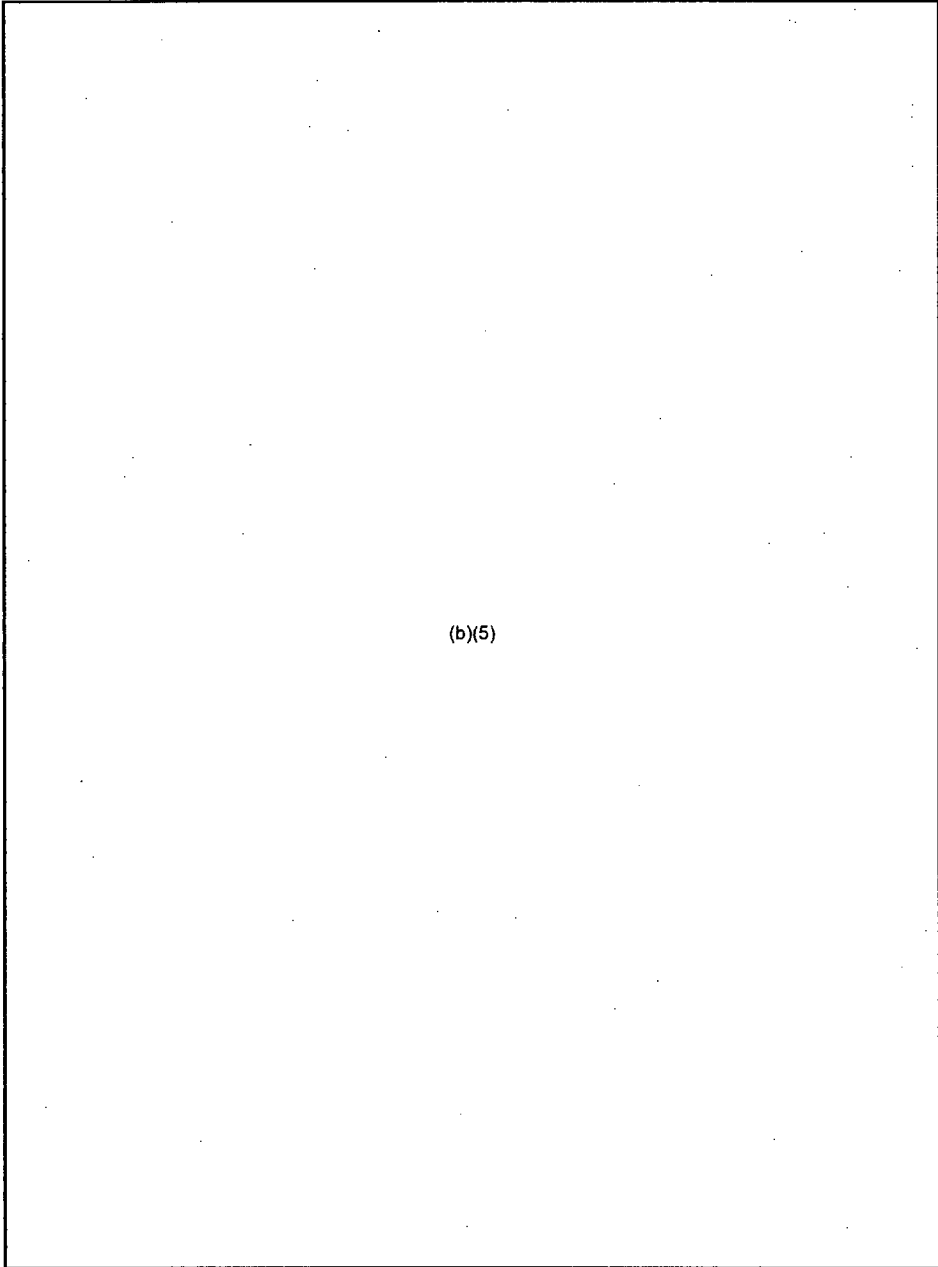
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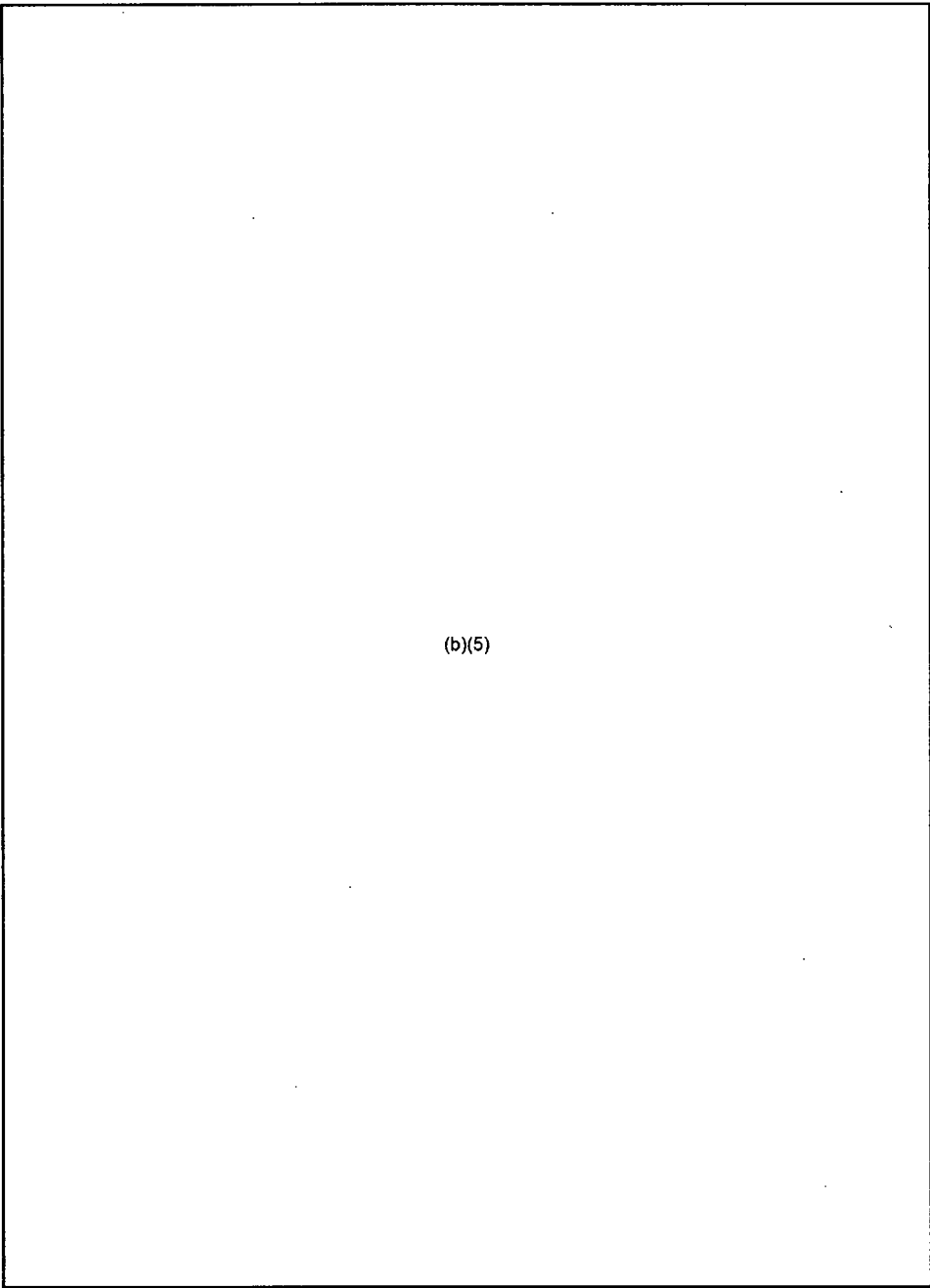
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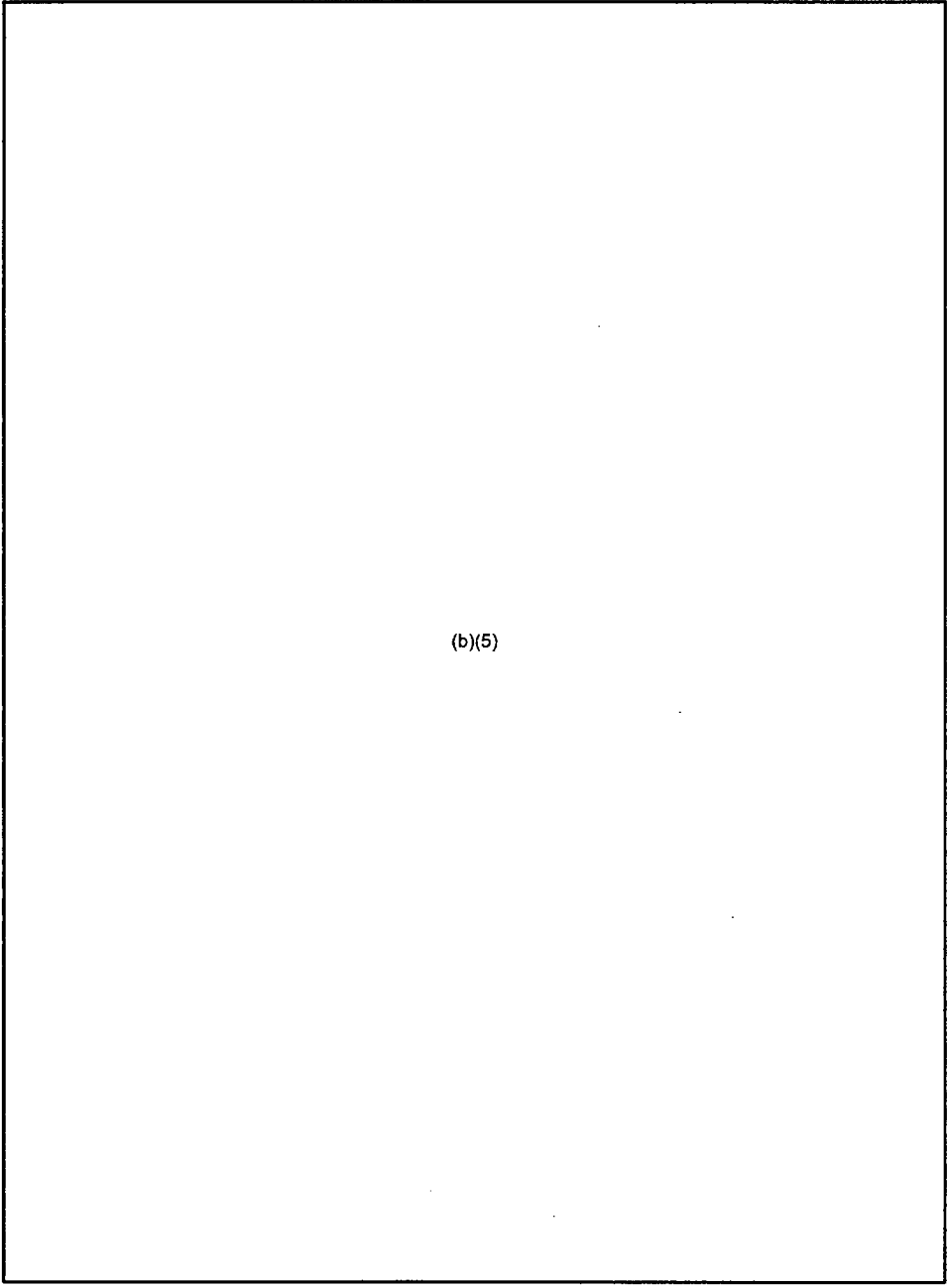
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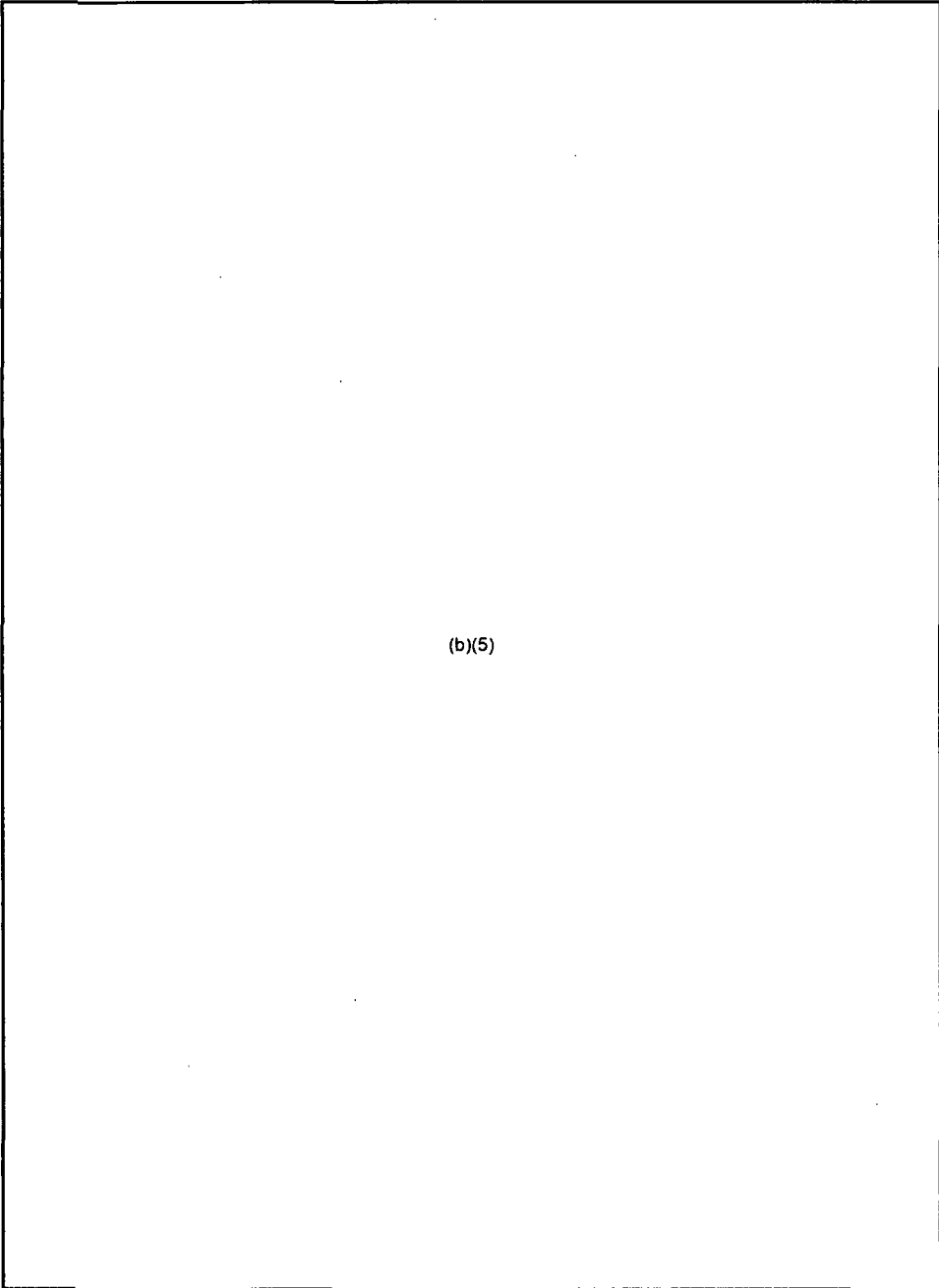
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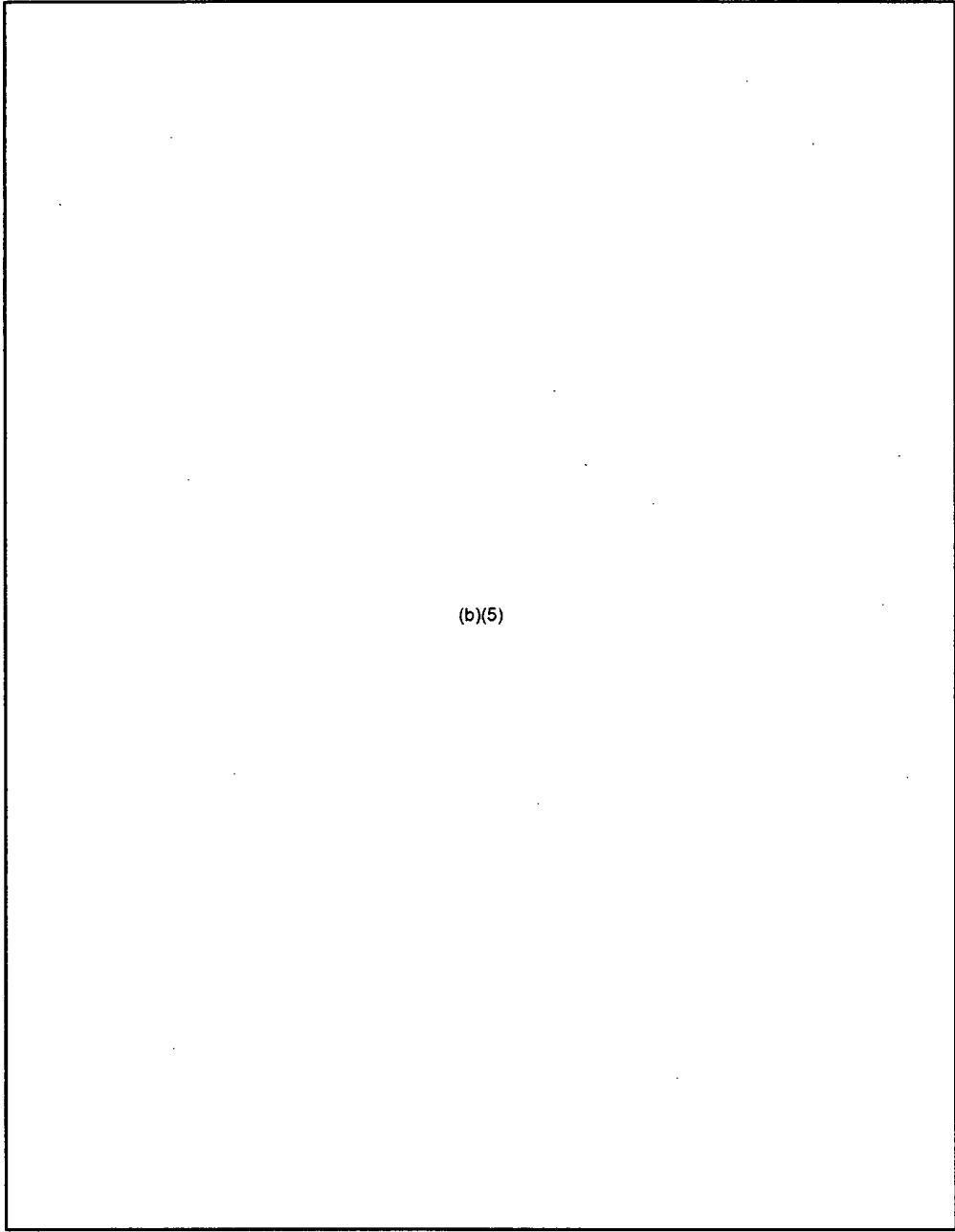


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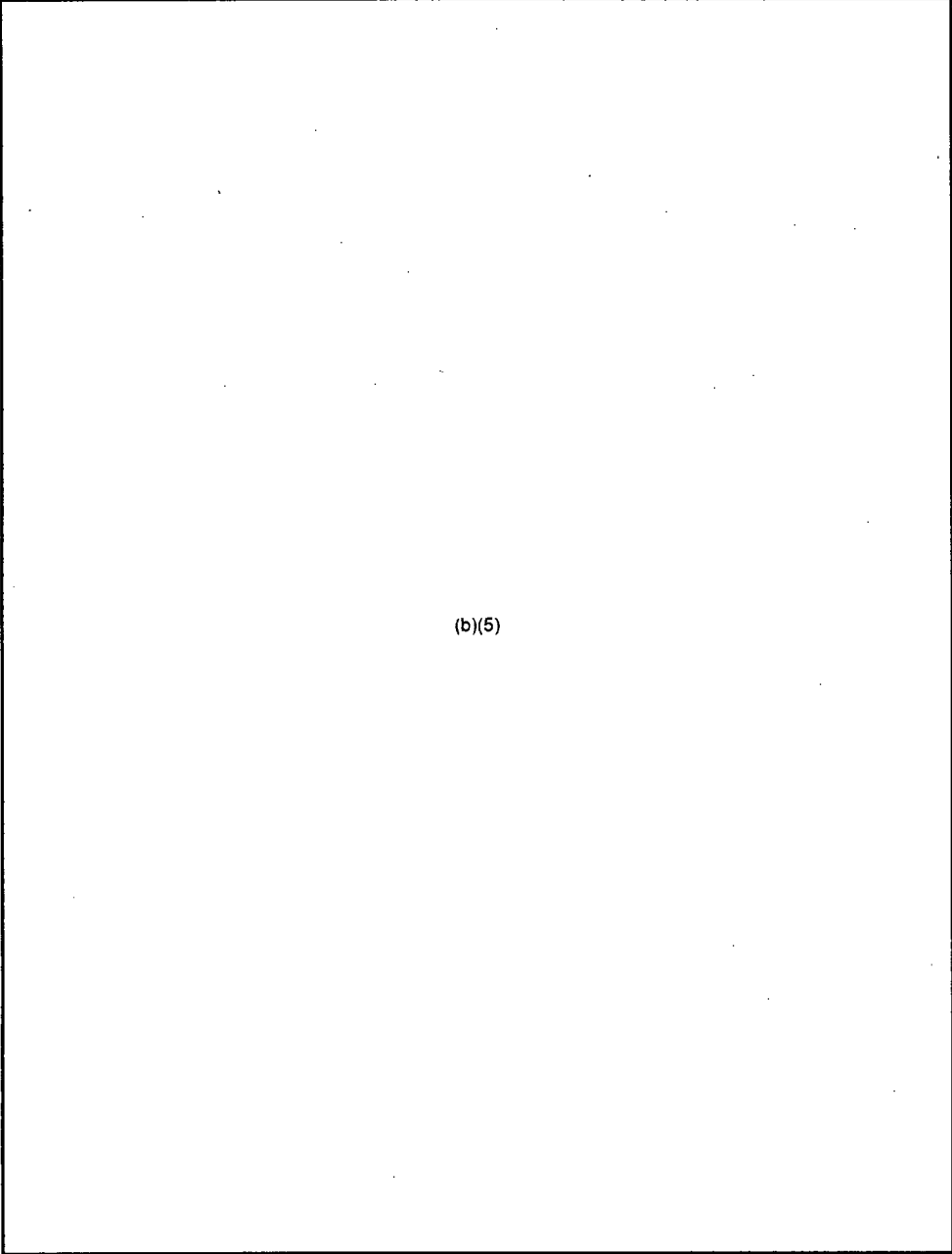


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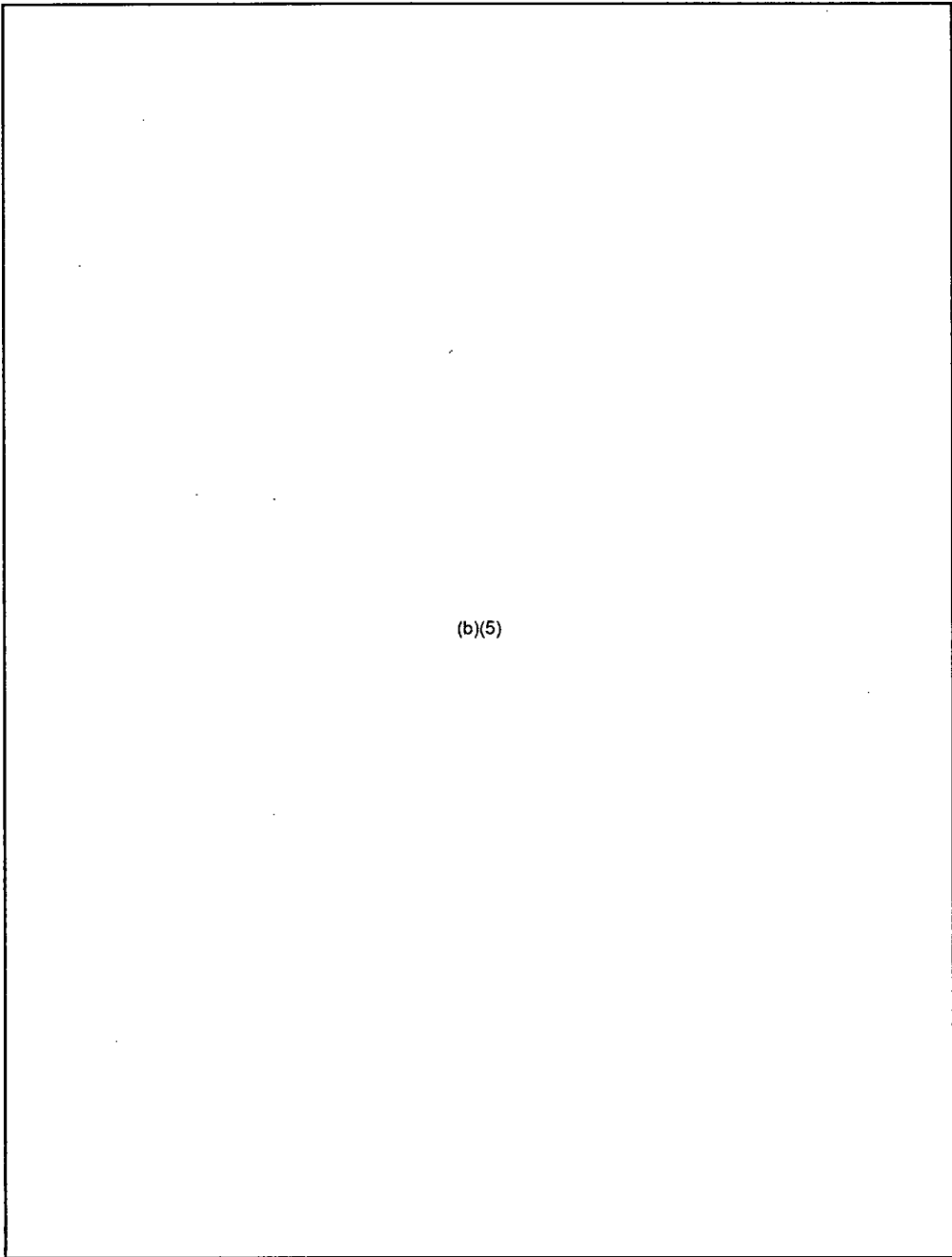
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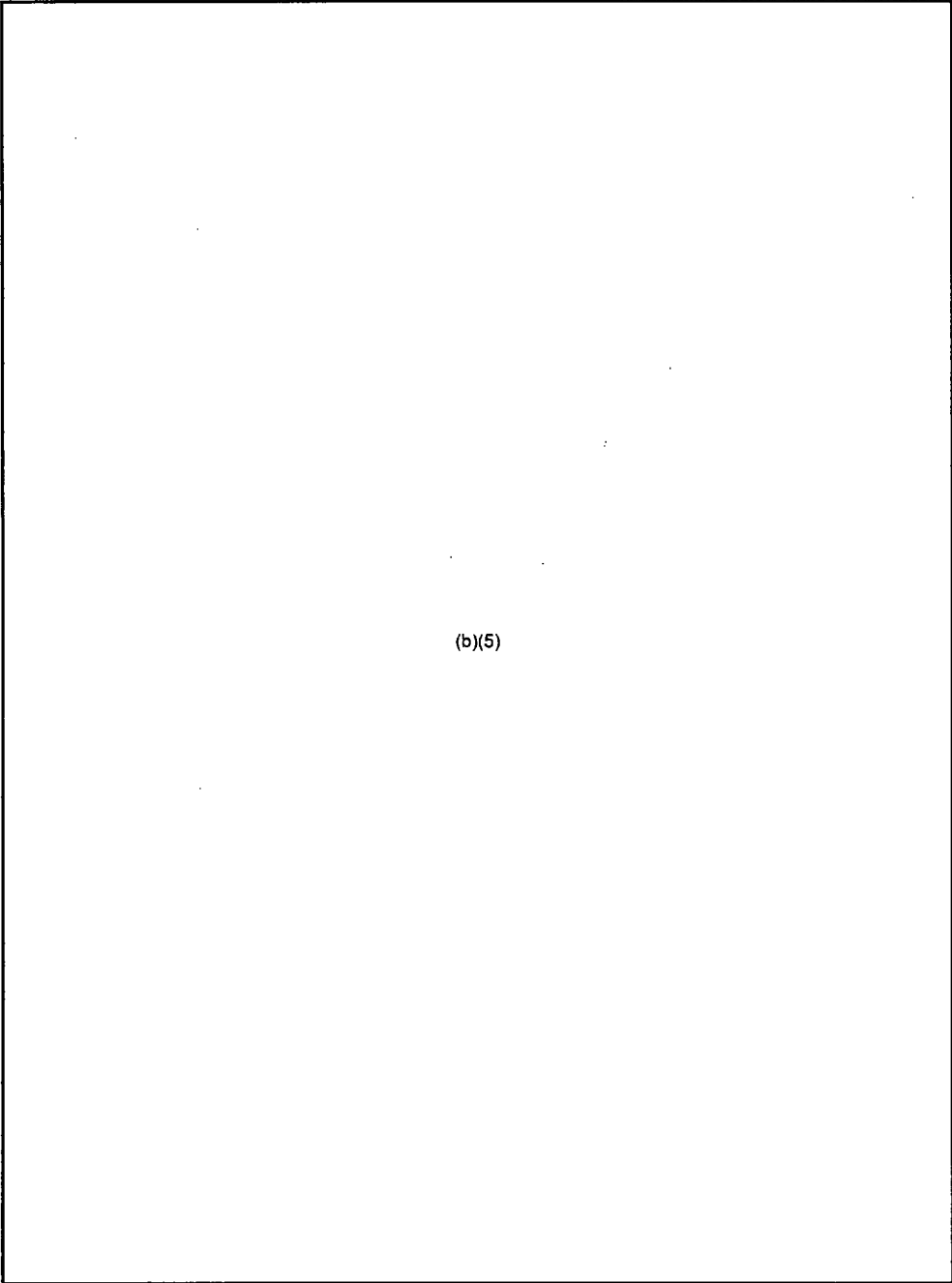
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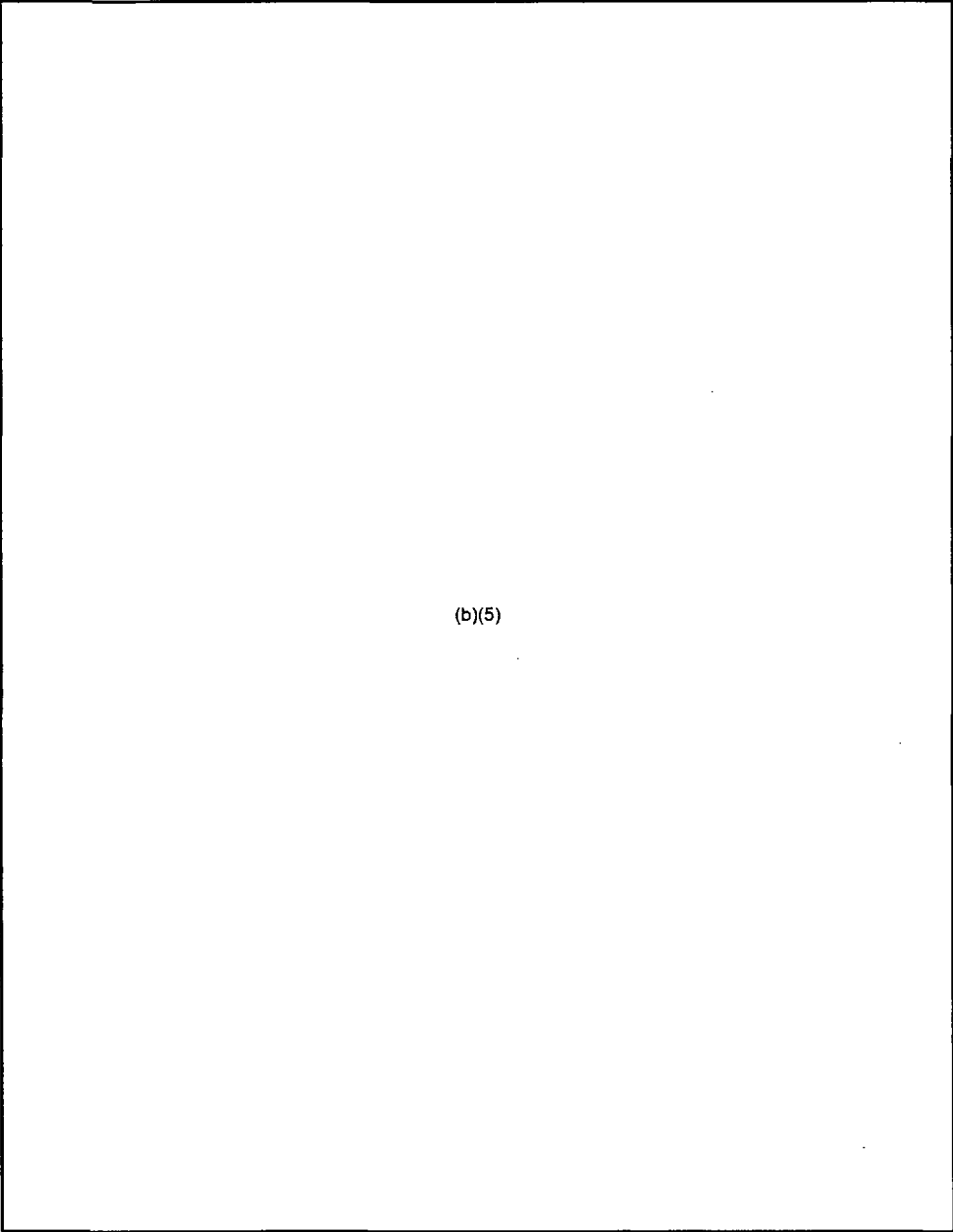
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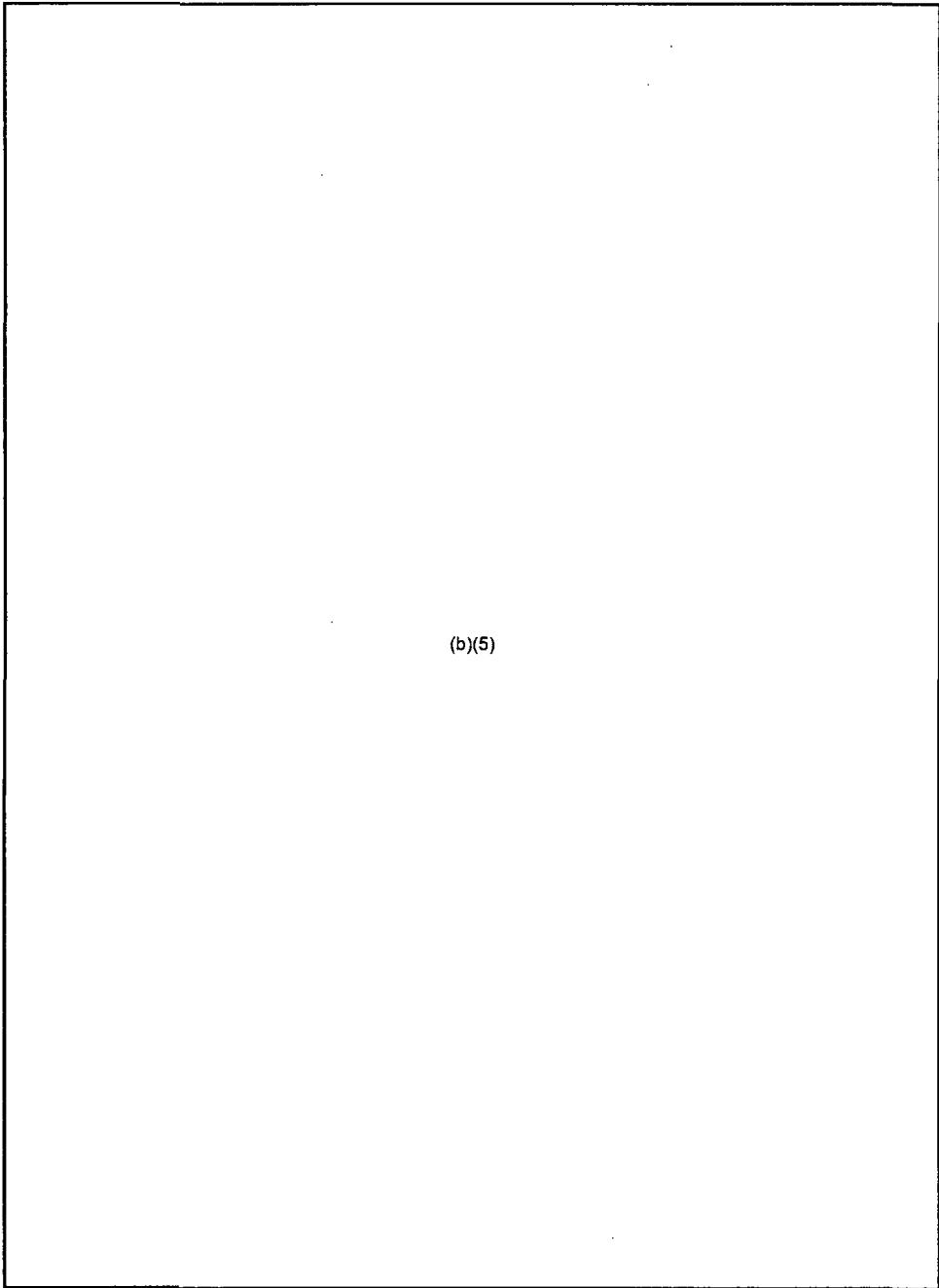
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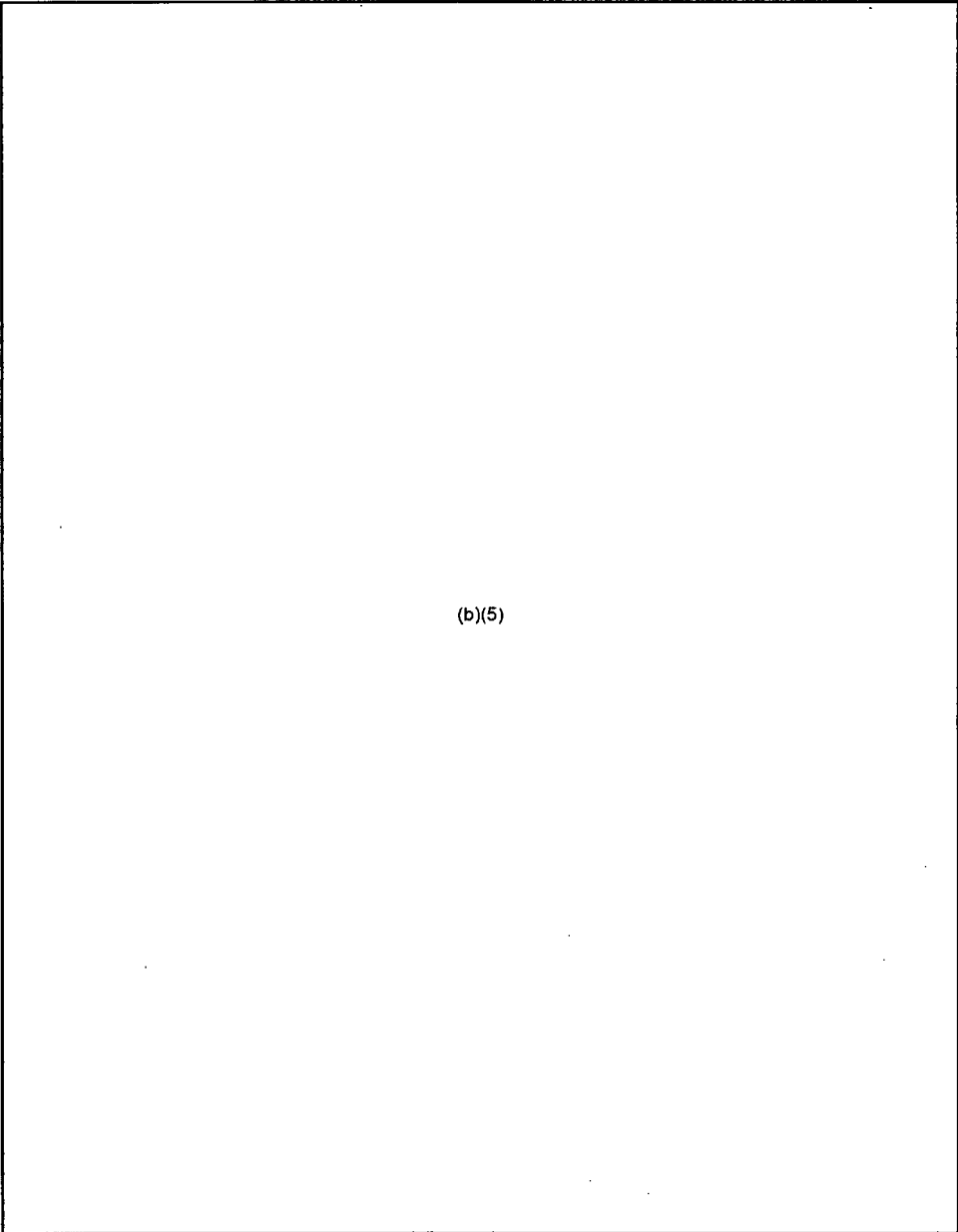
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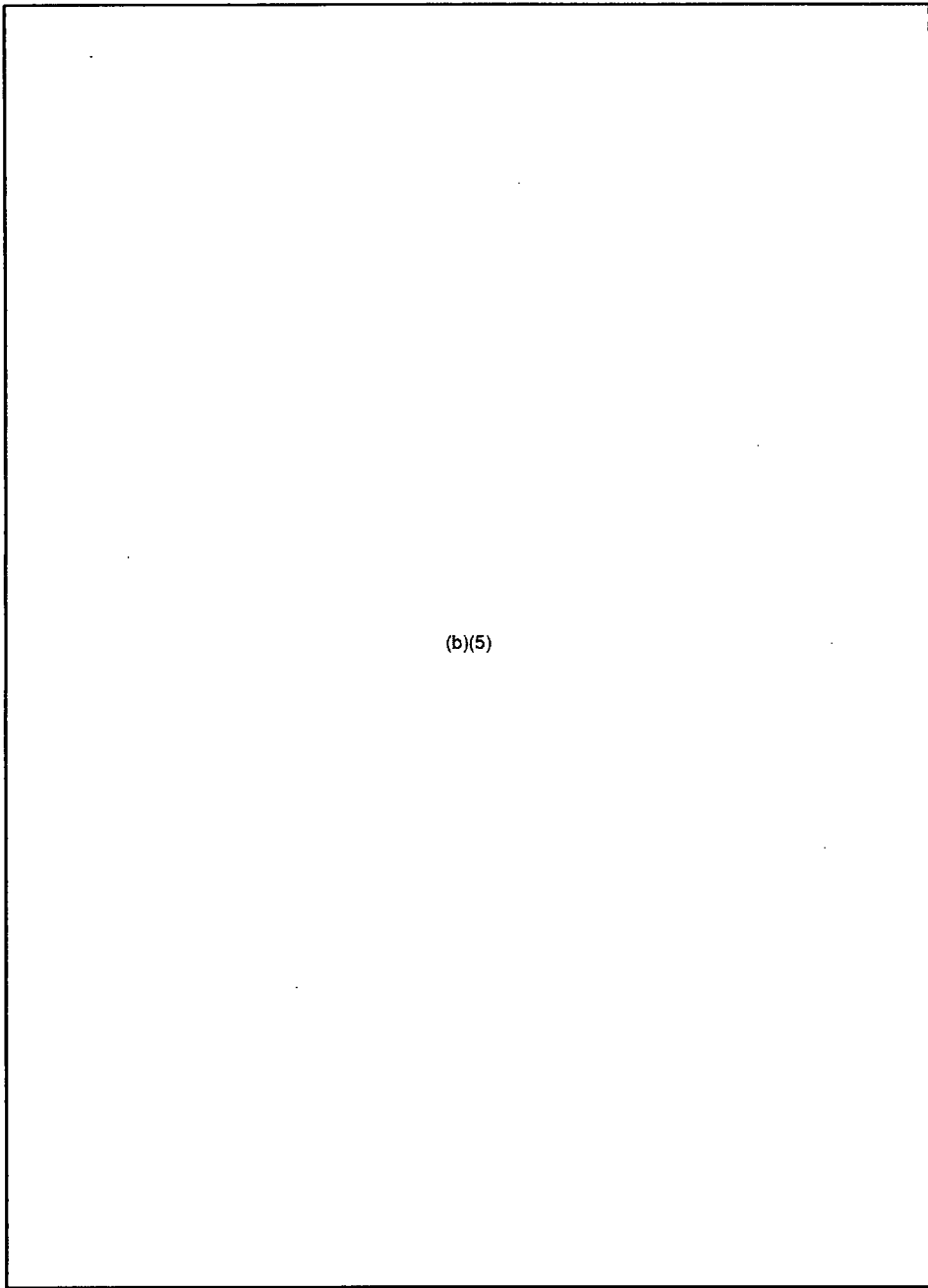
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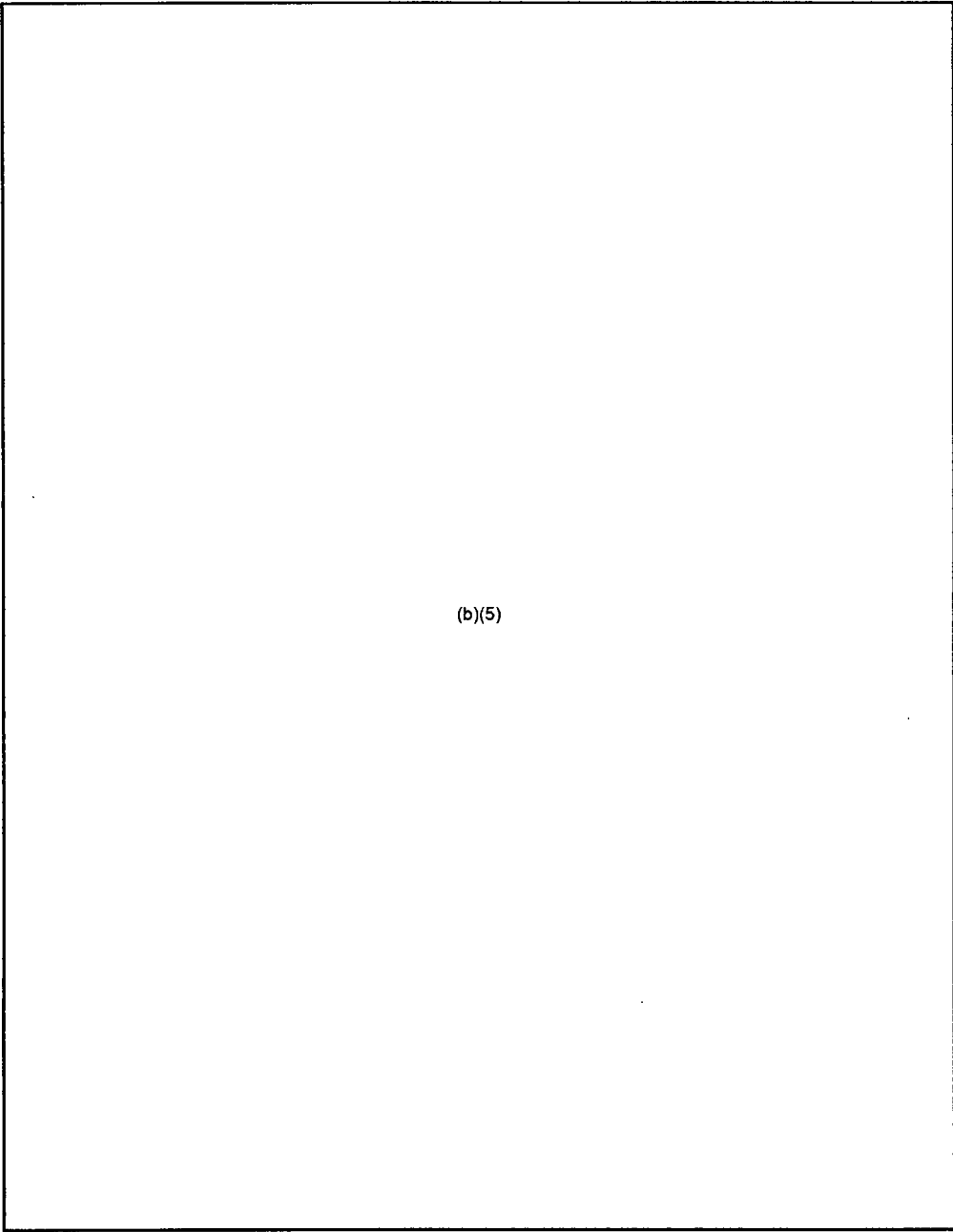
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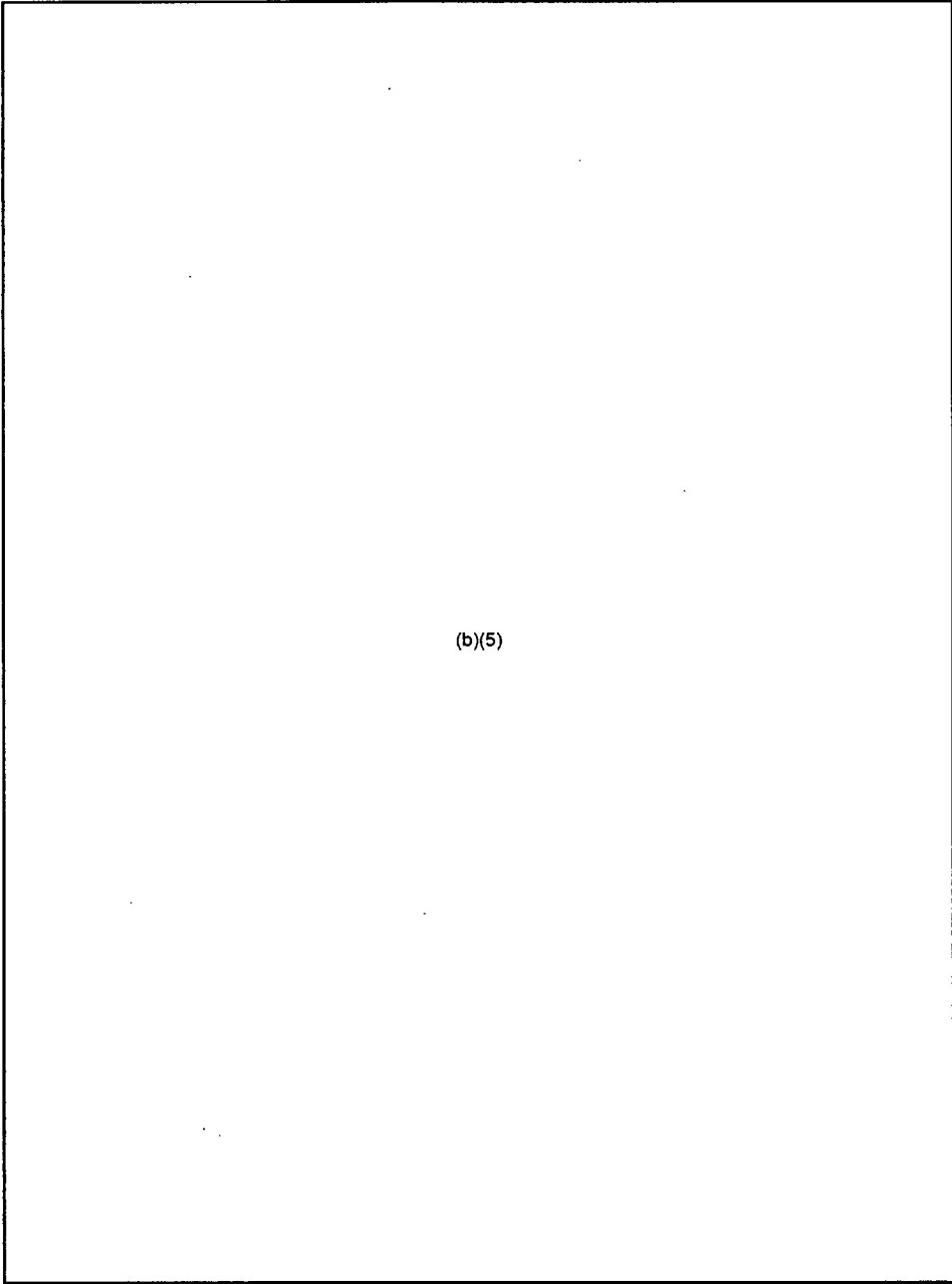
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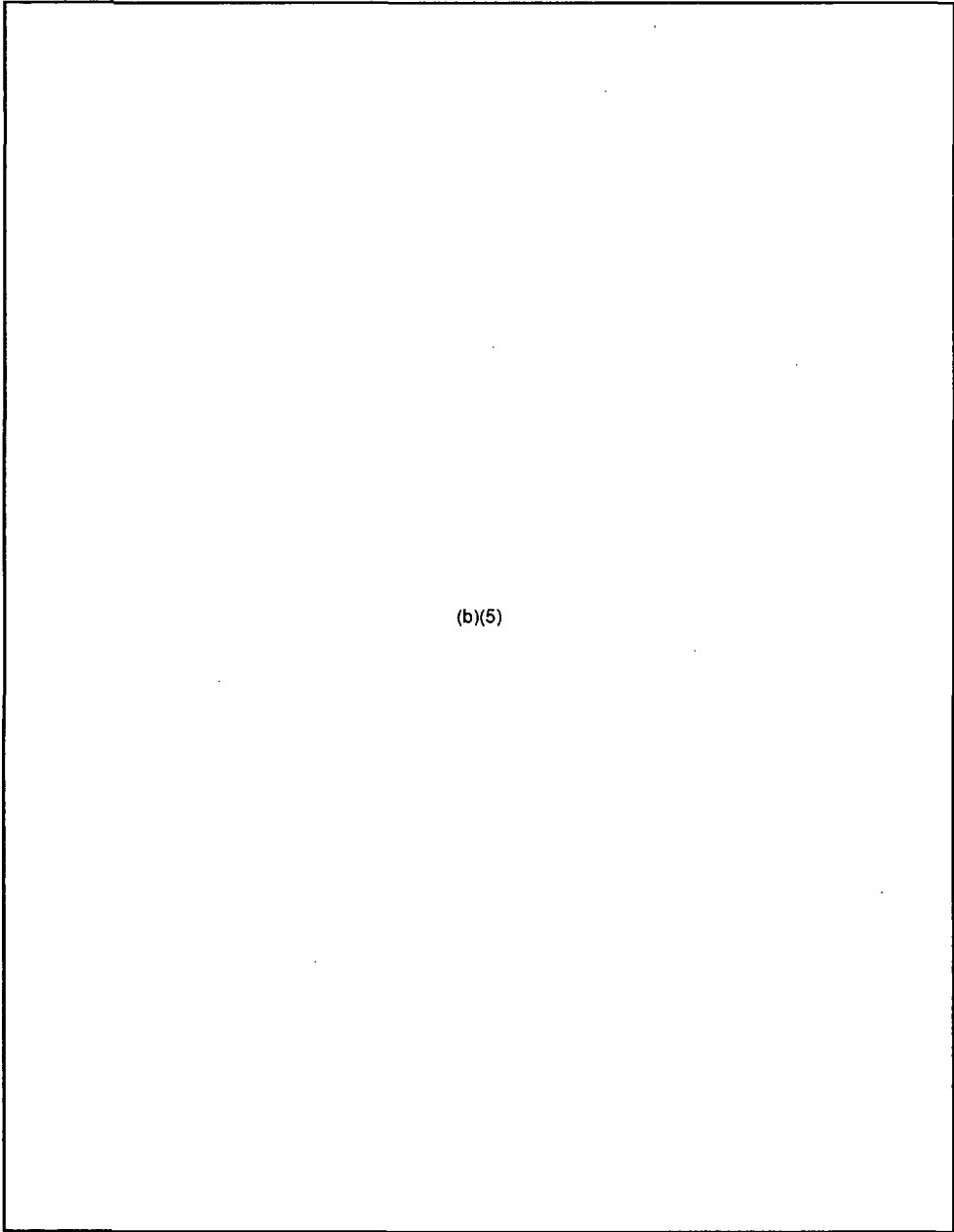
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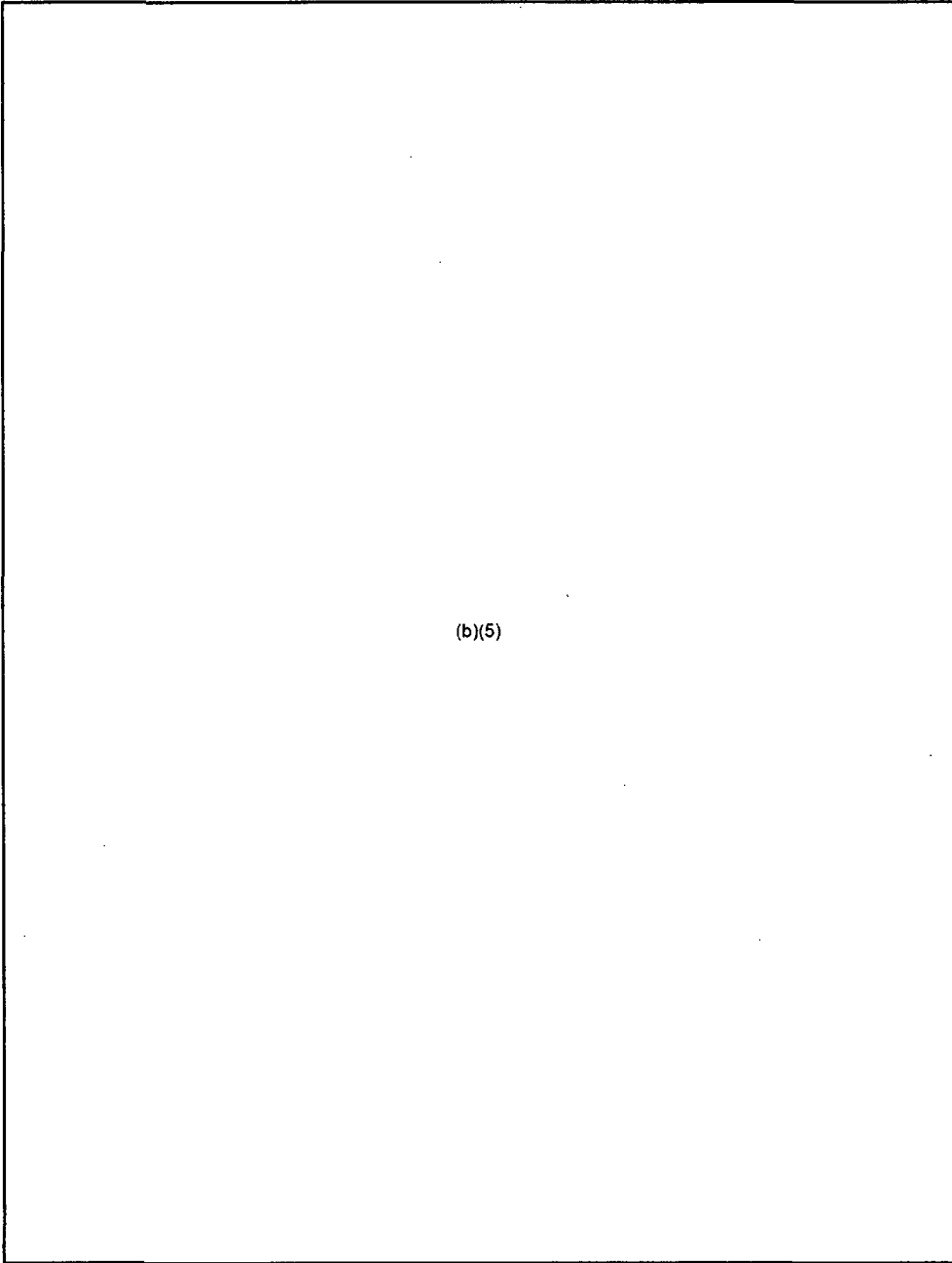
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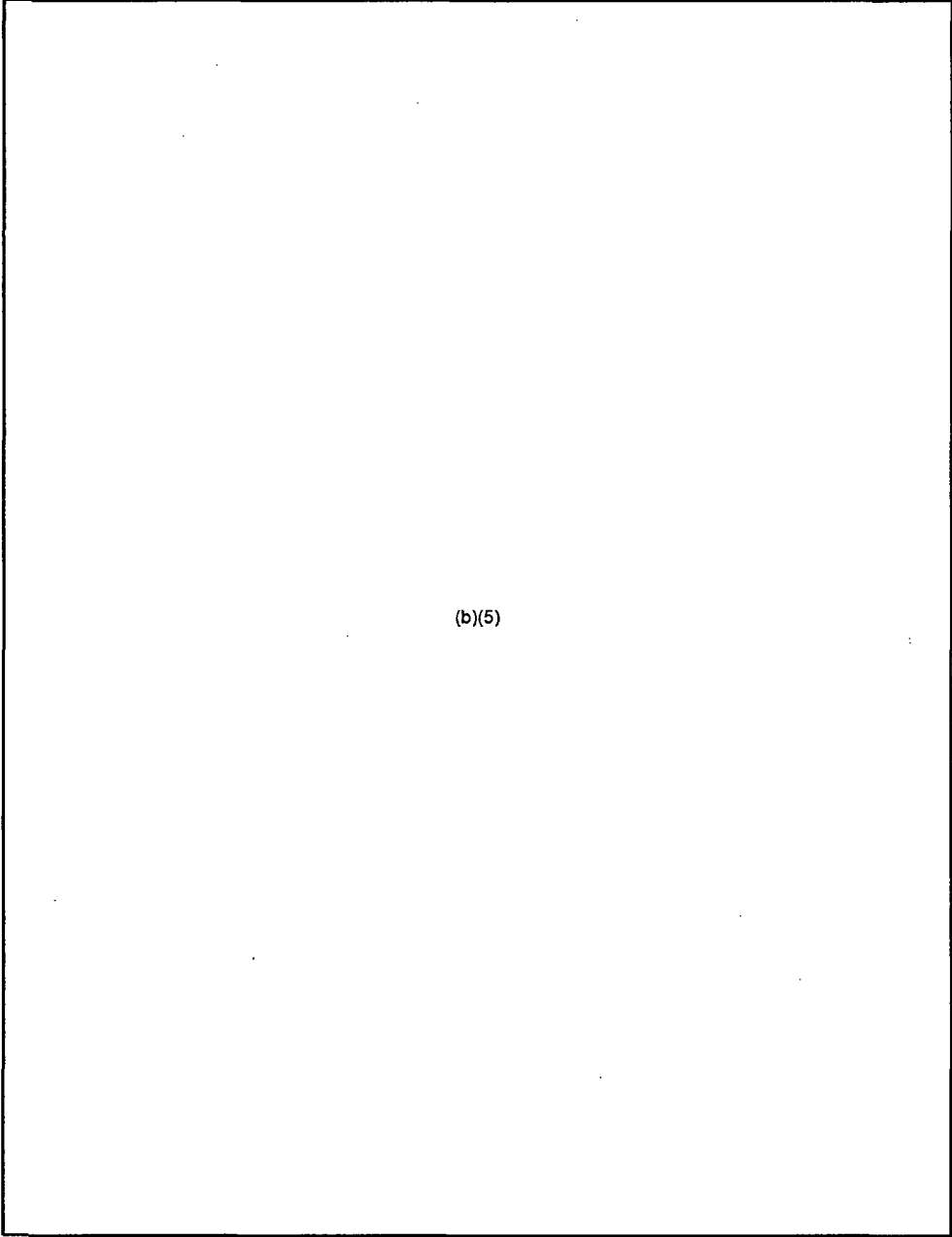
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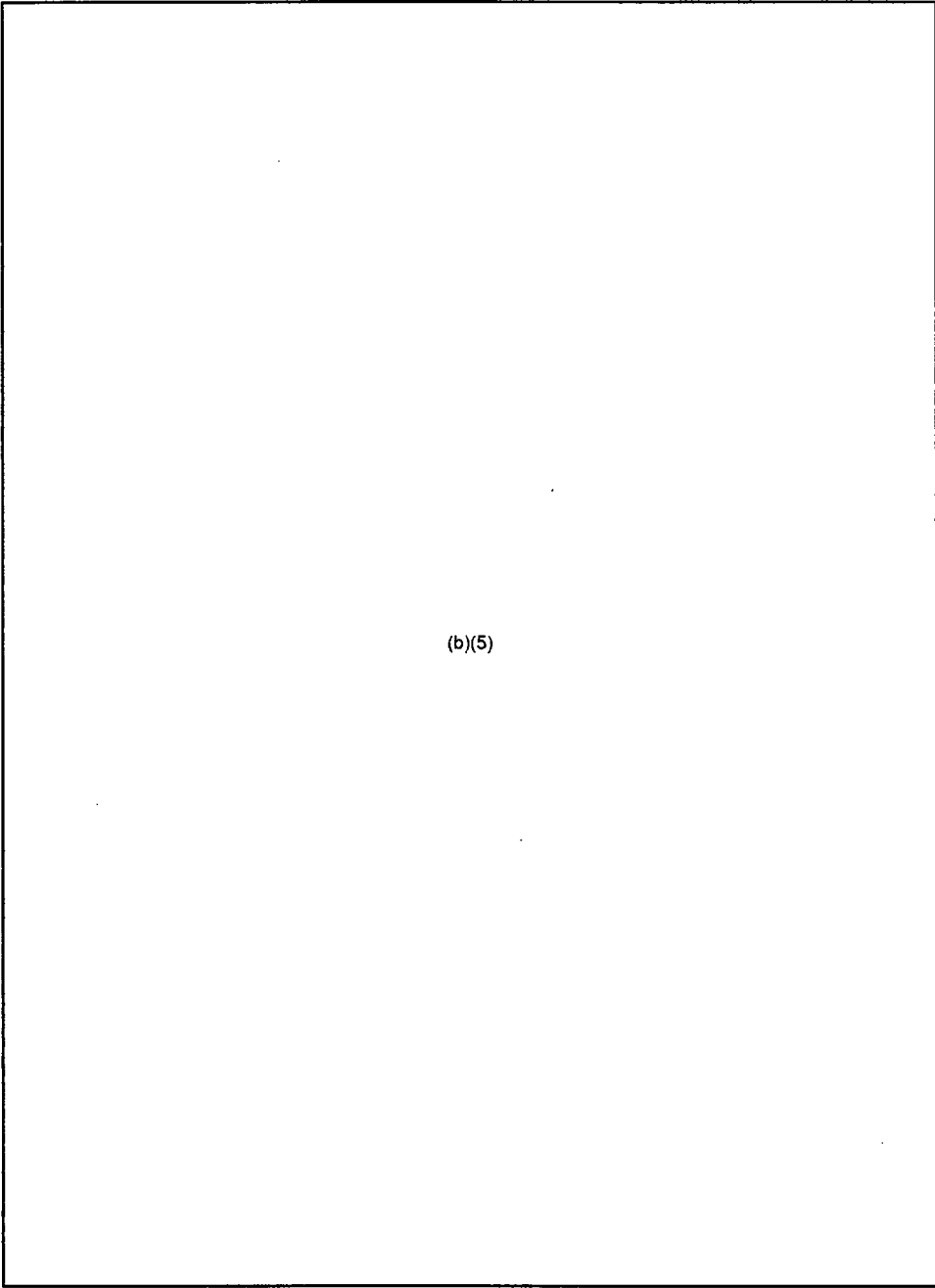
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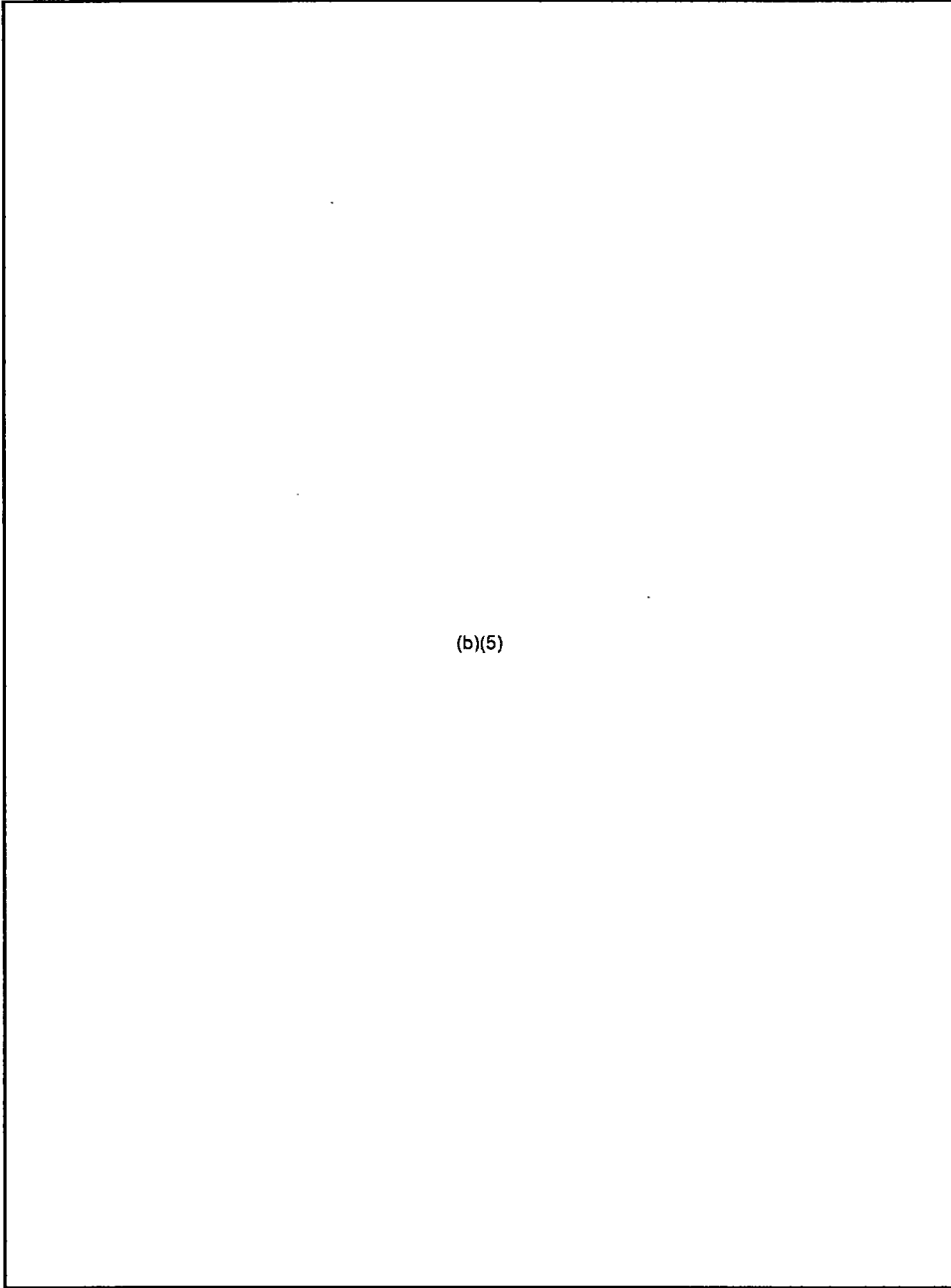
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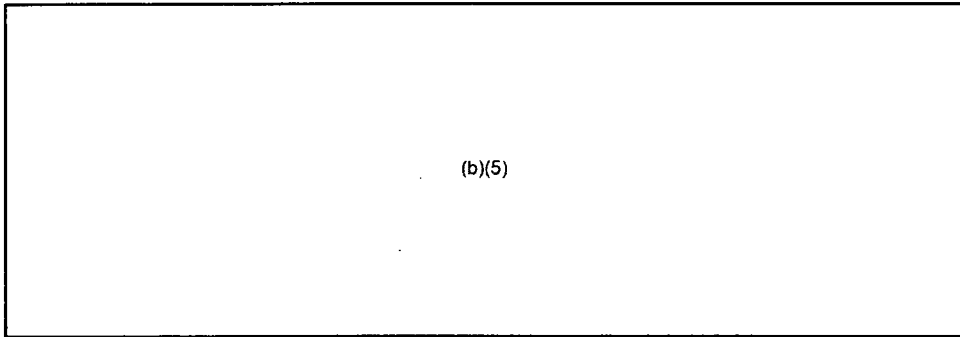
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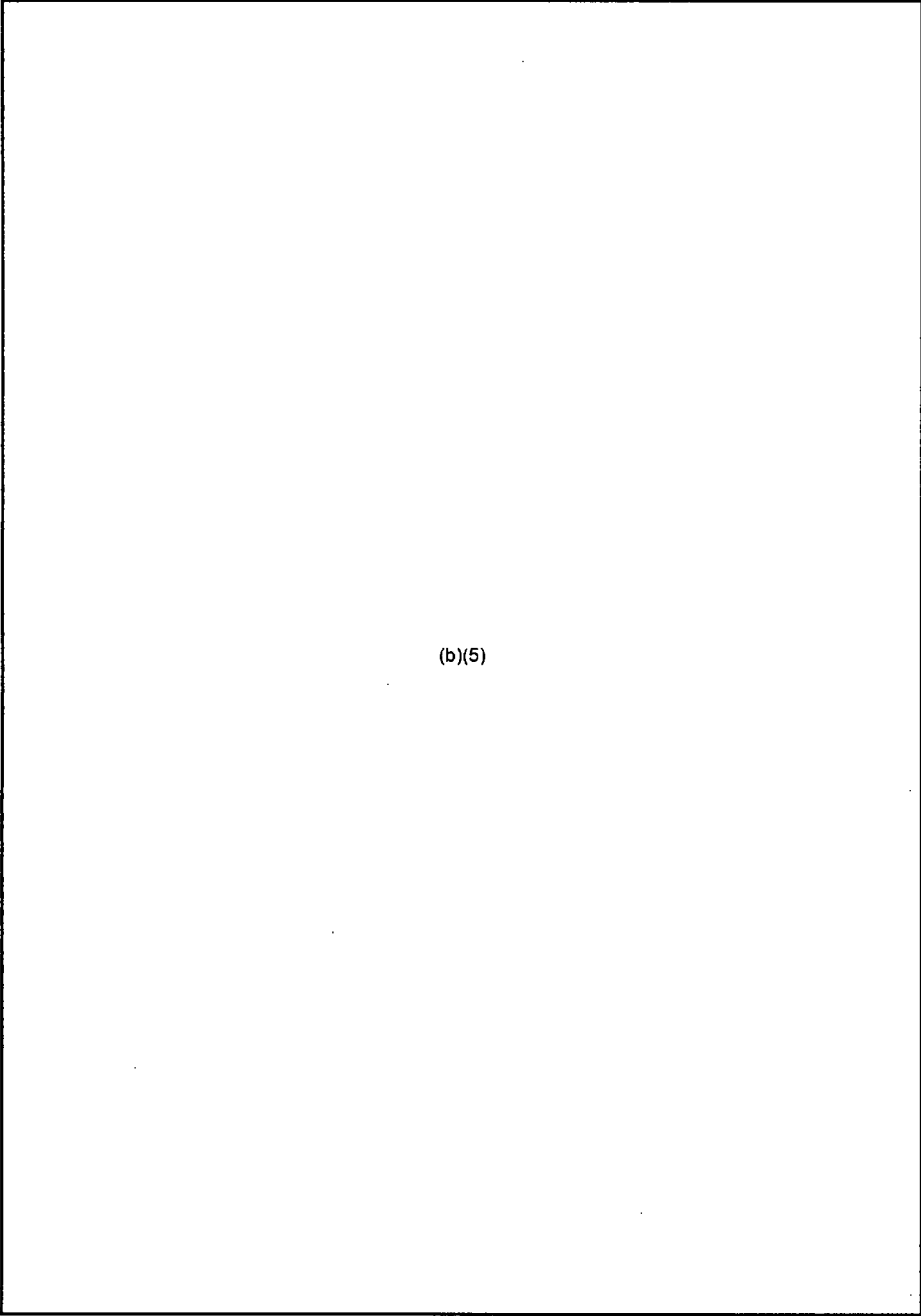
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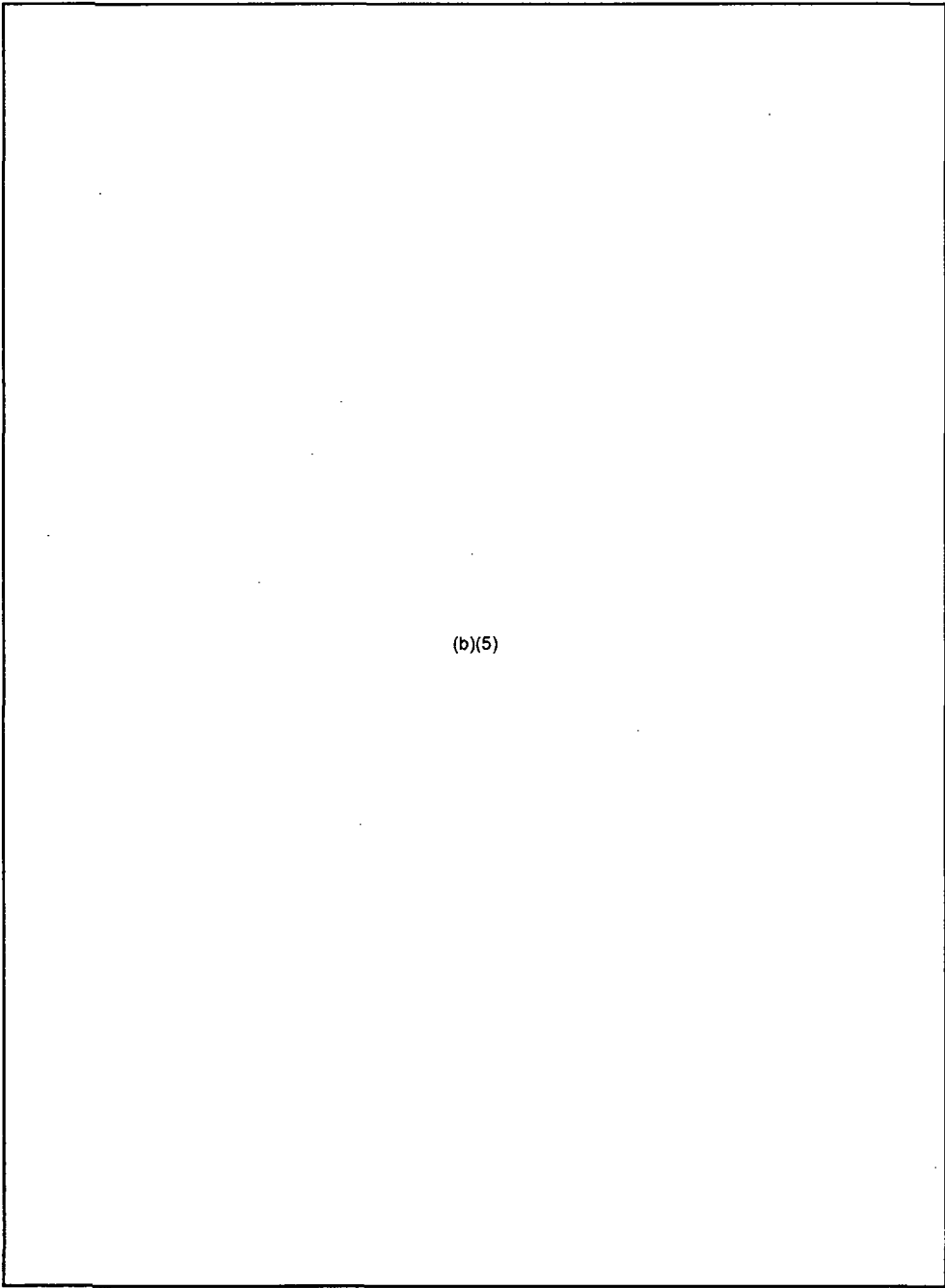


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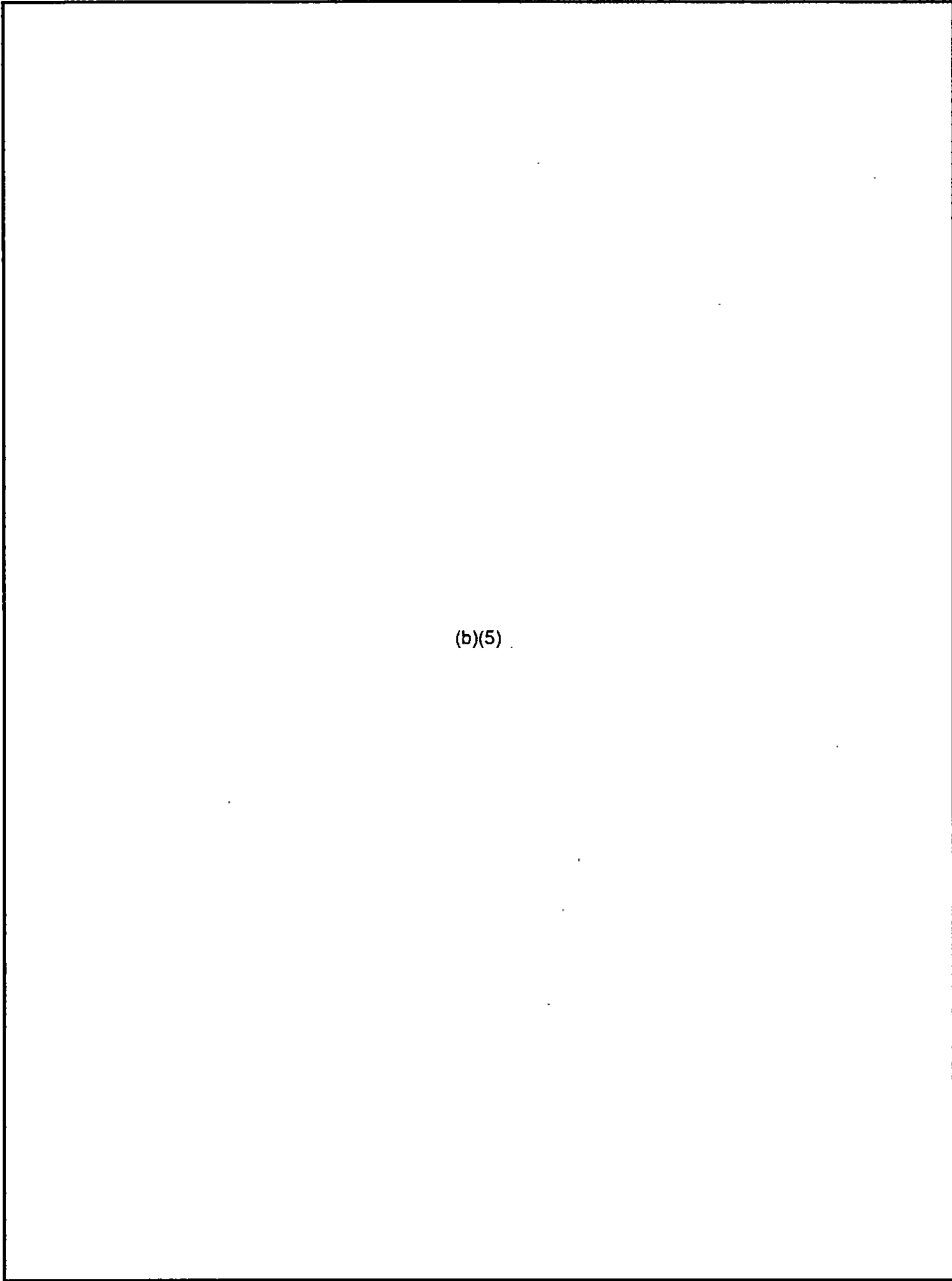
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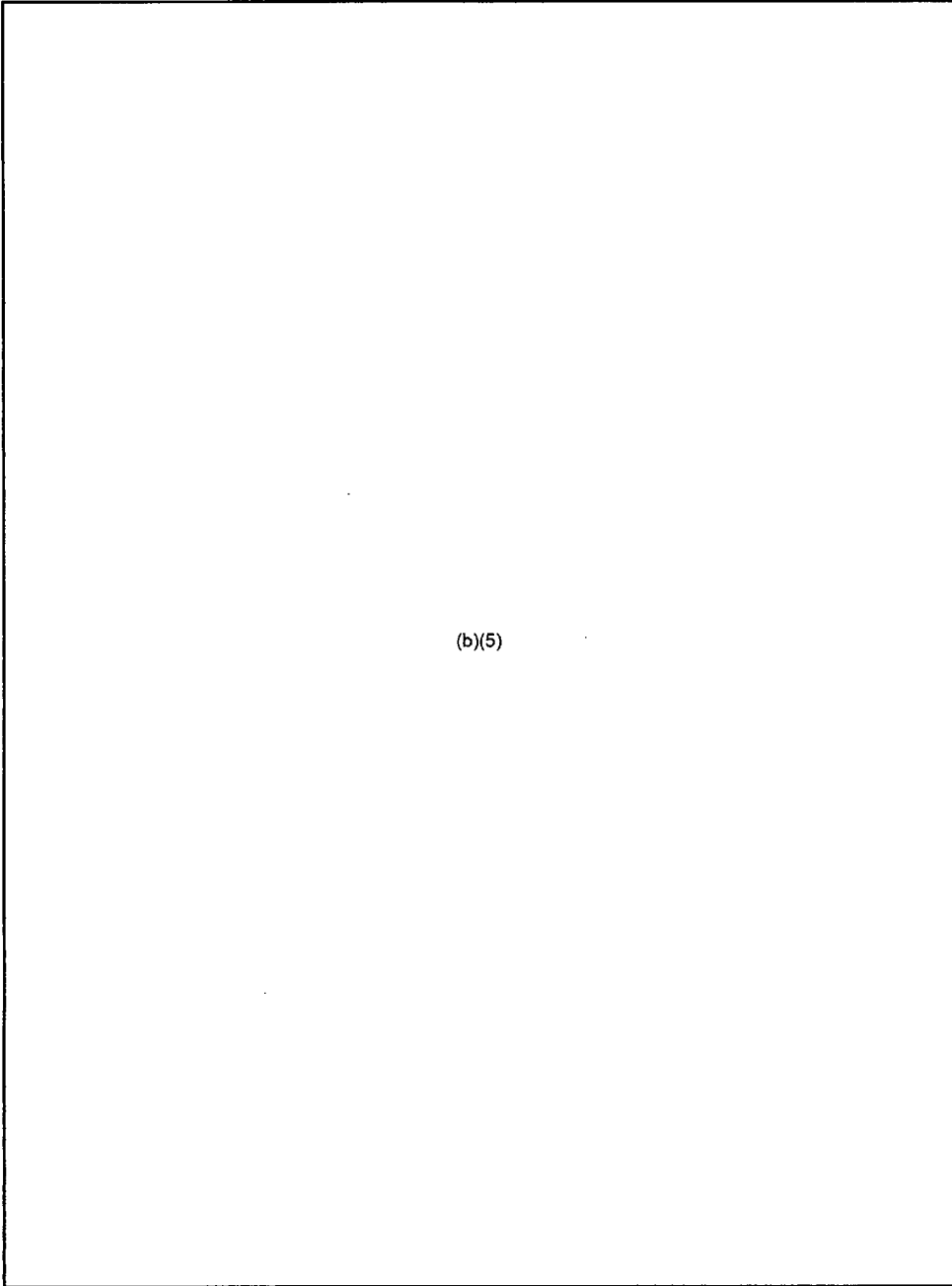
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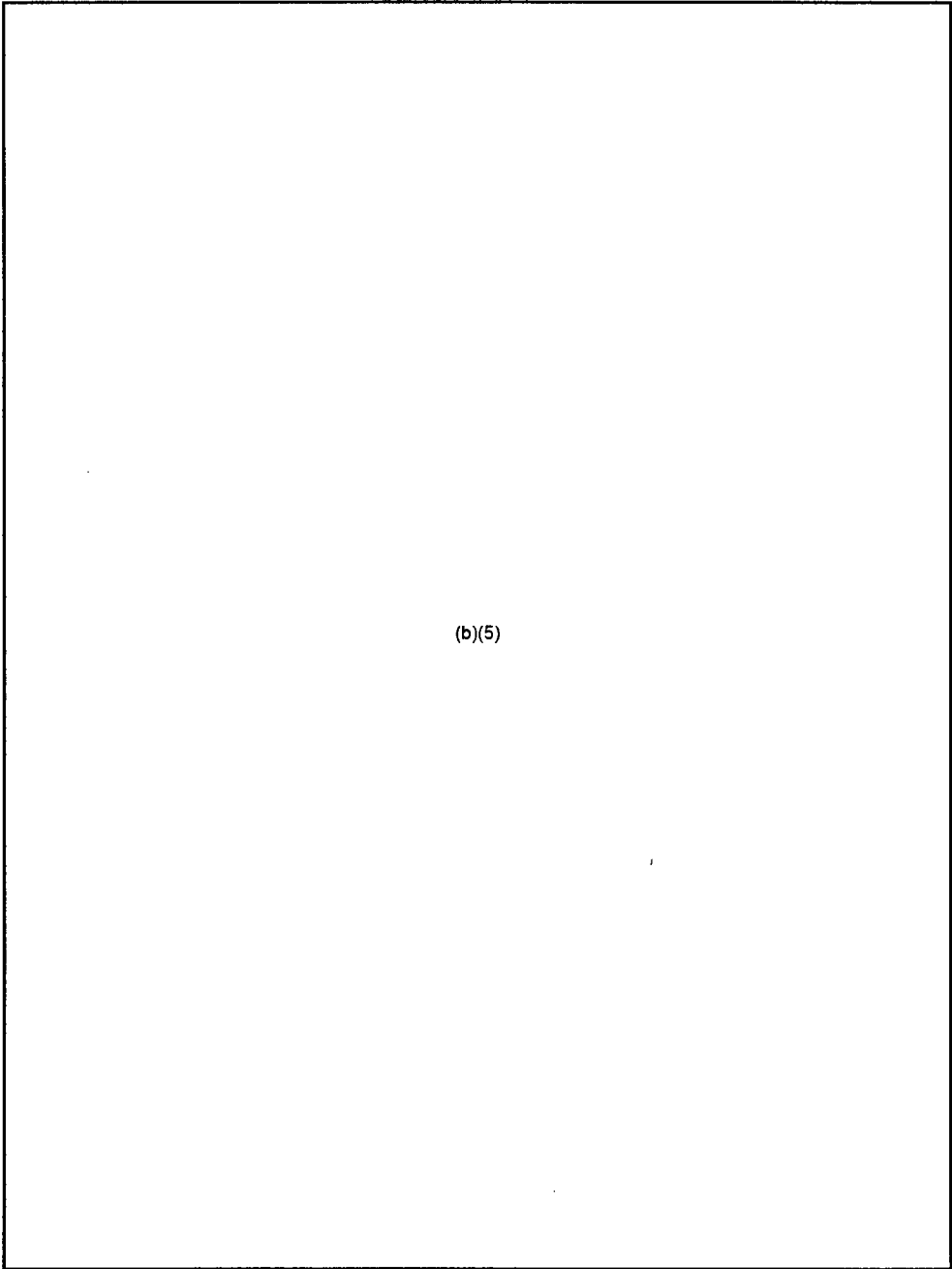
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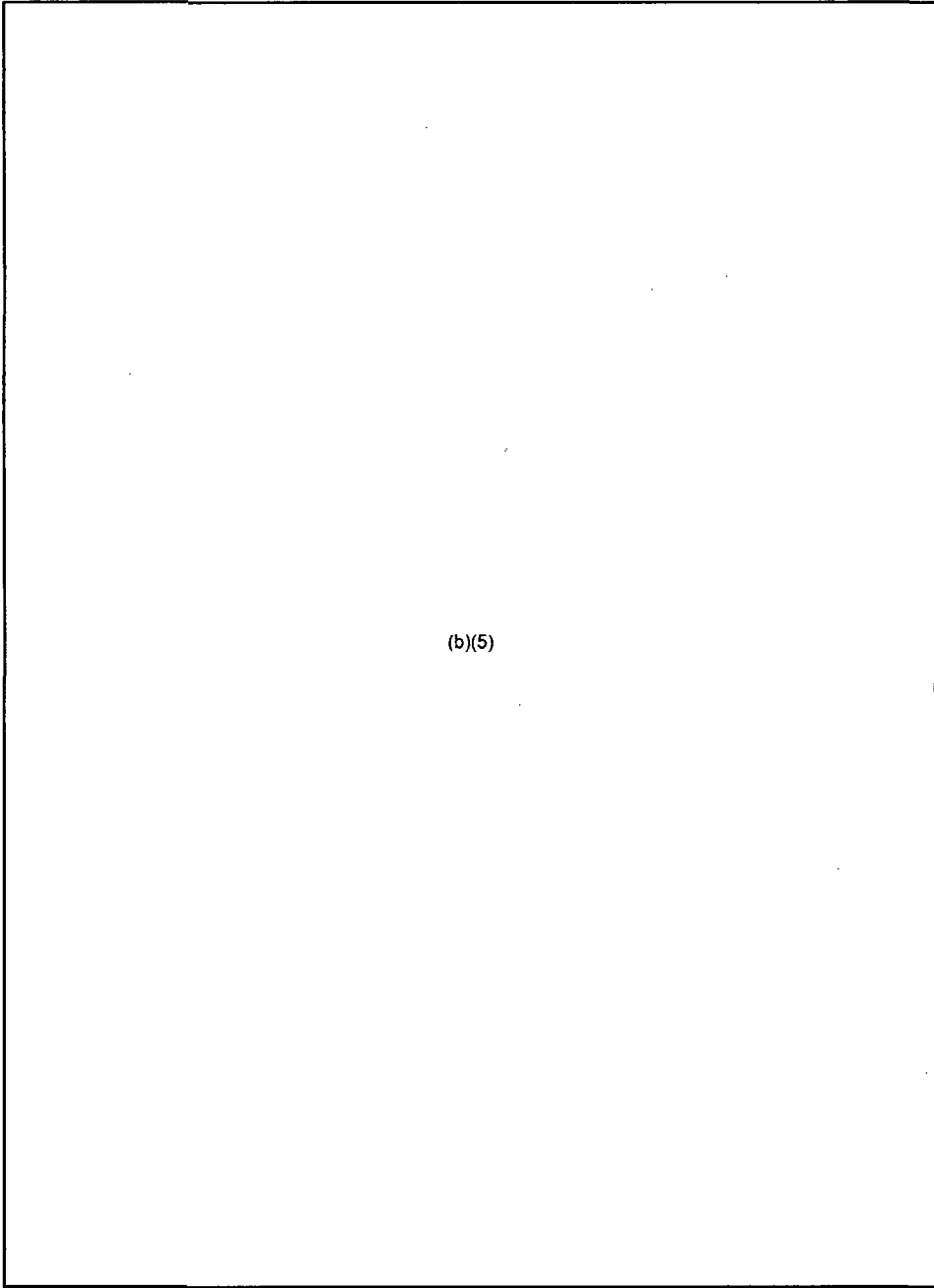


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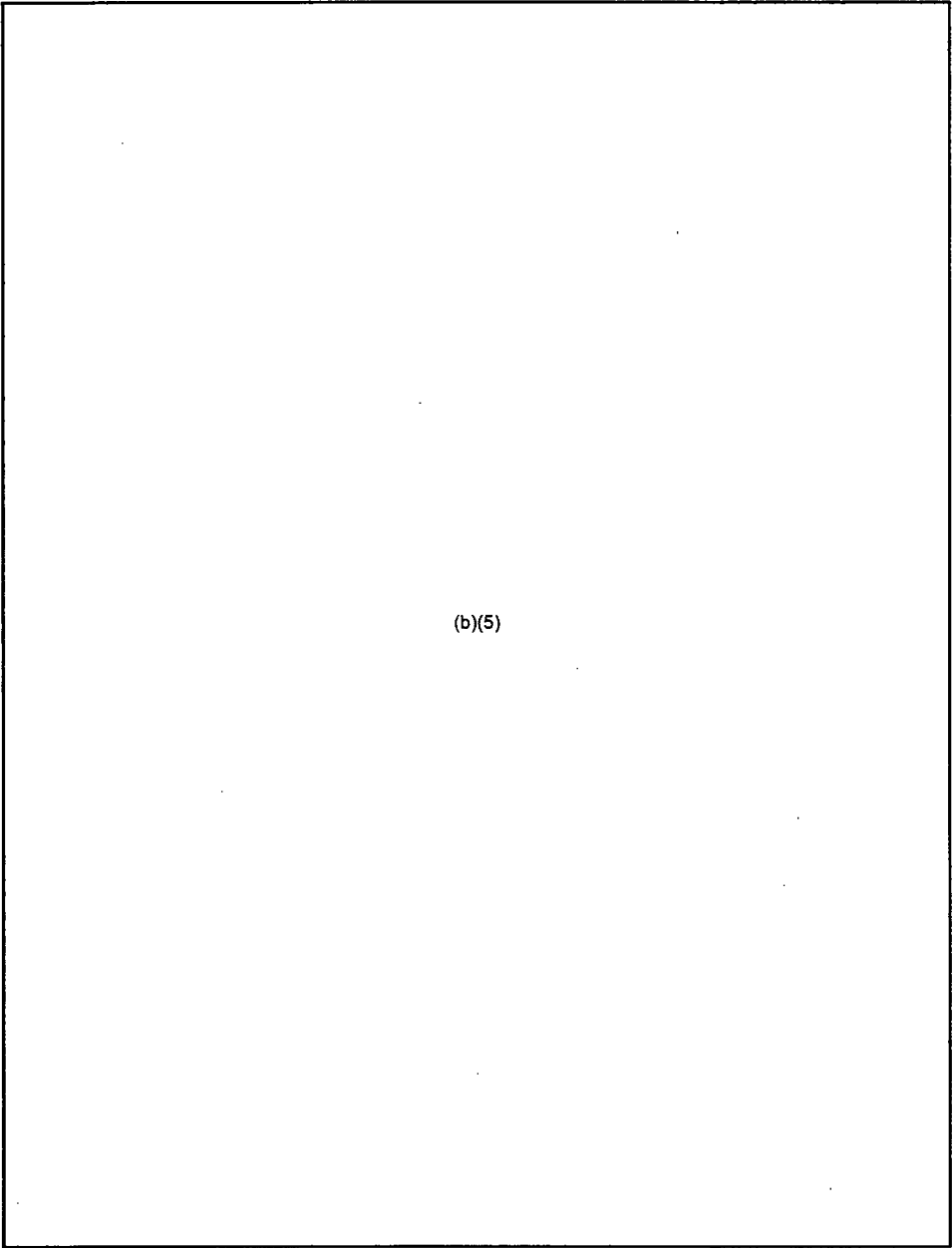
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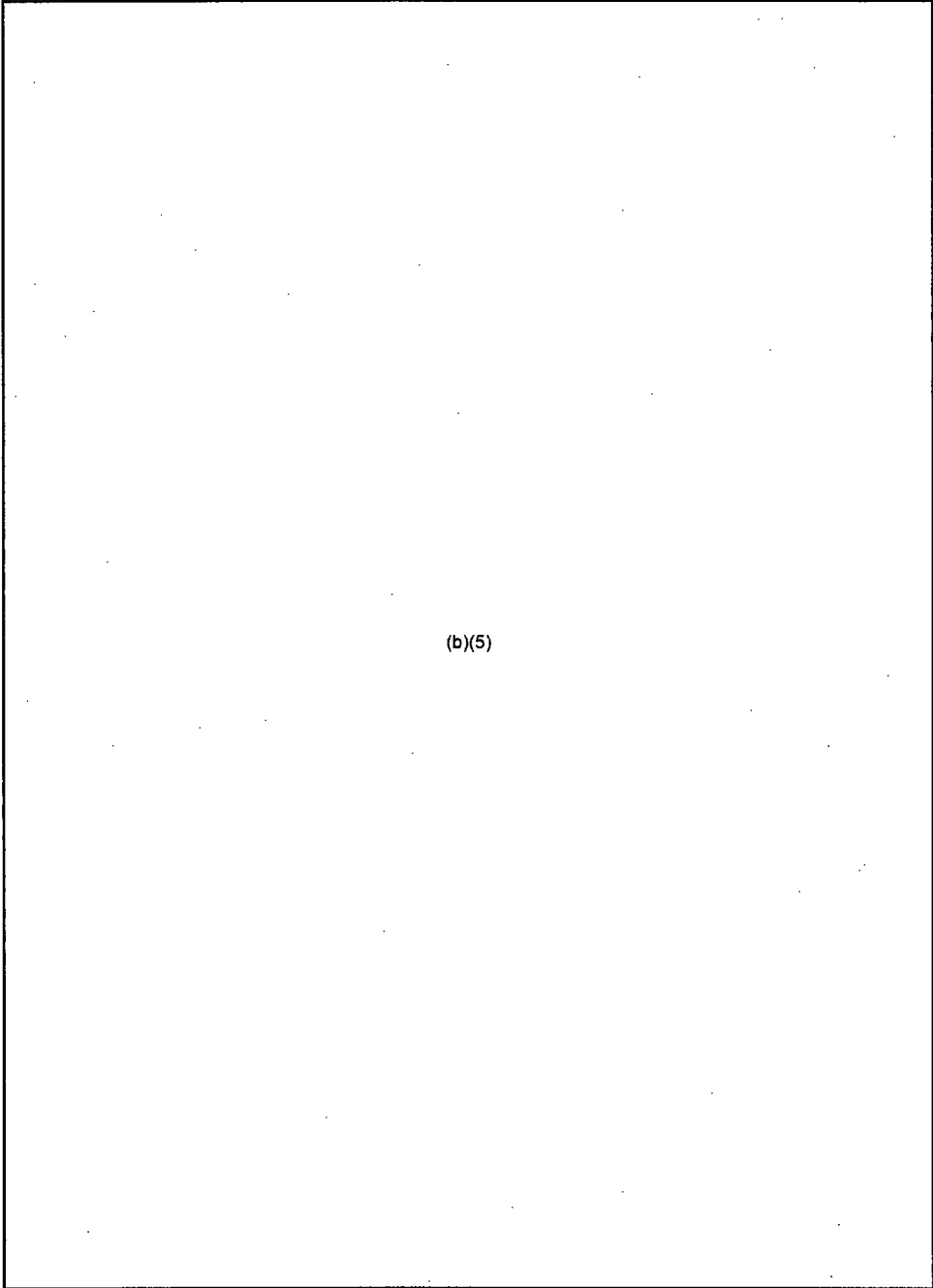


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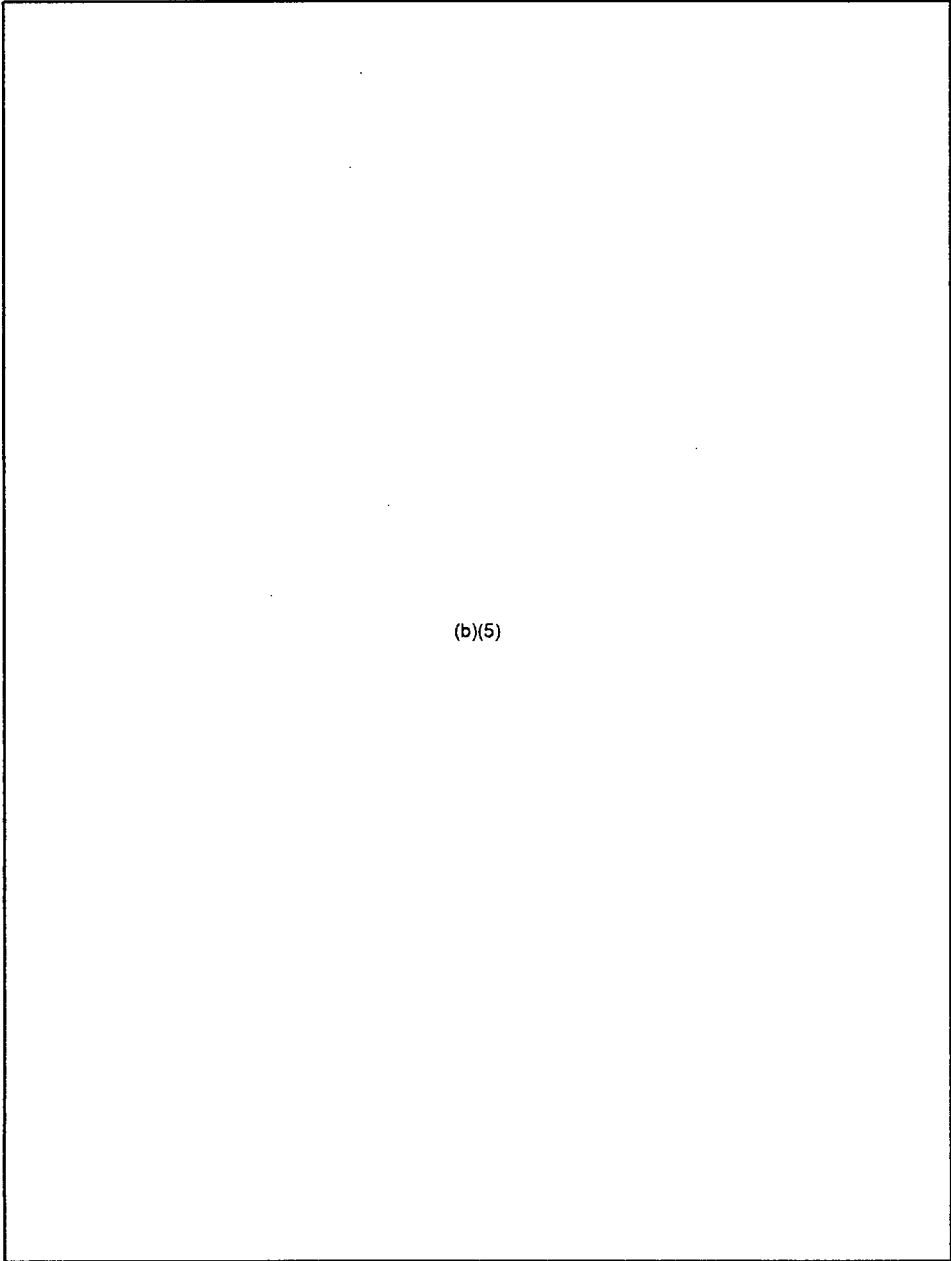
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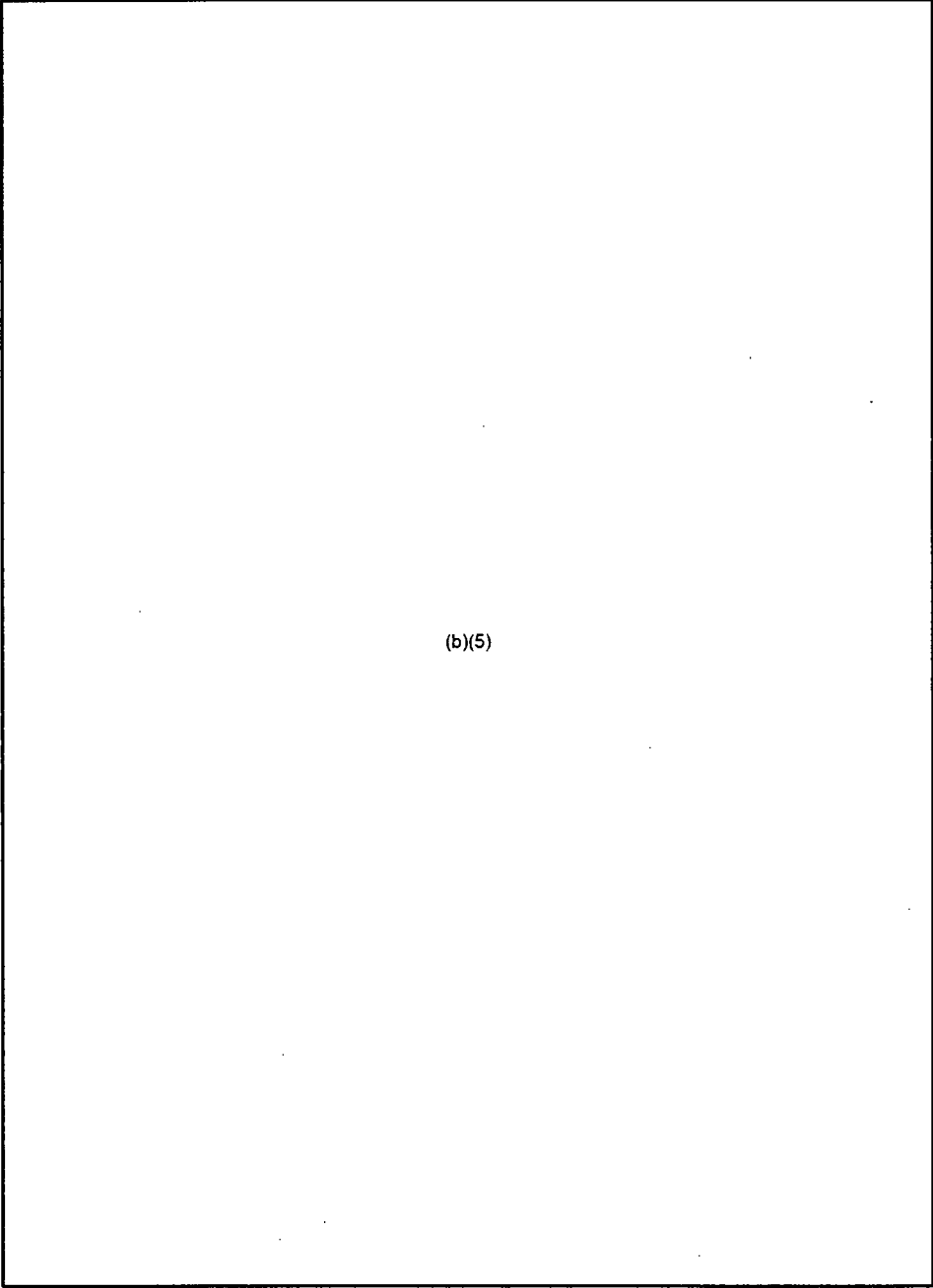
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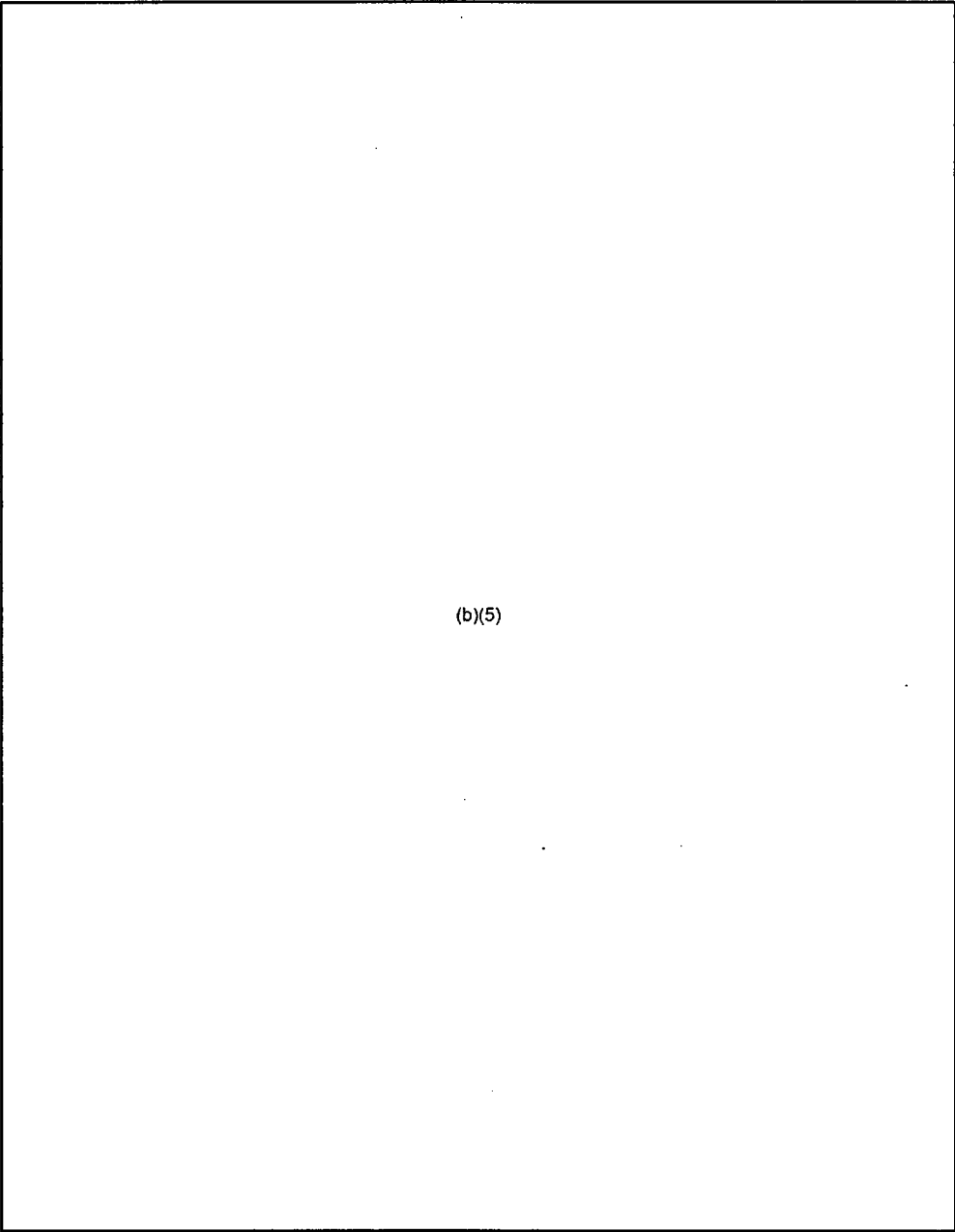
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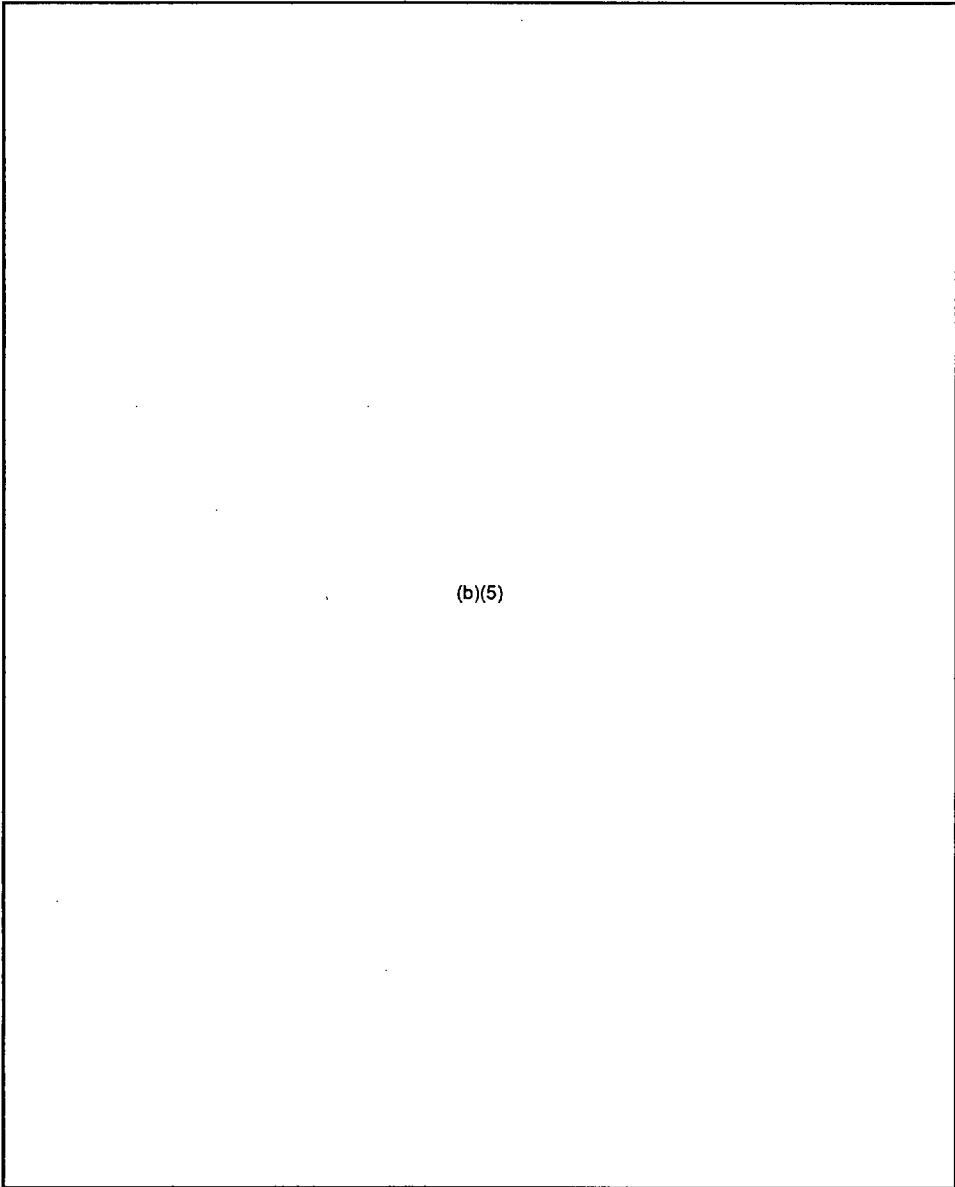
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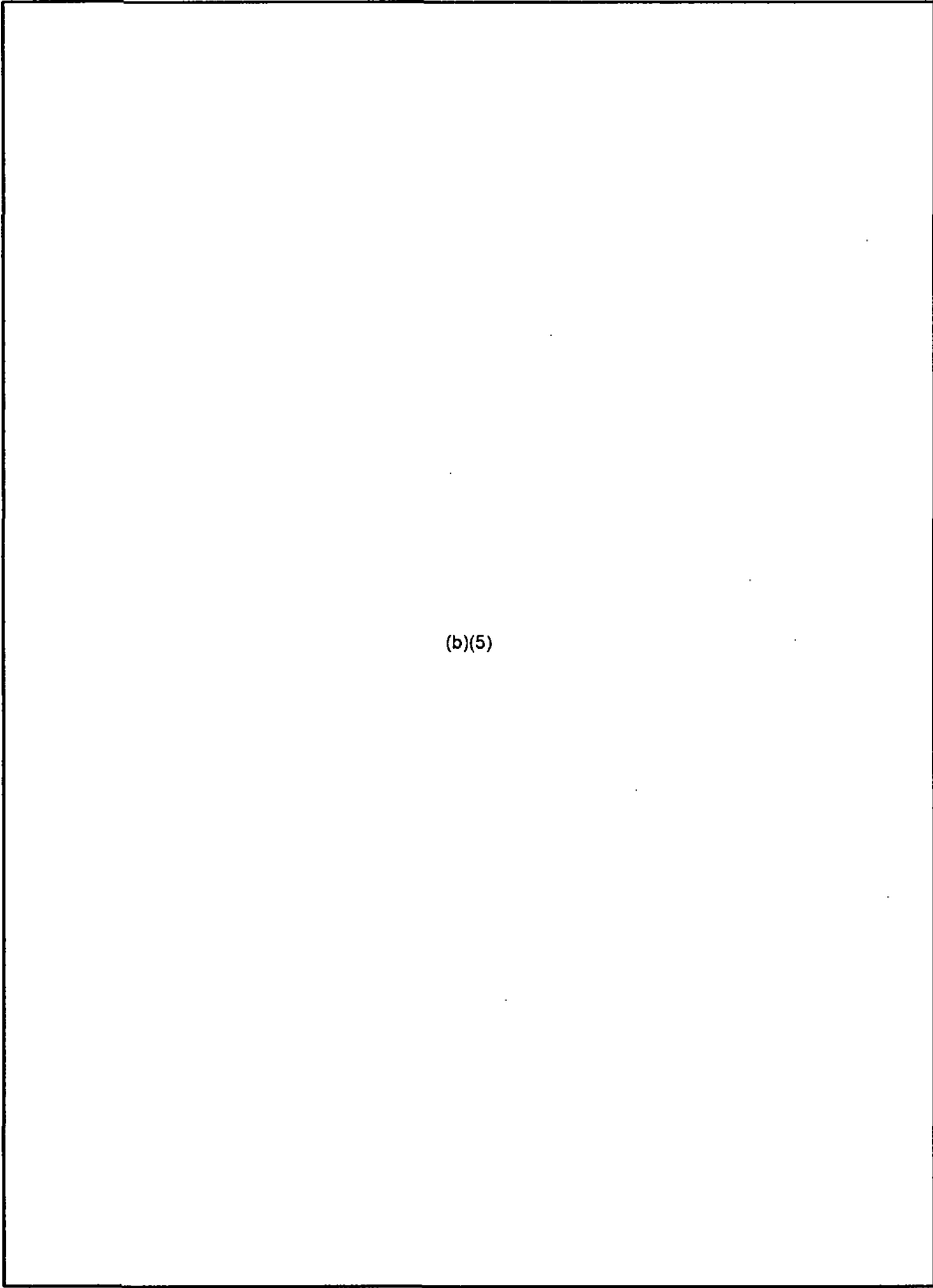
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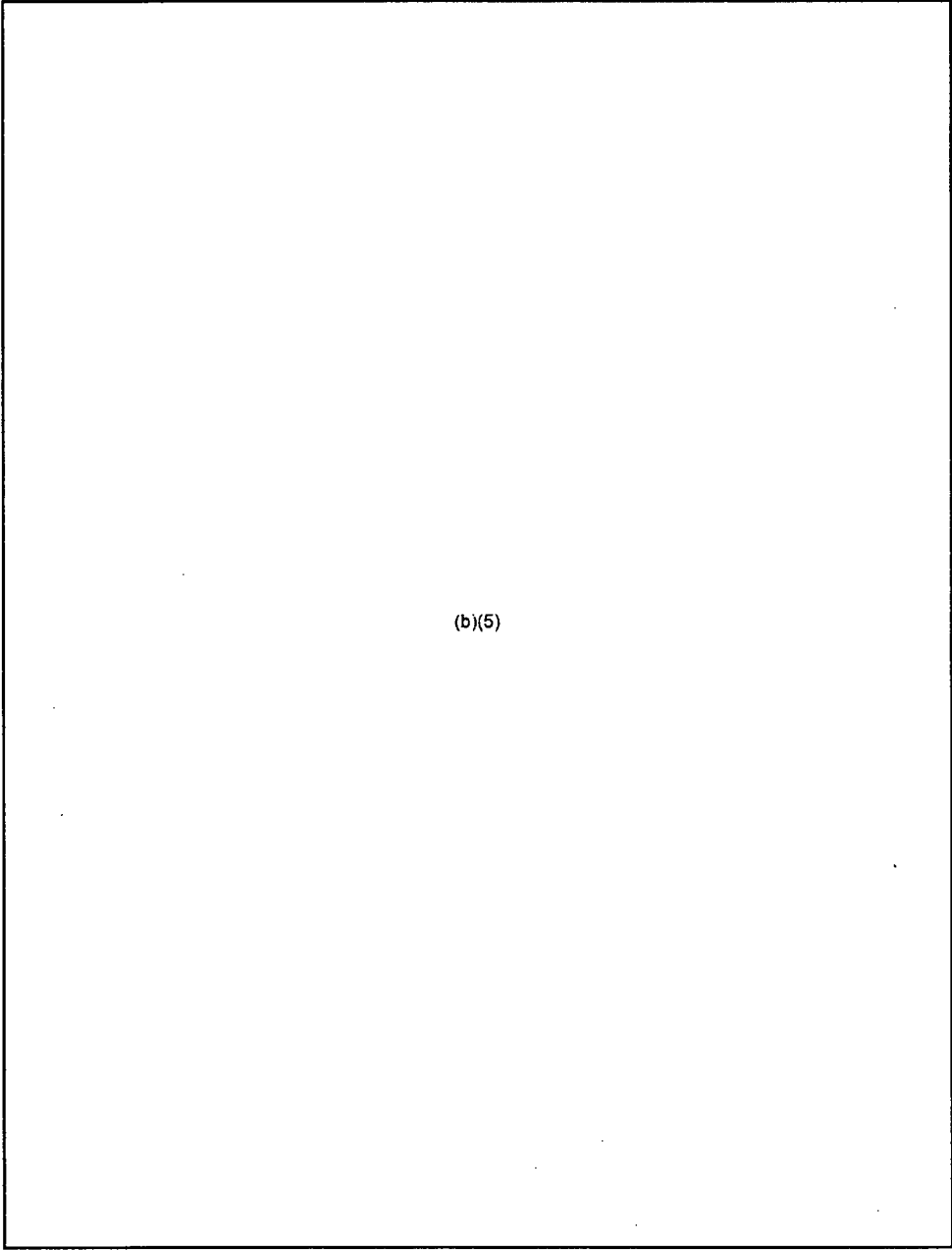
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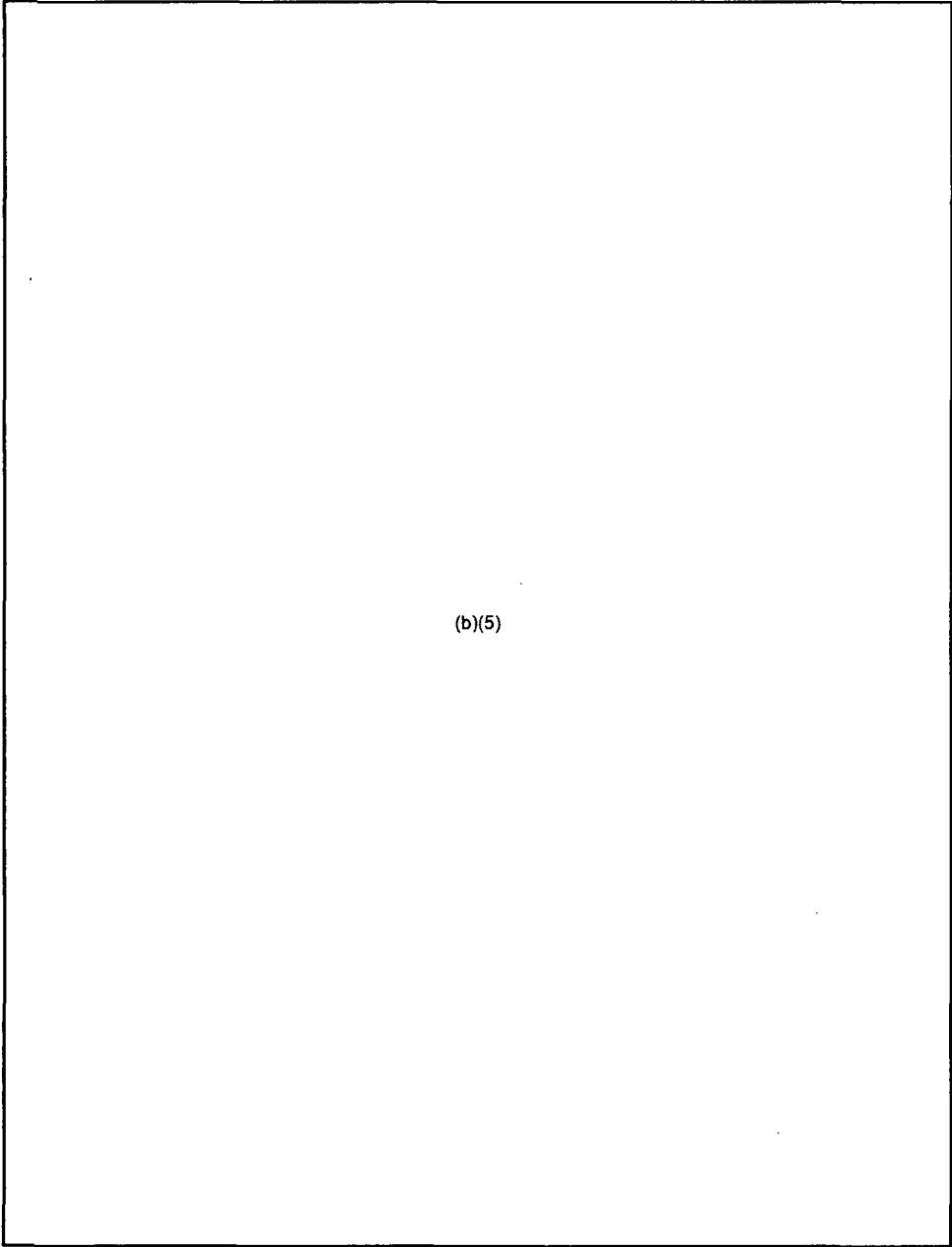
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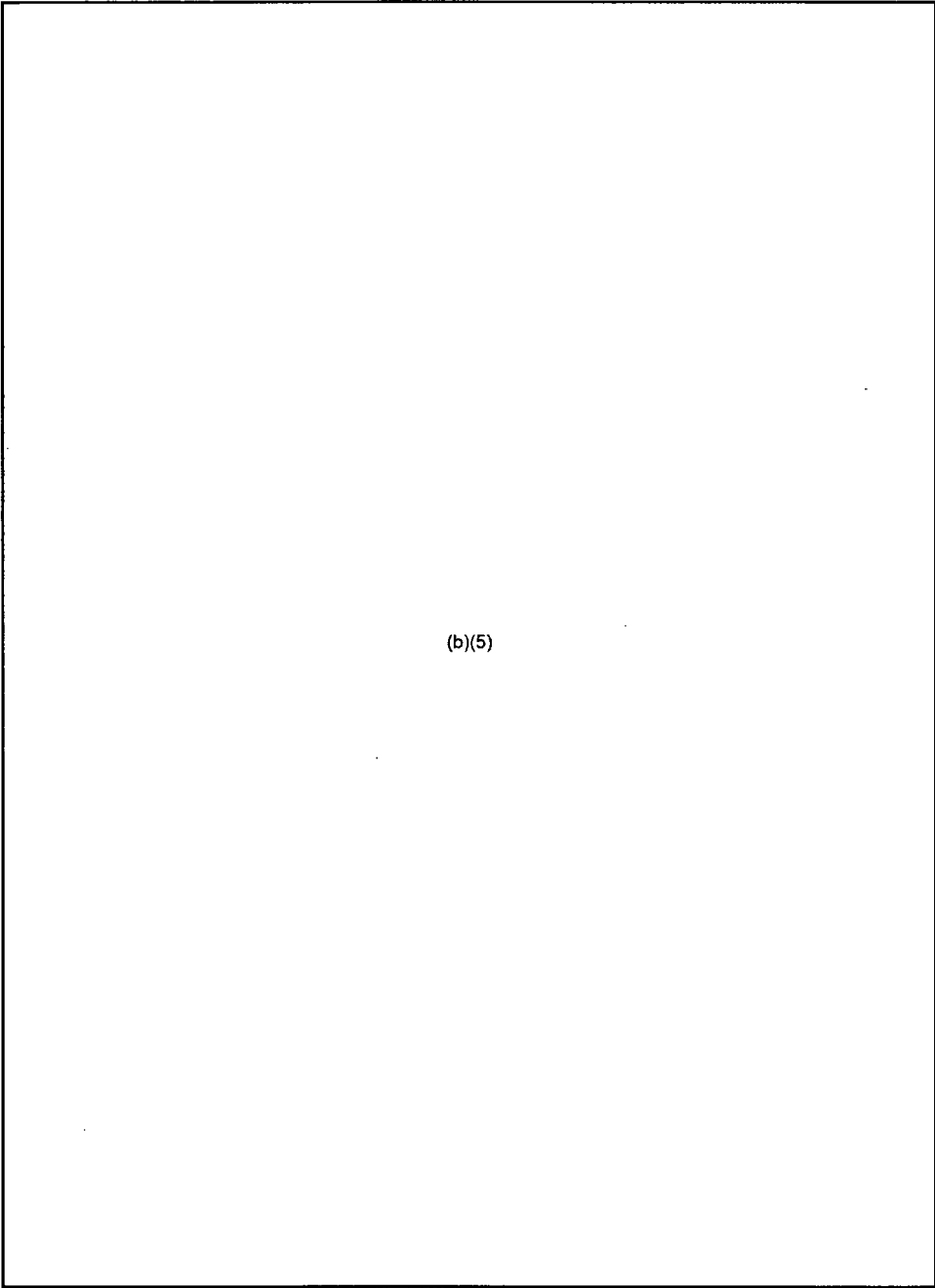


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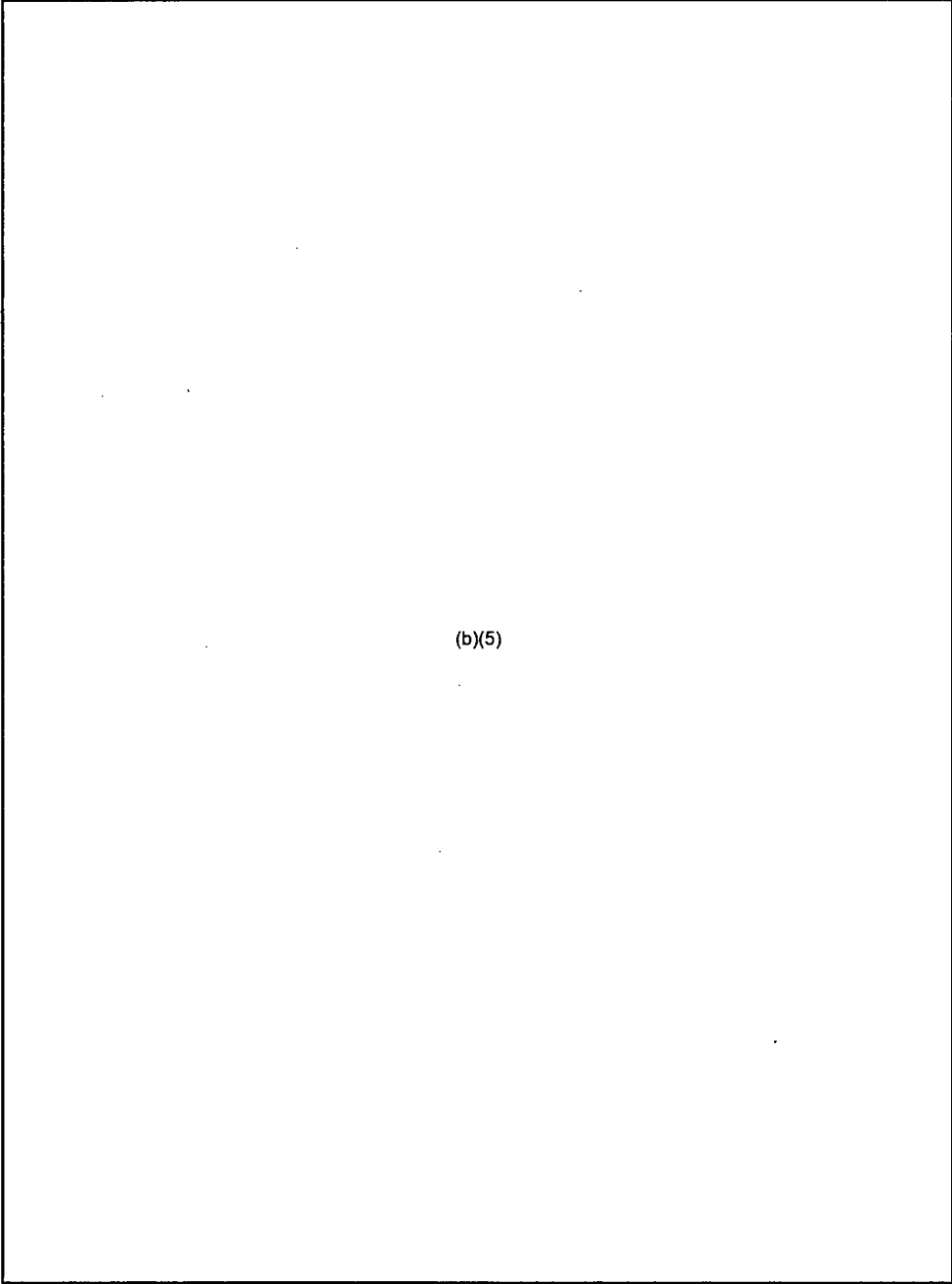


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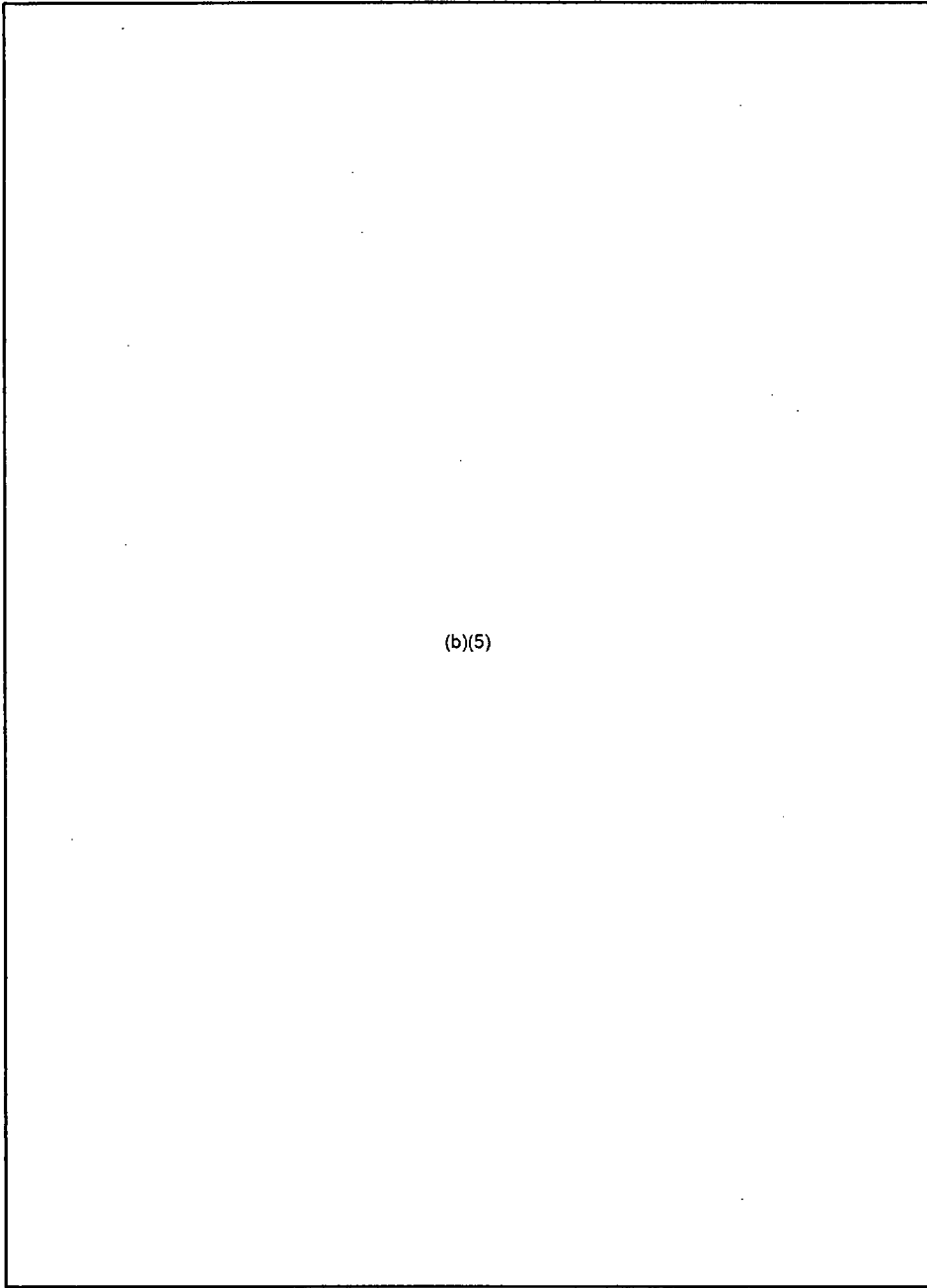
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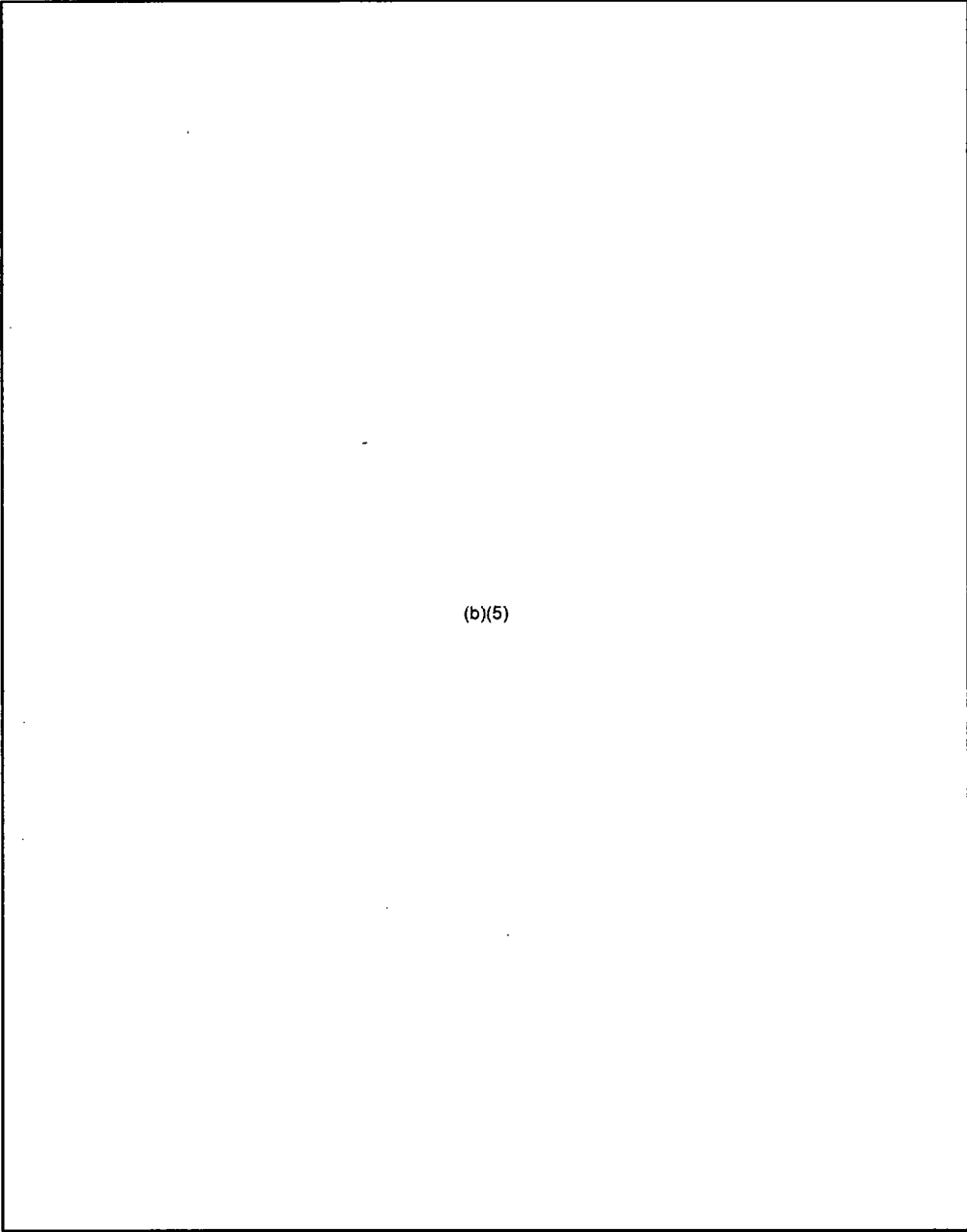
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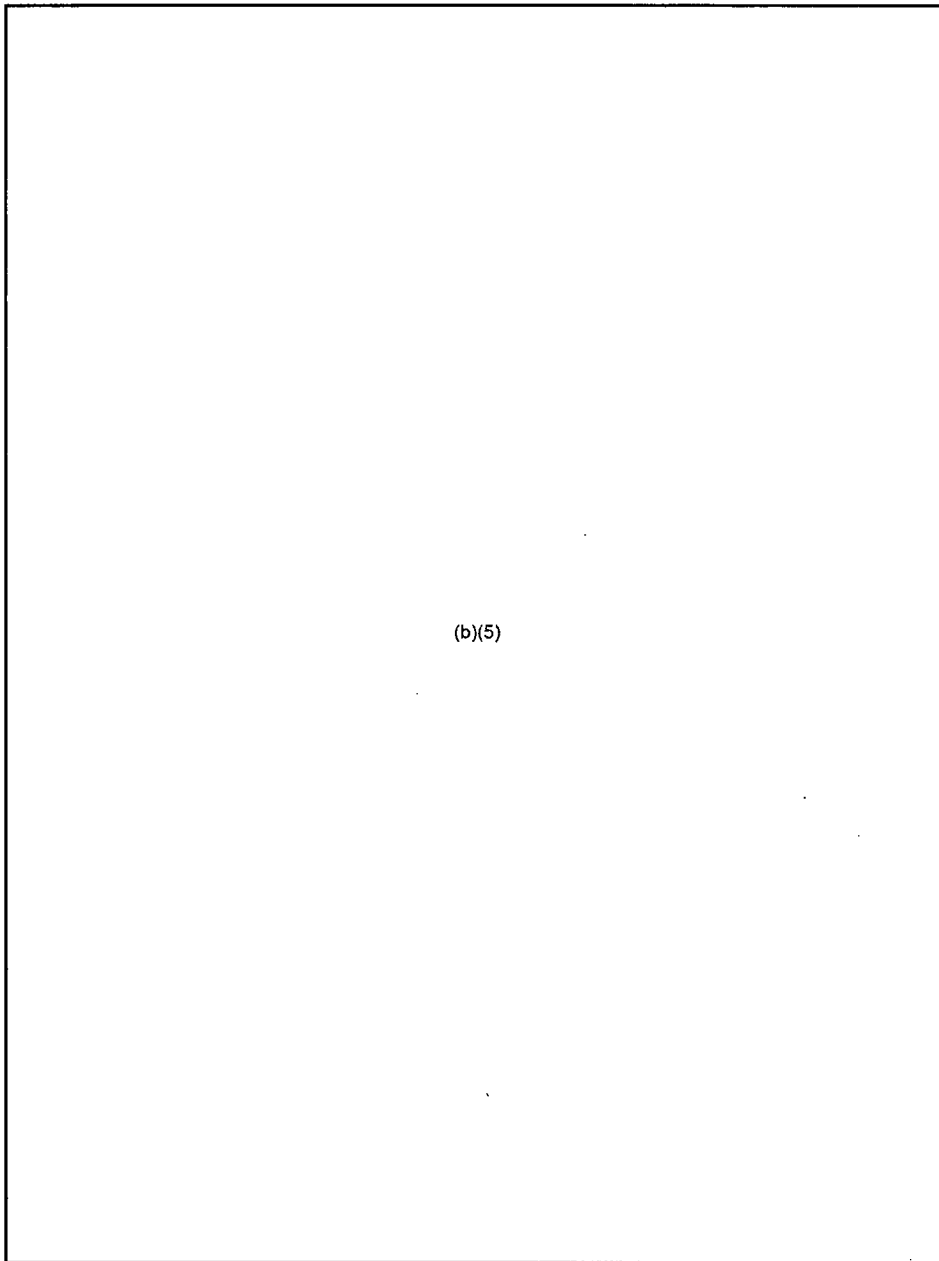
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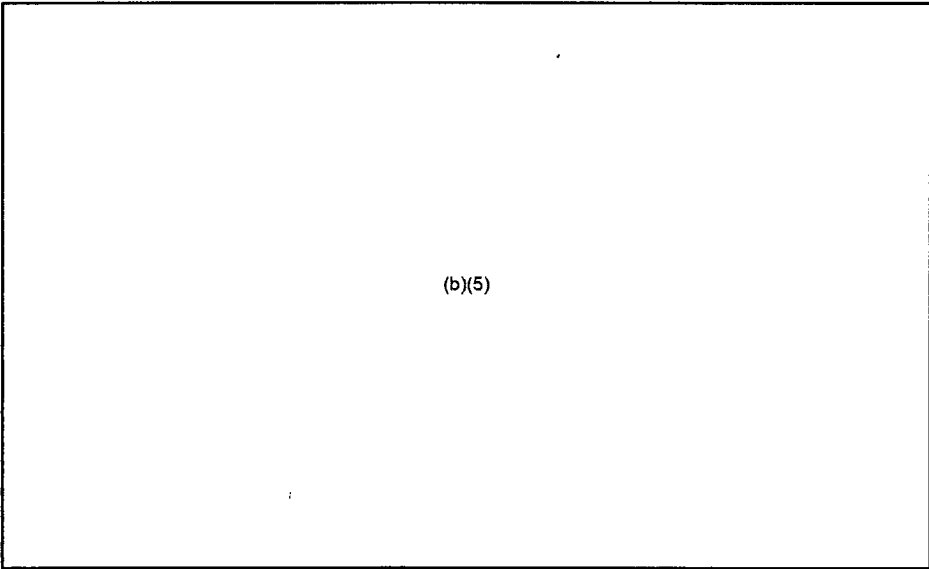
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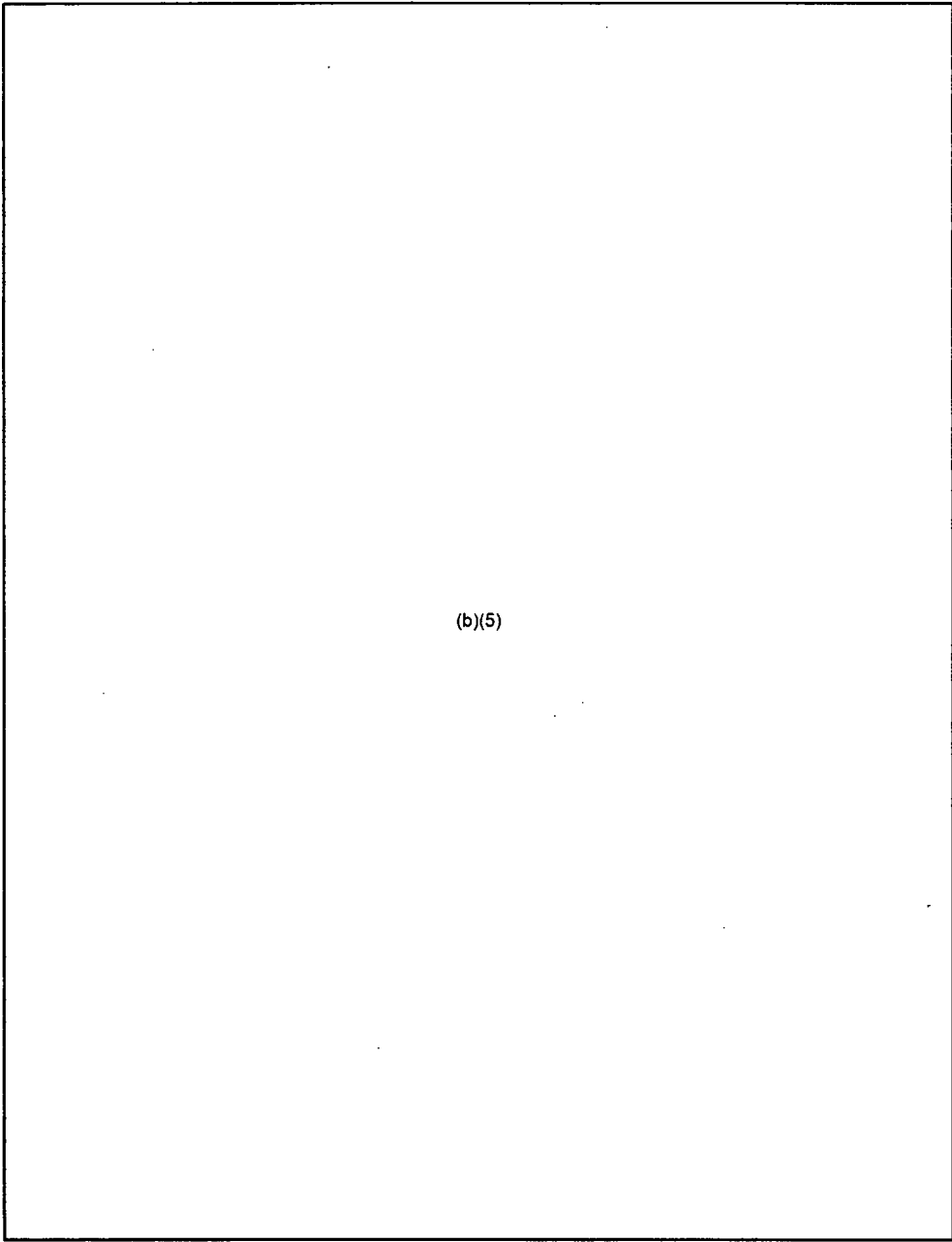
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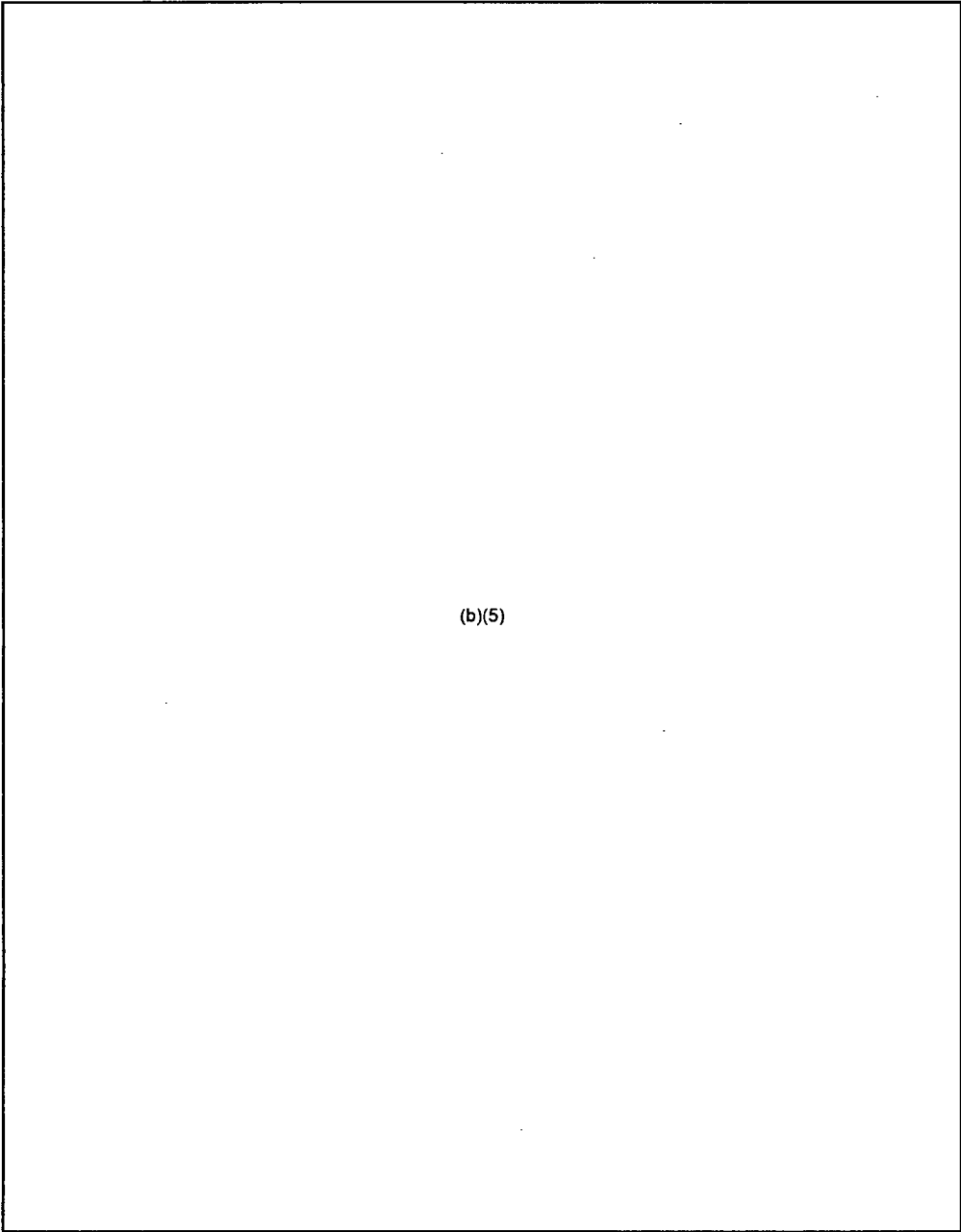


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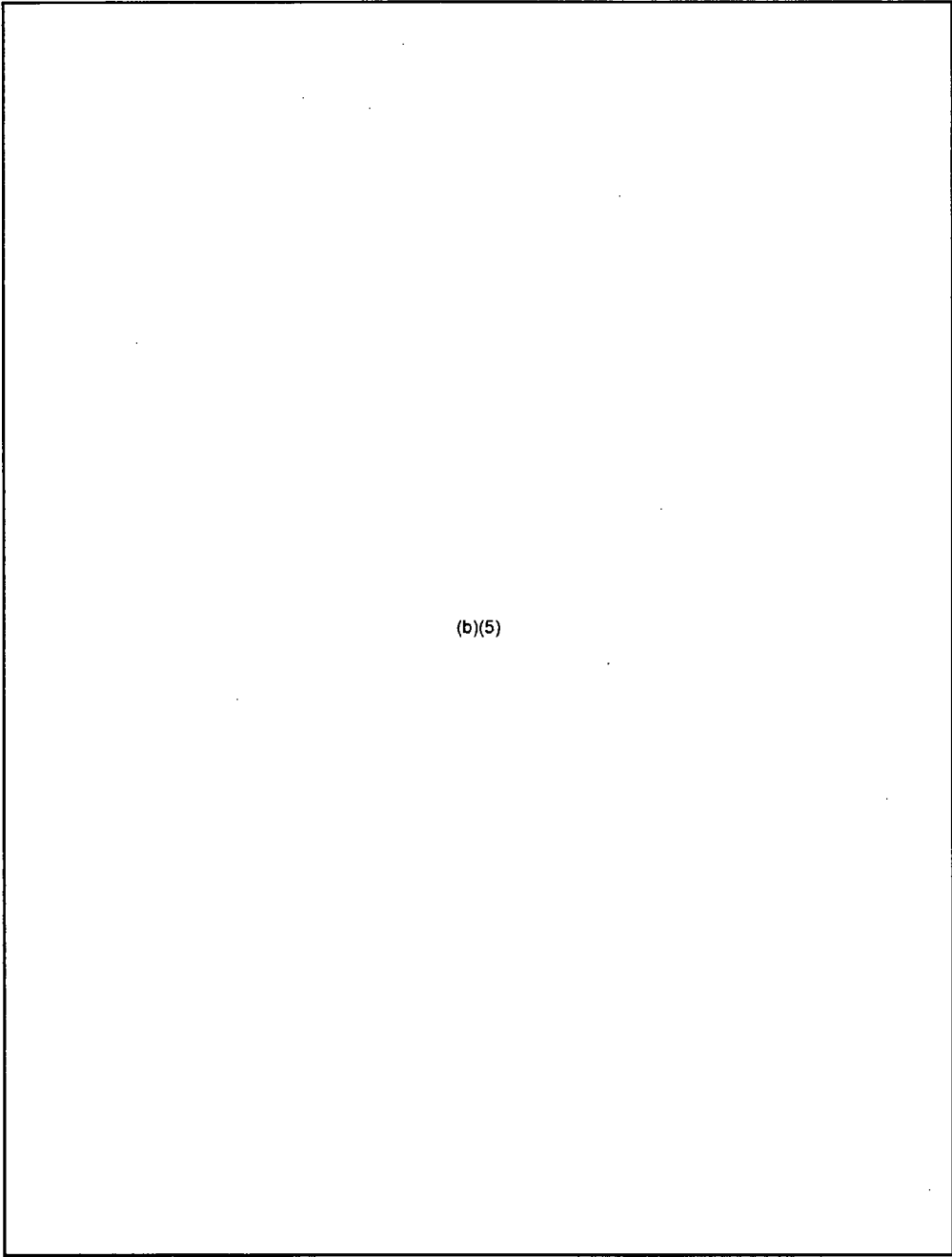
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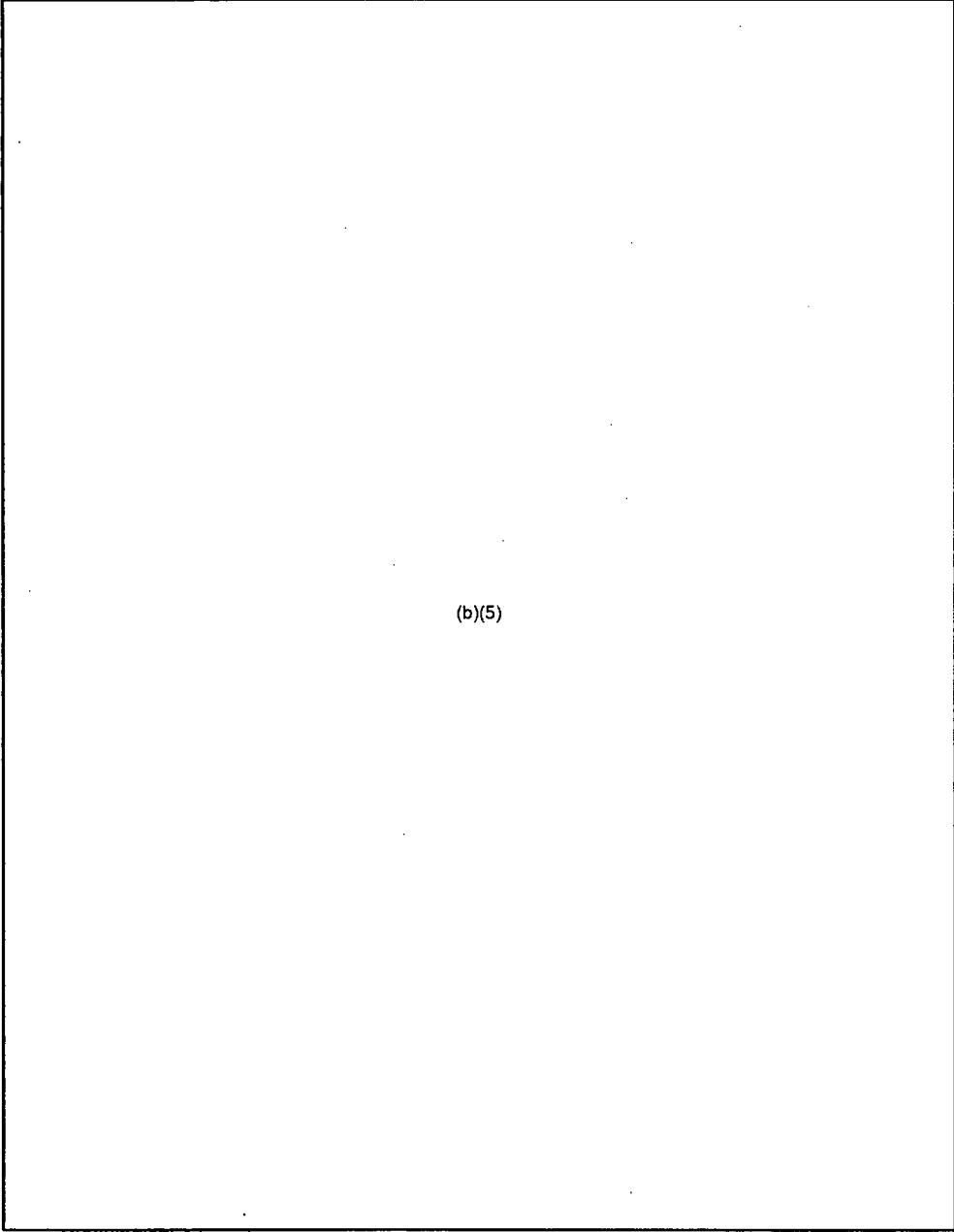
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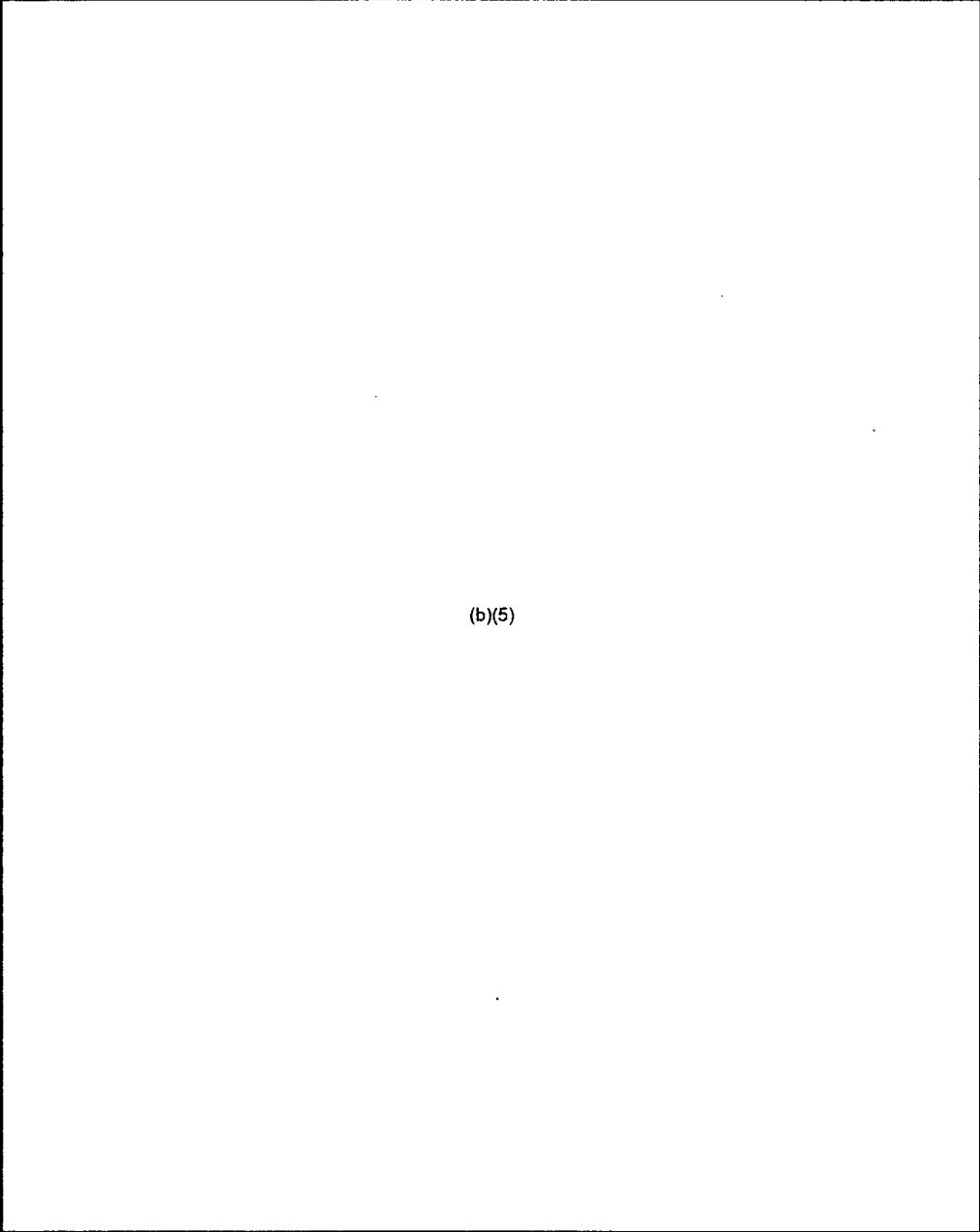
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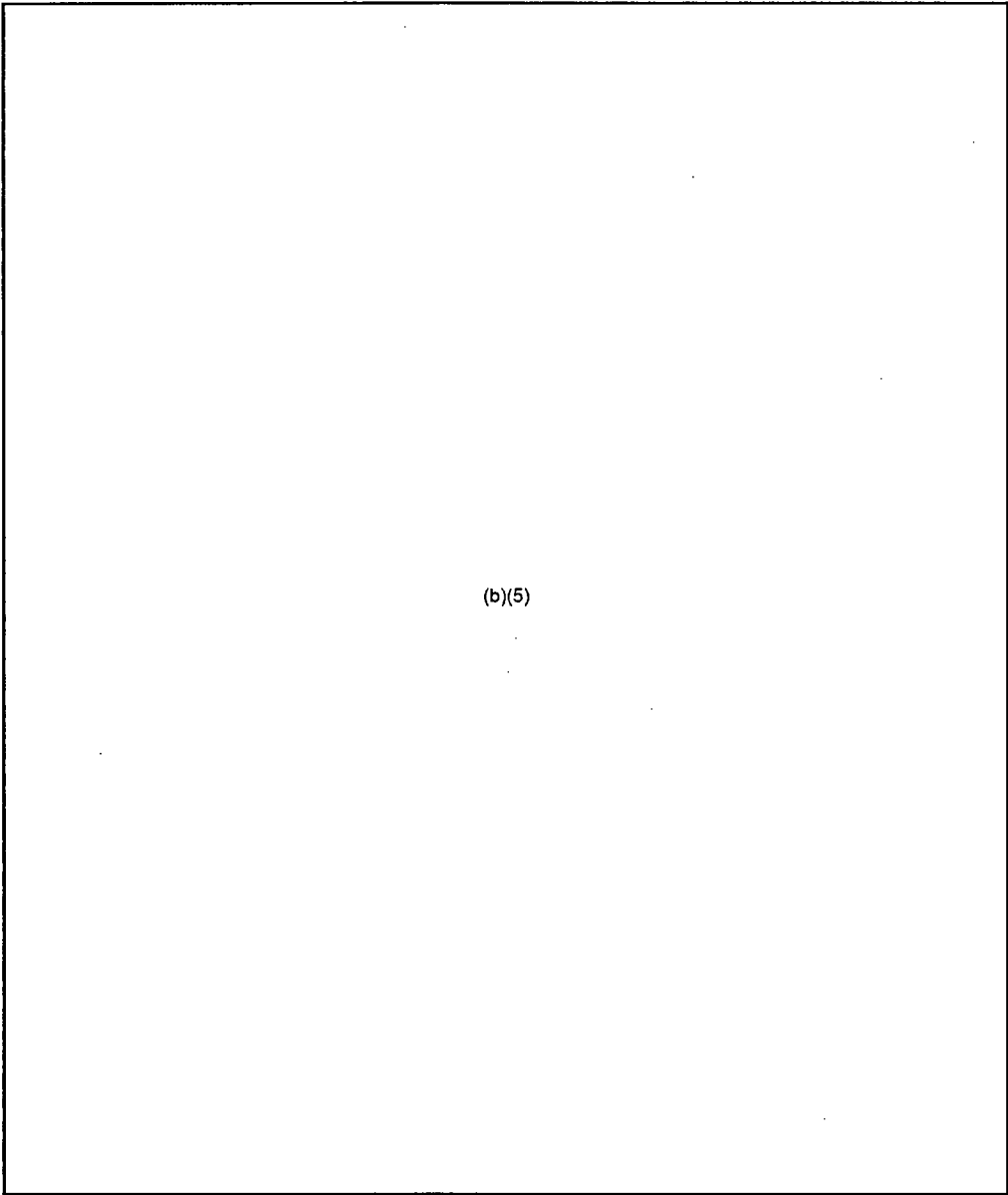
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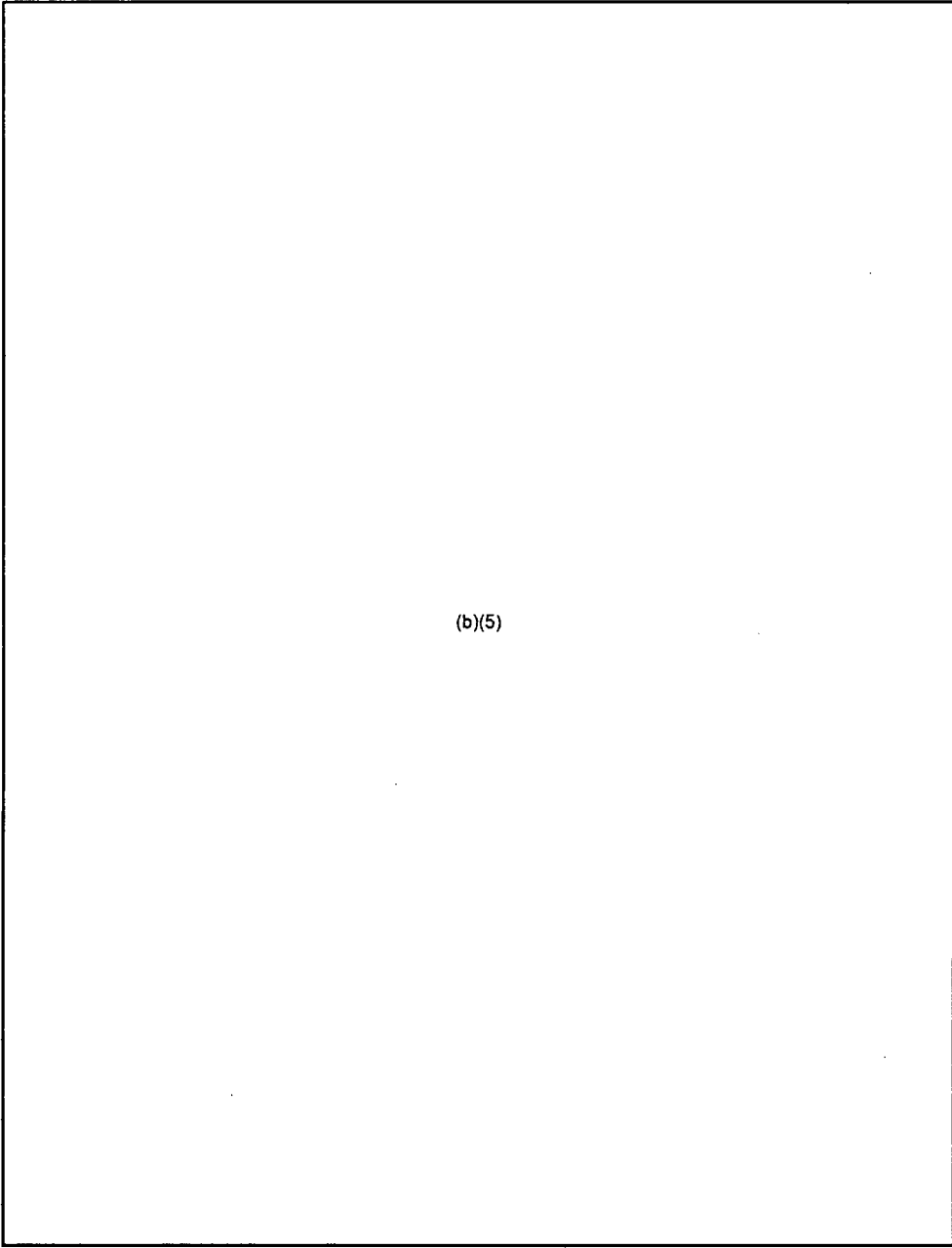
6-106

DK 1150 of 1892

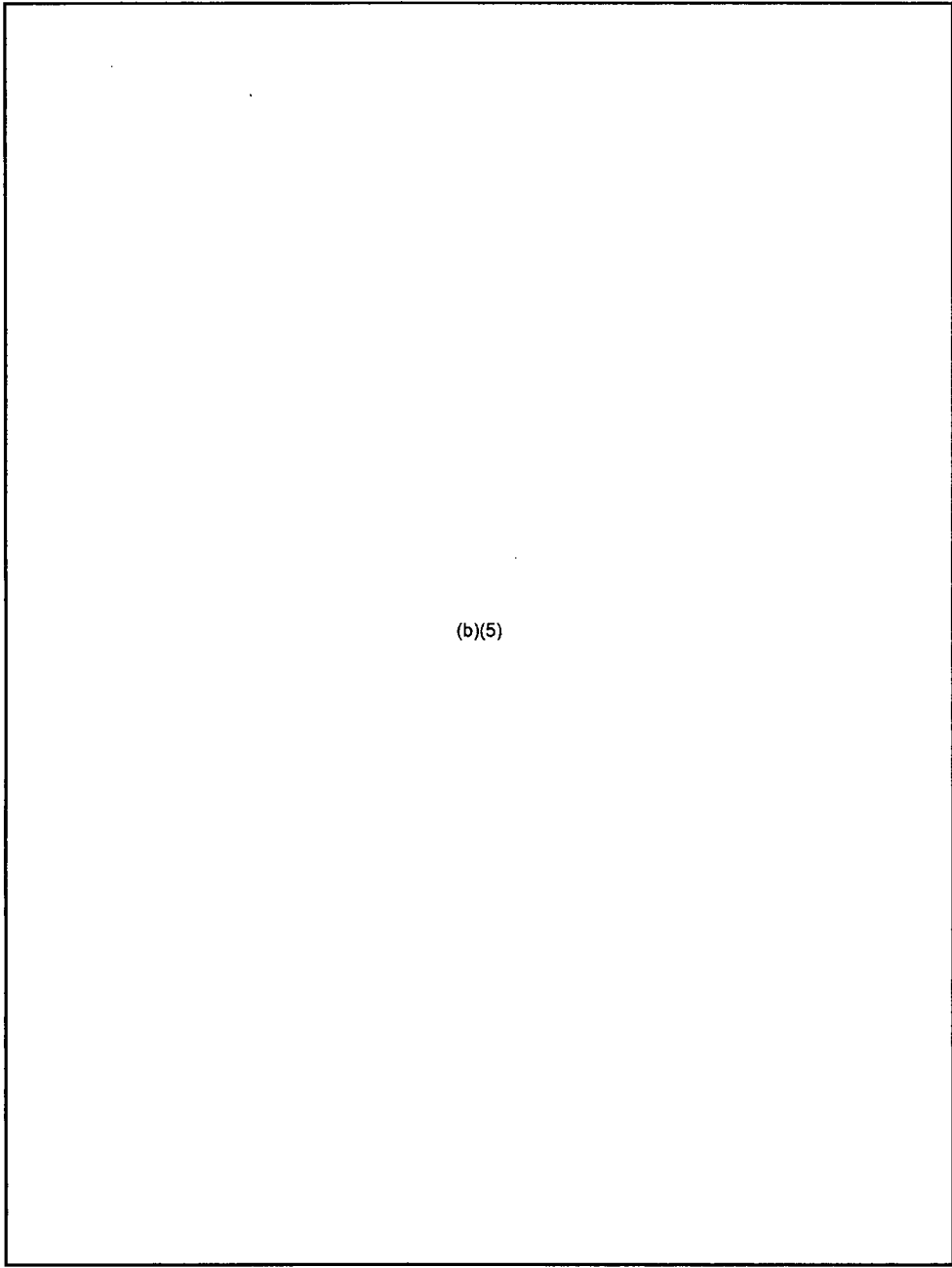


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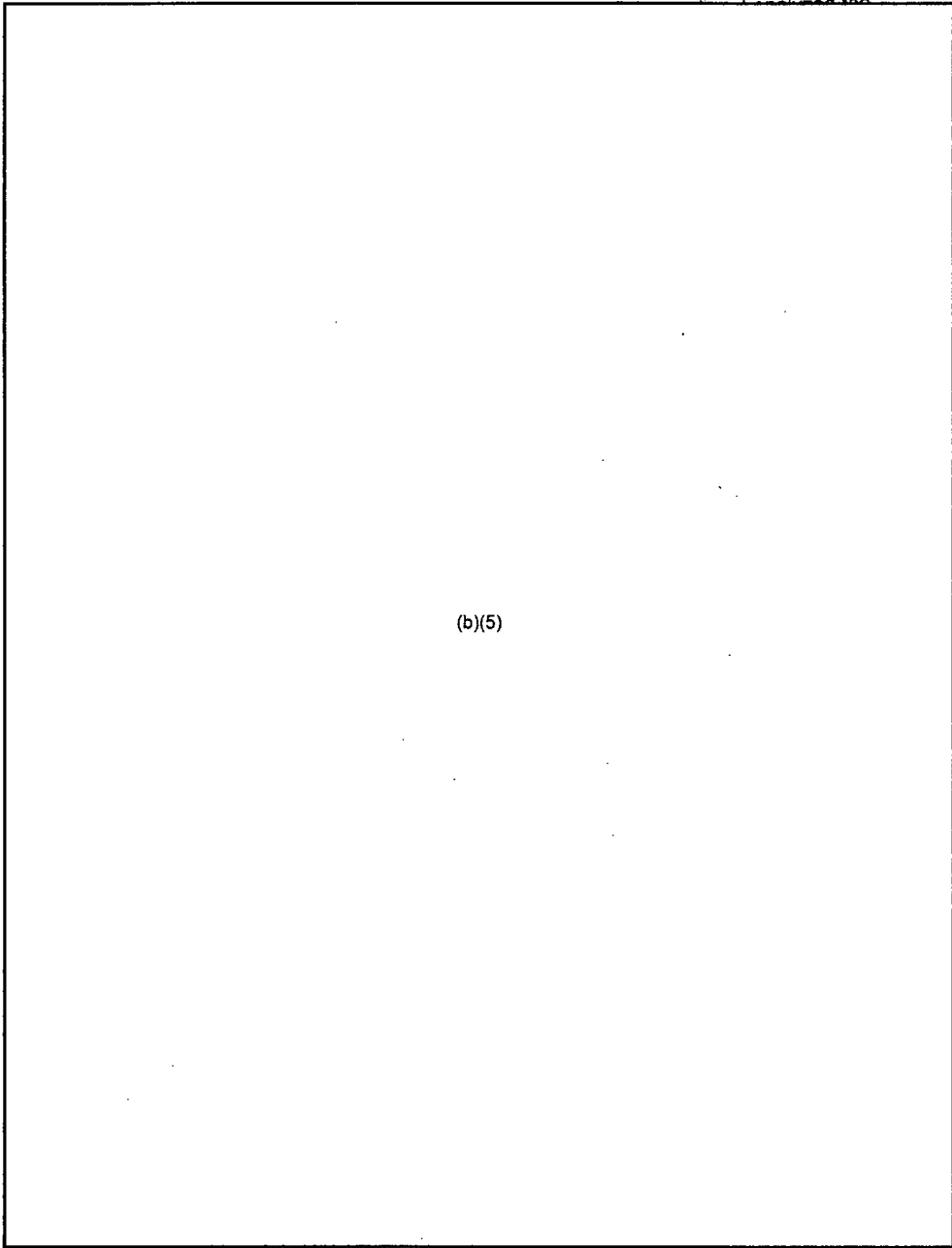


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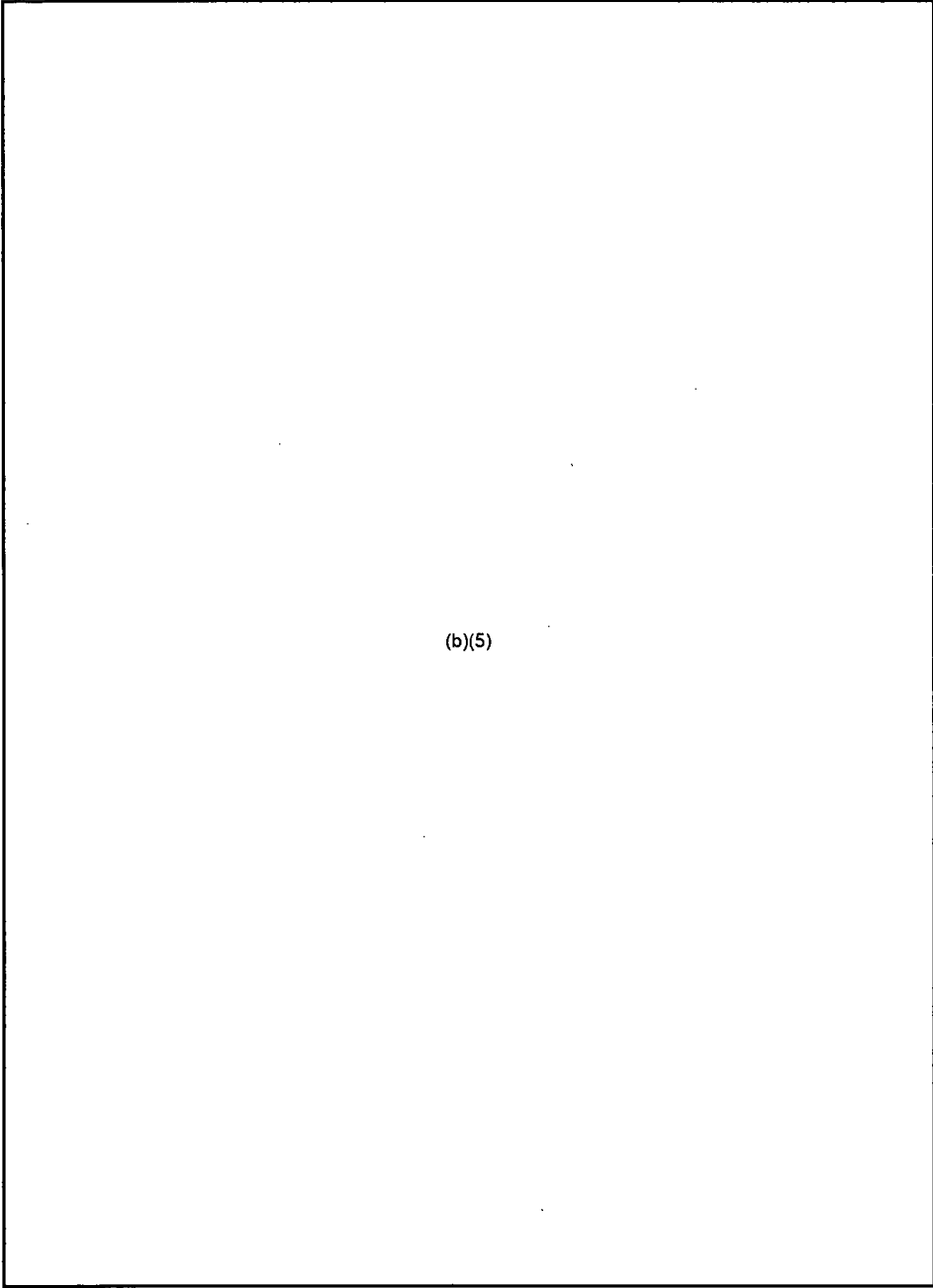


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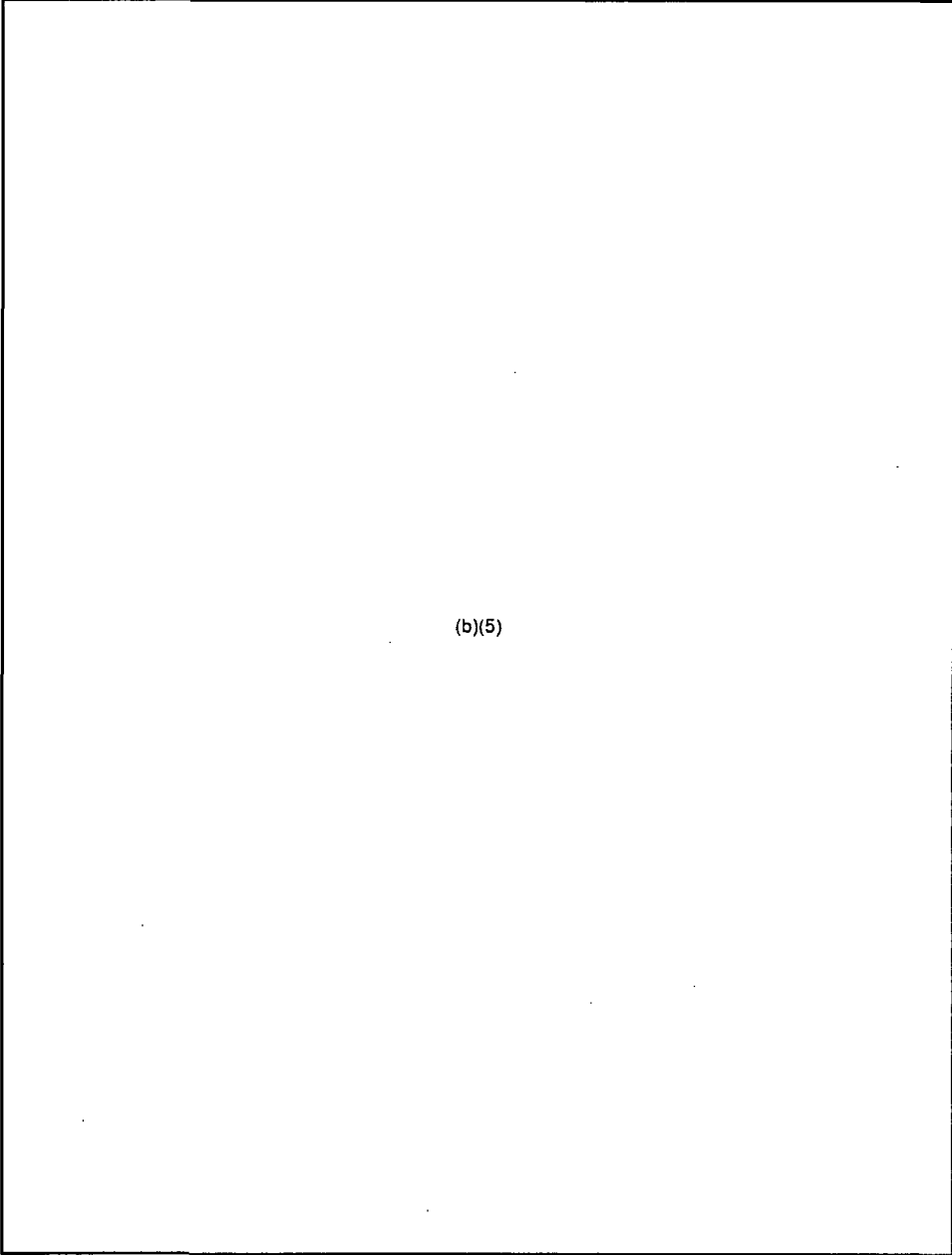
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6-111



(b)(5)

6-112

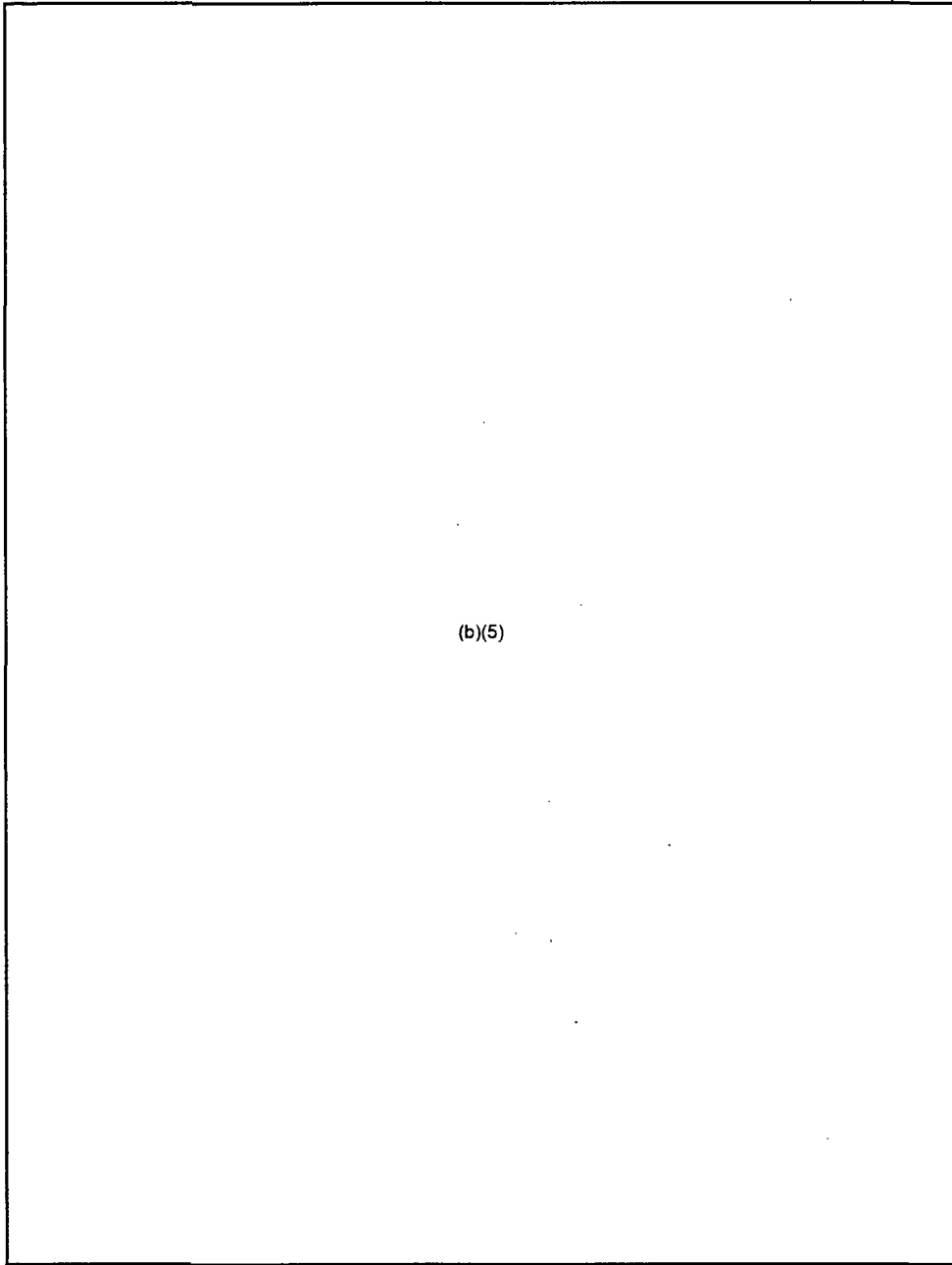


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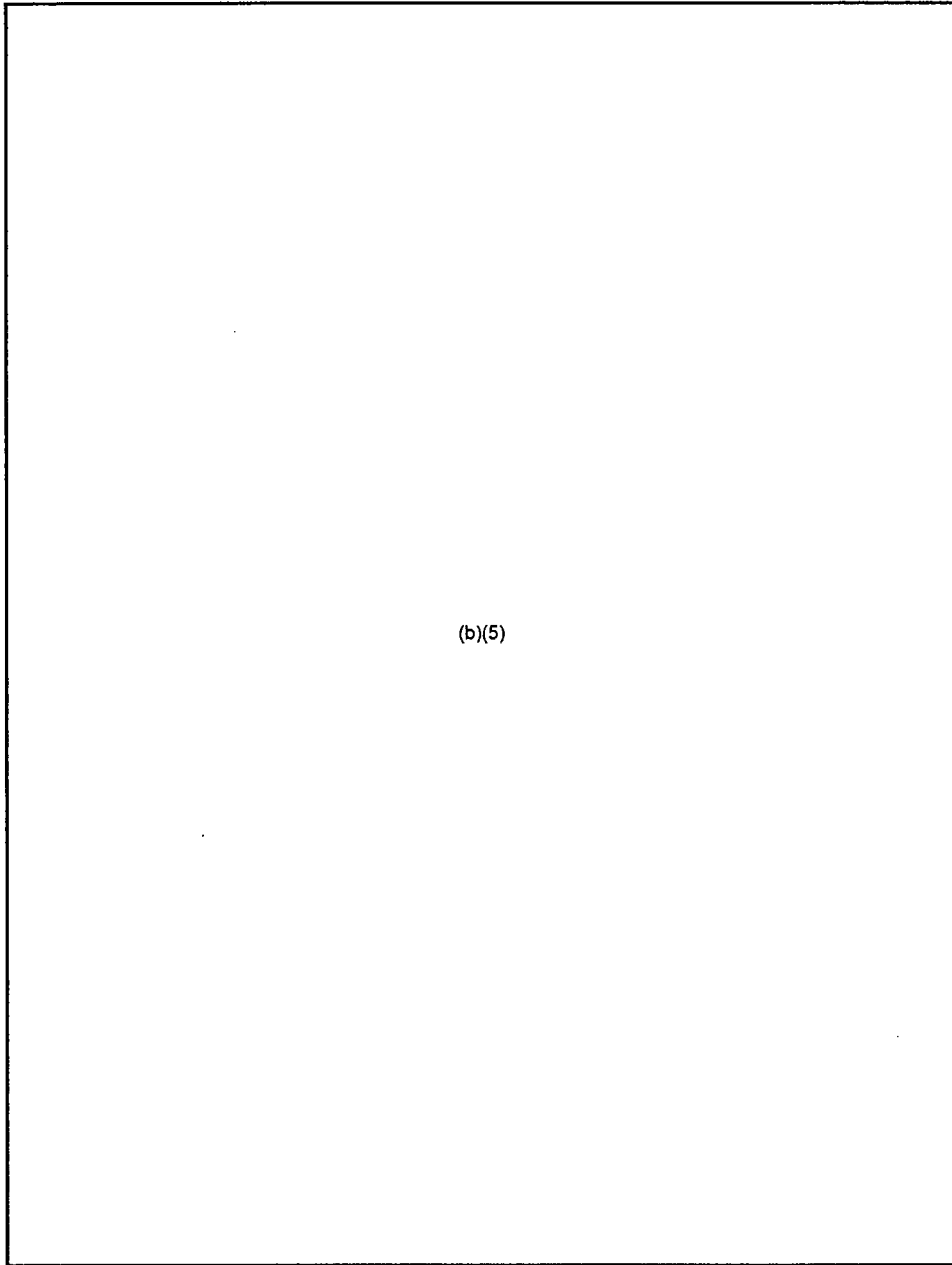
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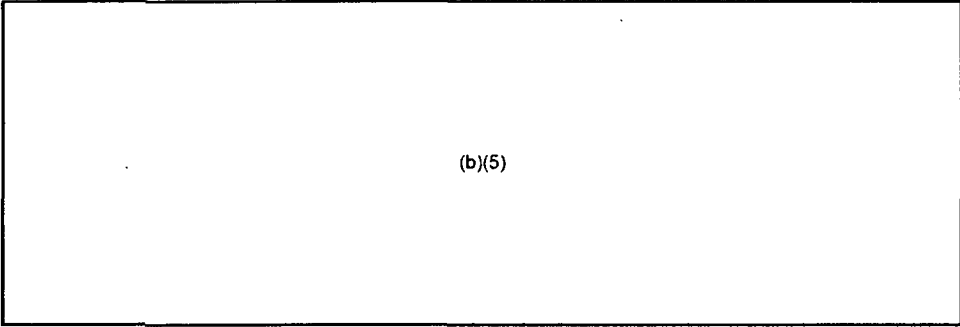
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(b)(5)

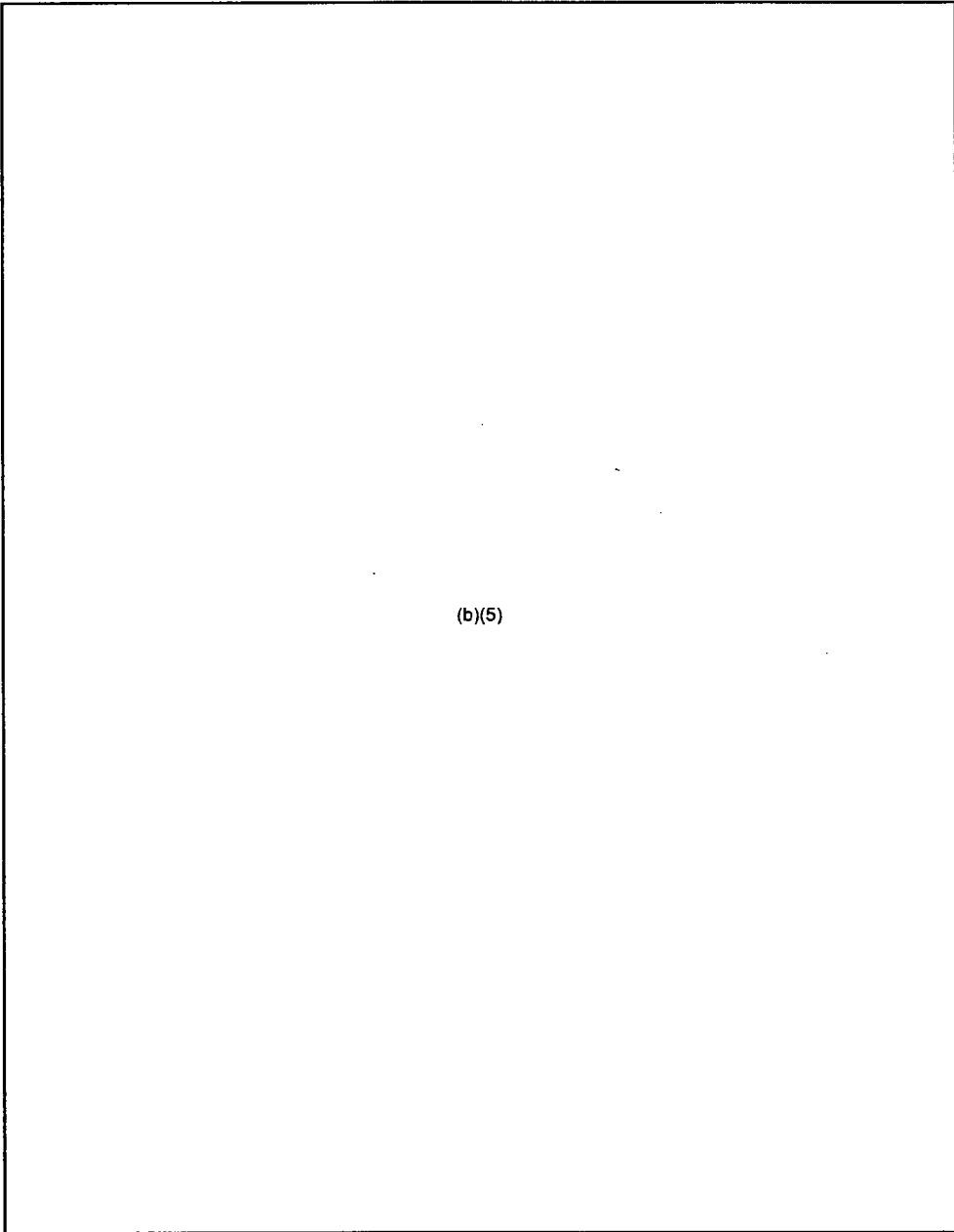
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(b)(5)

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6-118



(b)(5)

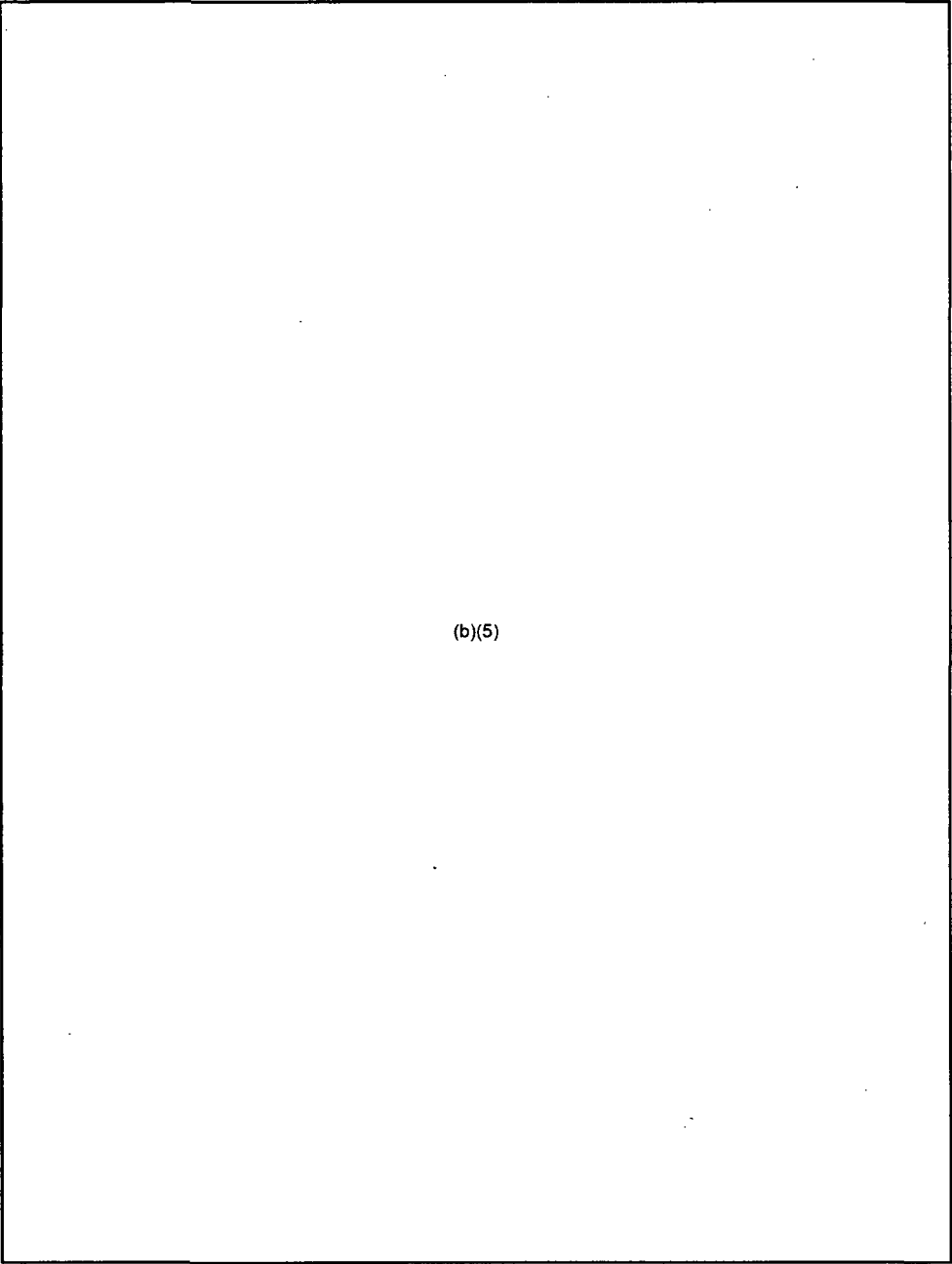
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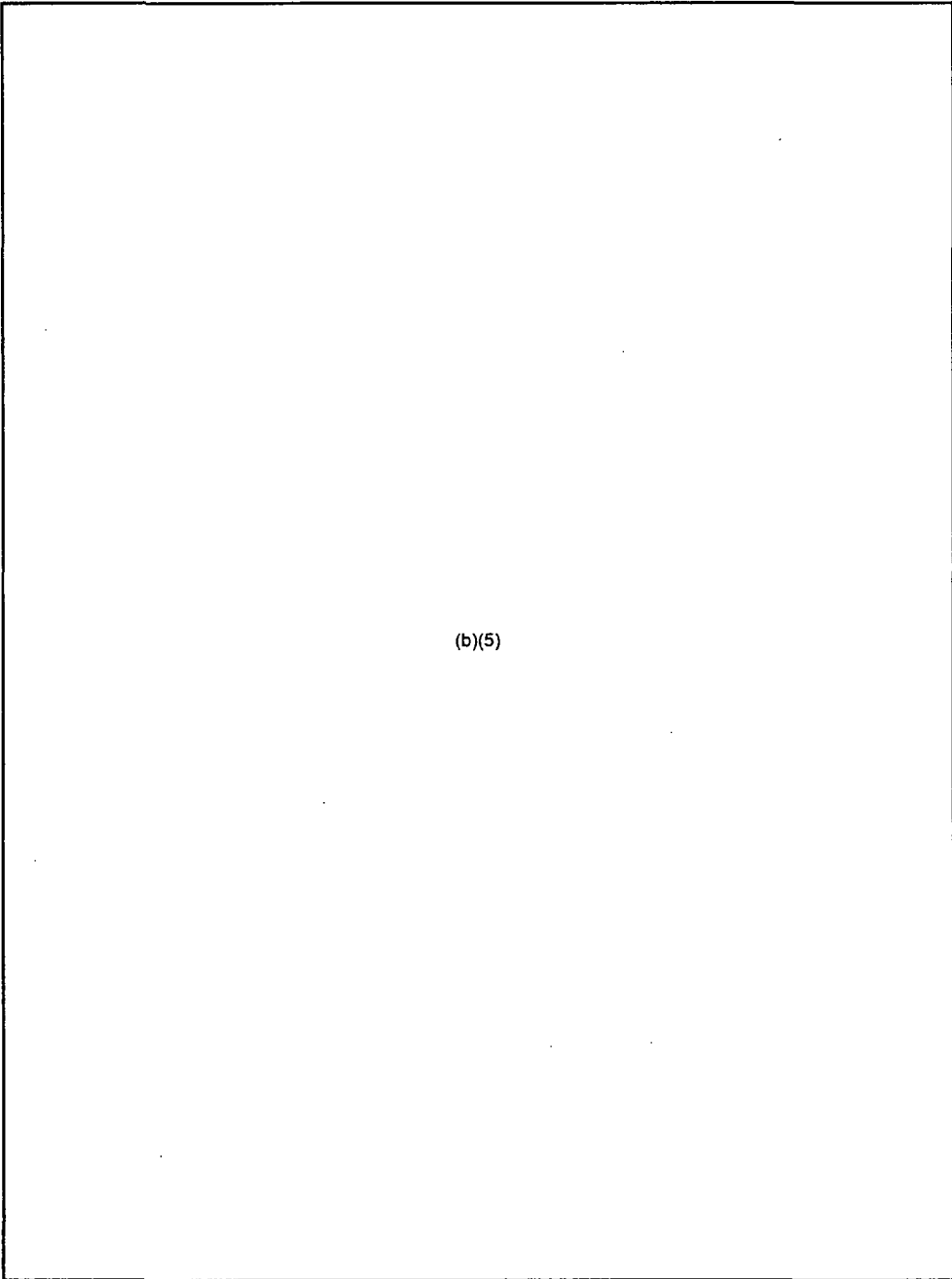
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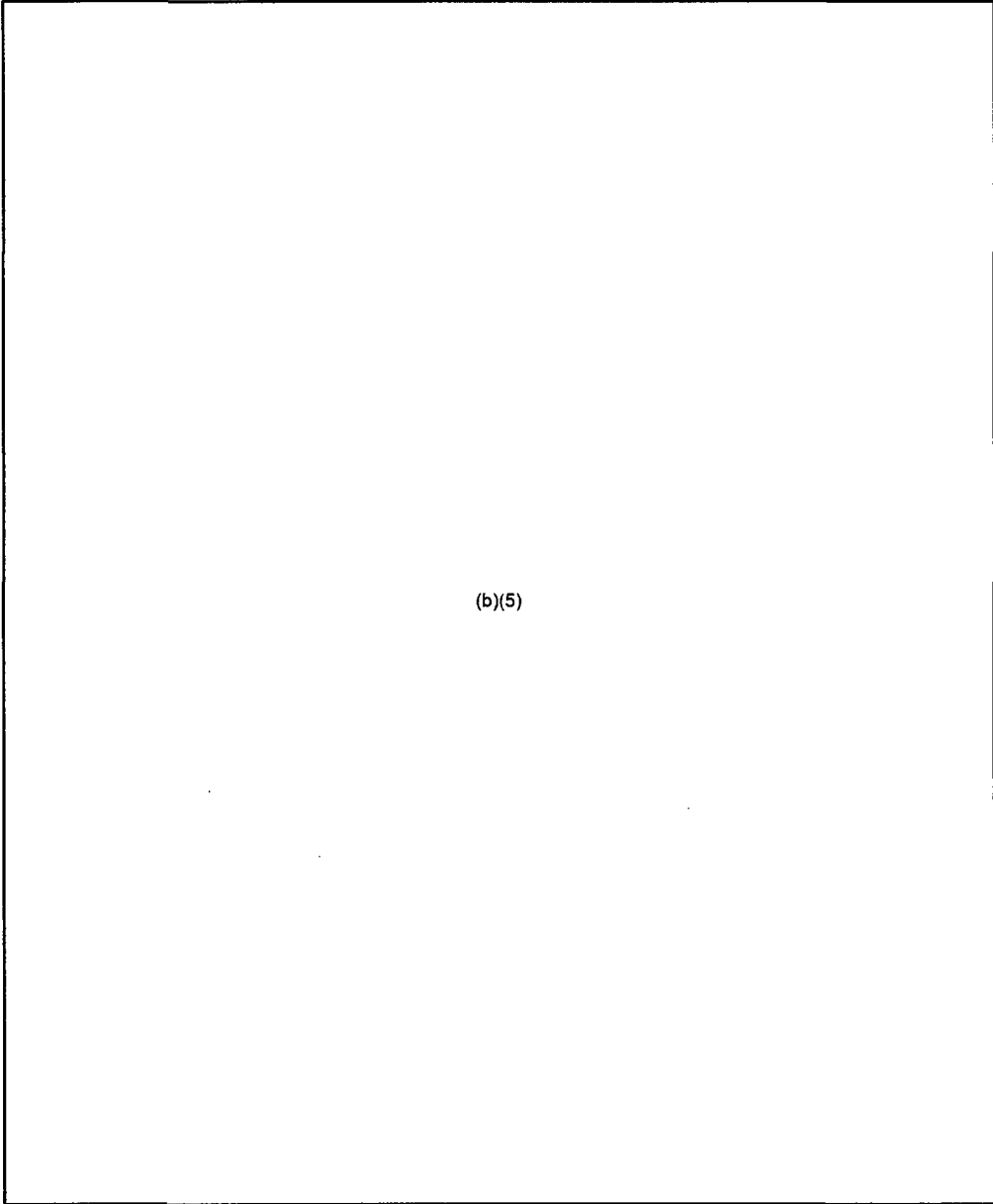


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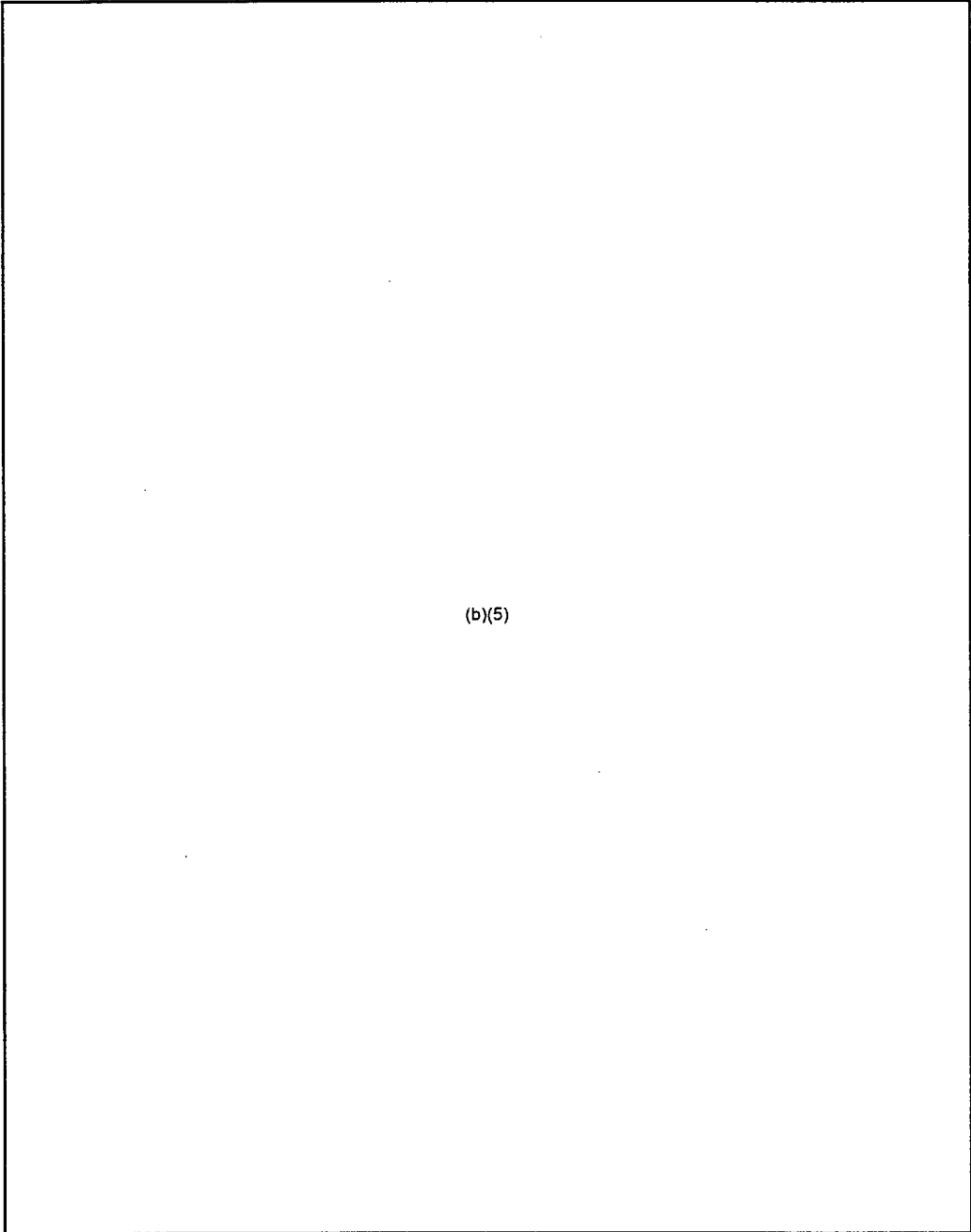


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(b)(5)



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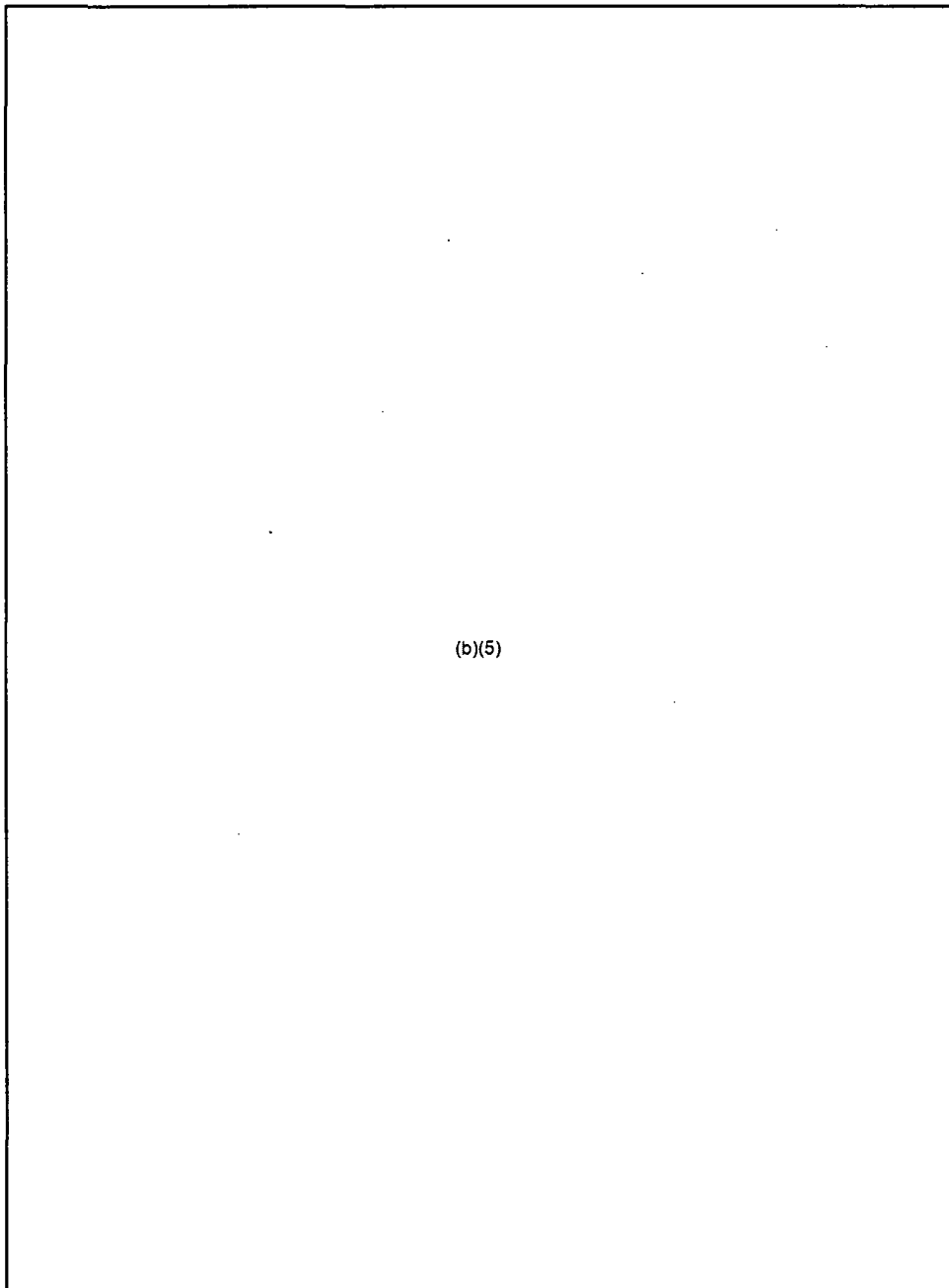
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(b)(5)

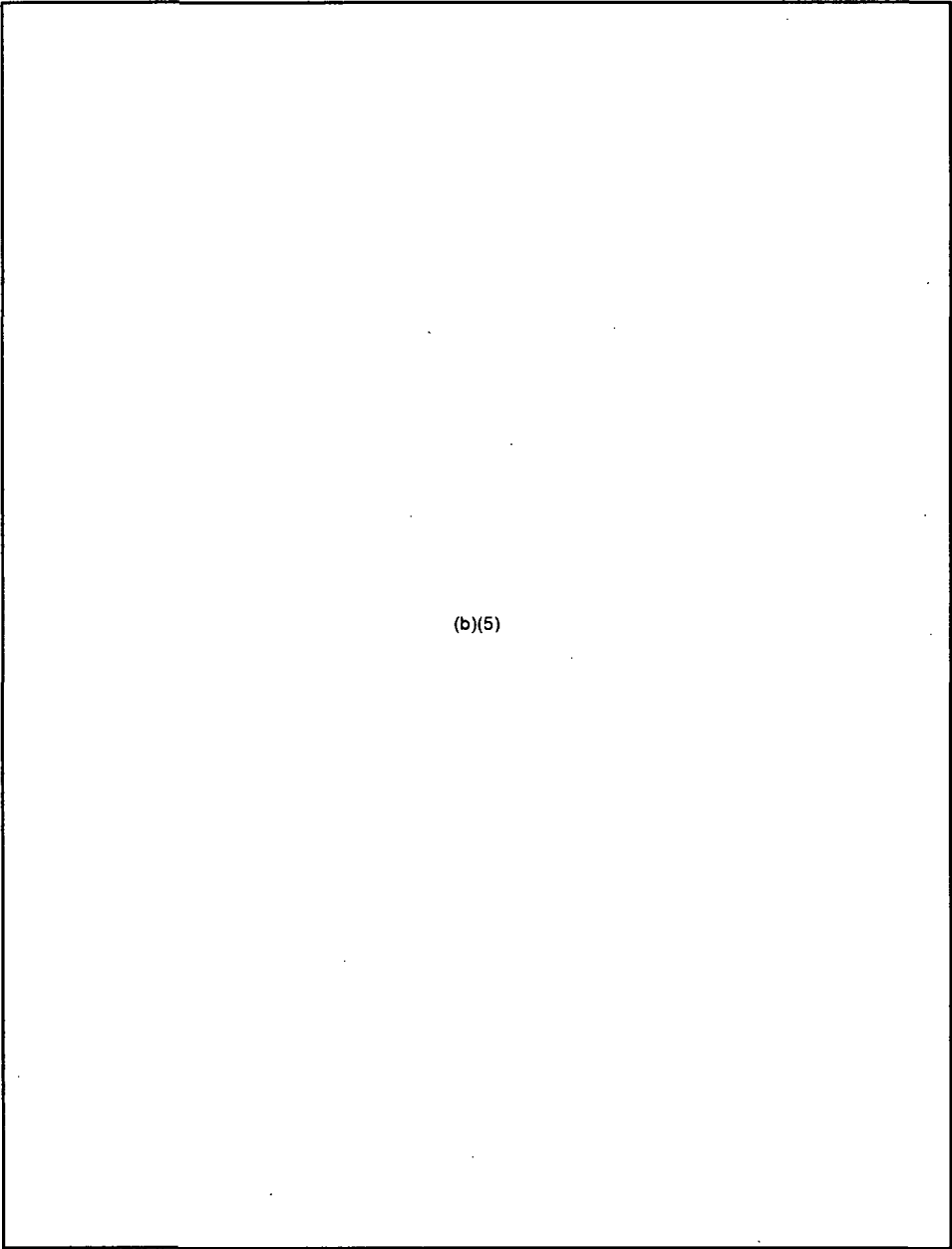
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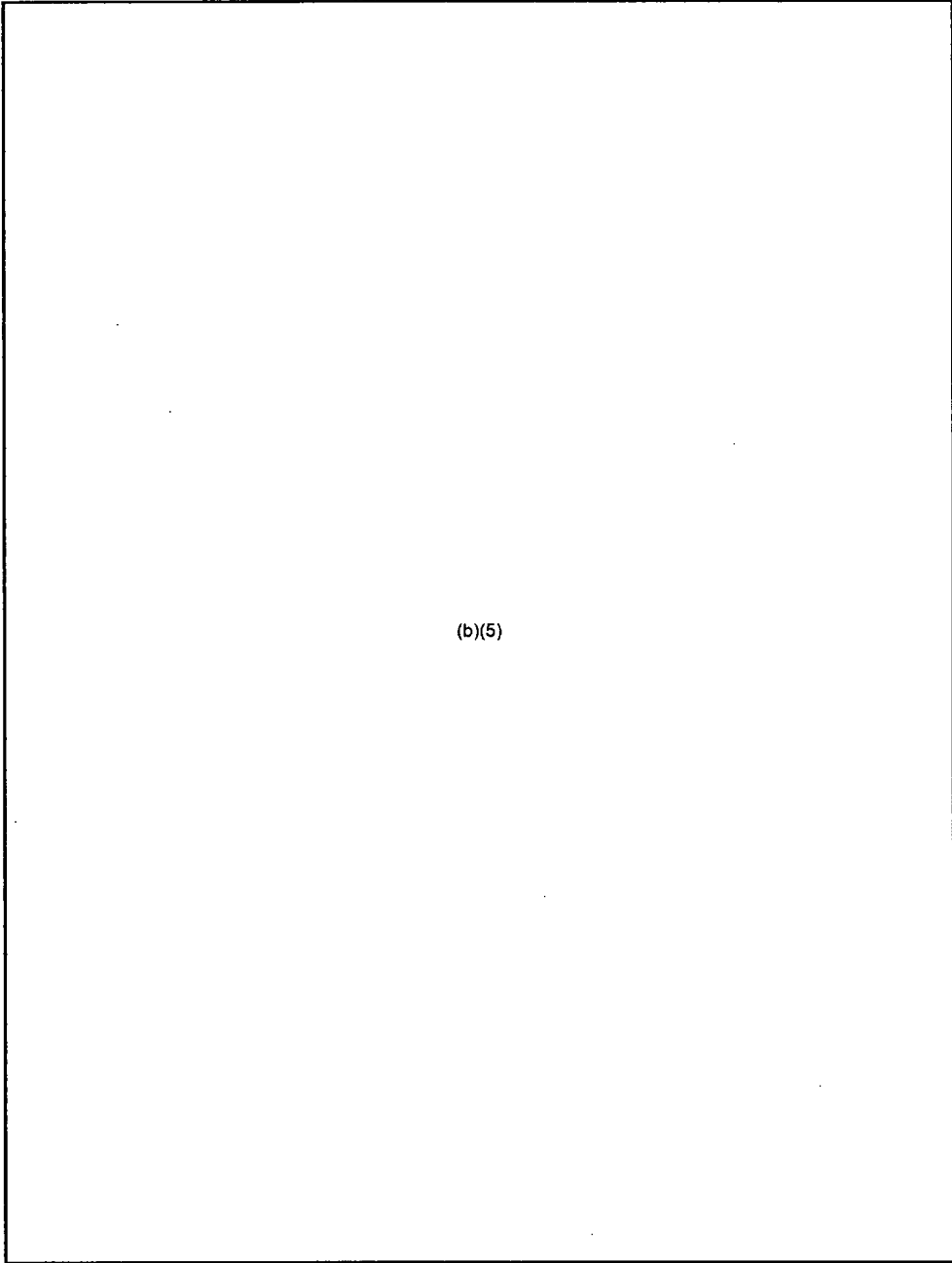


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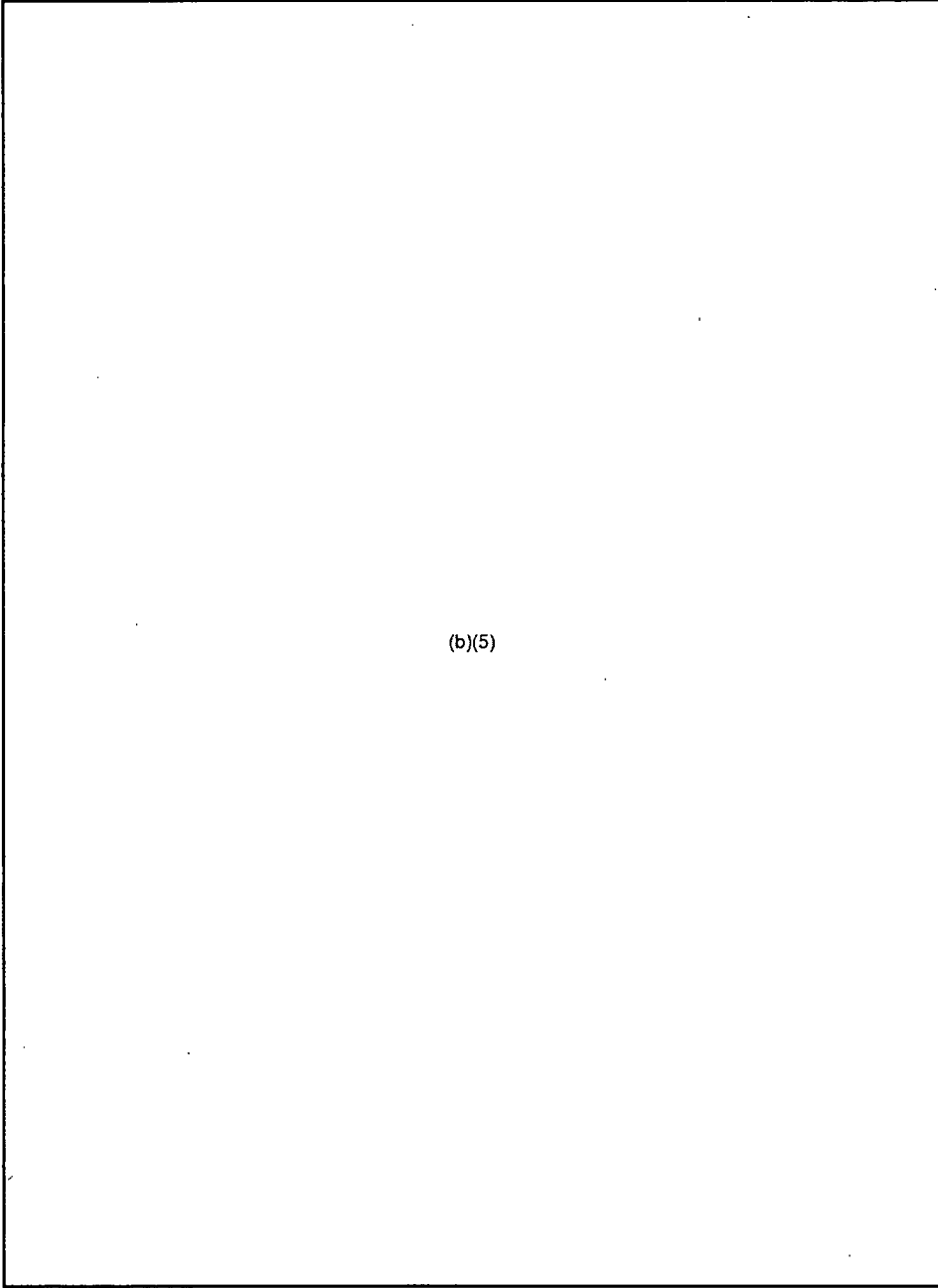


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6-132



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6-133

(b)(5)

6-134

(b)(5)

6-135

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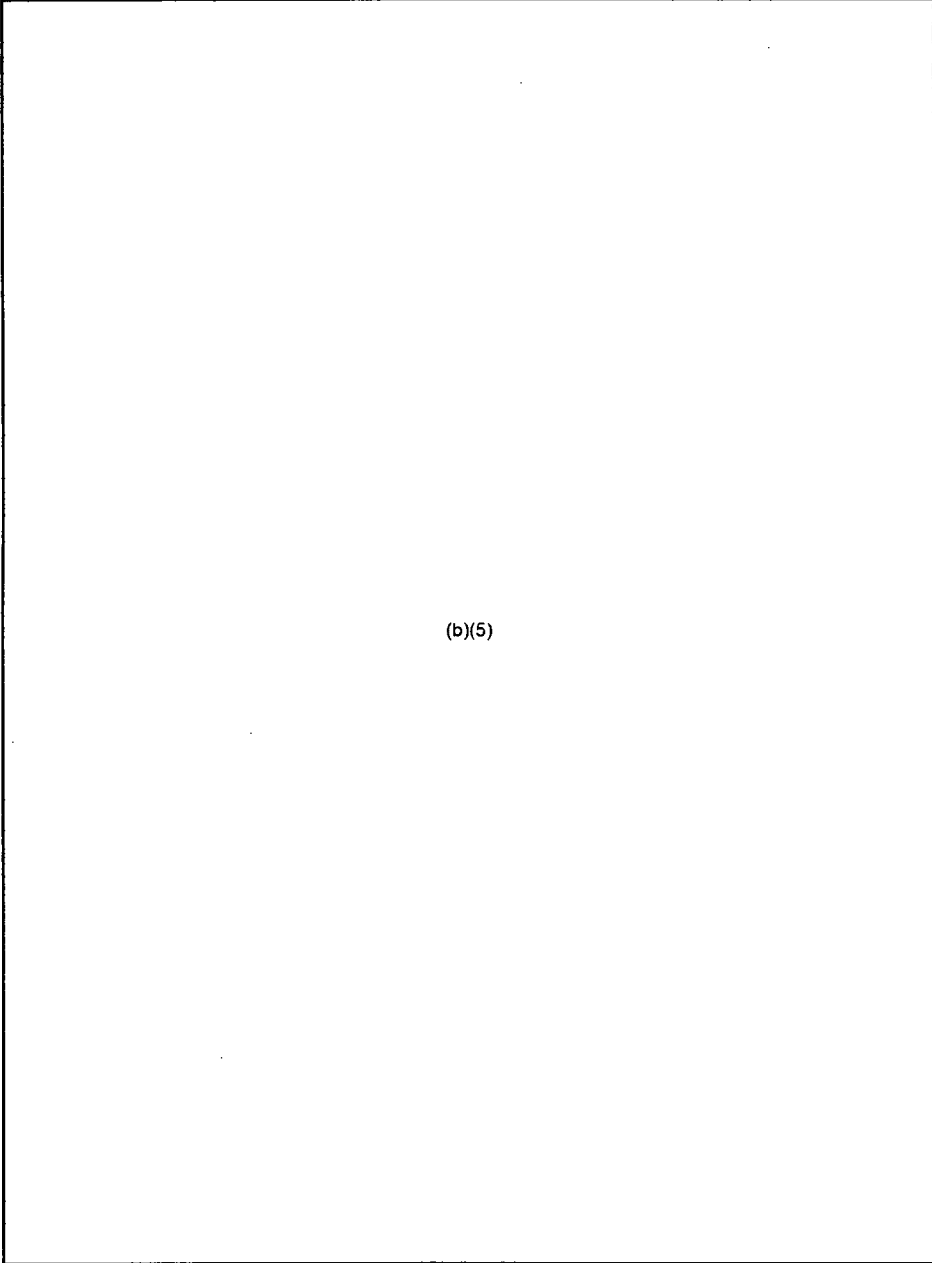
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6-137

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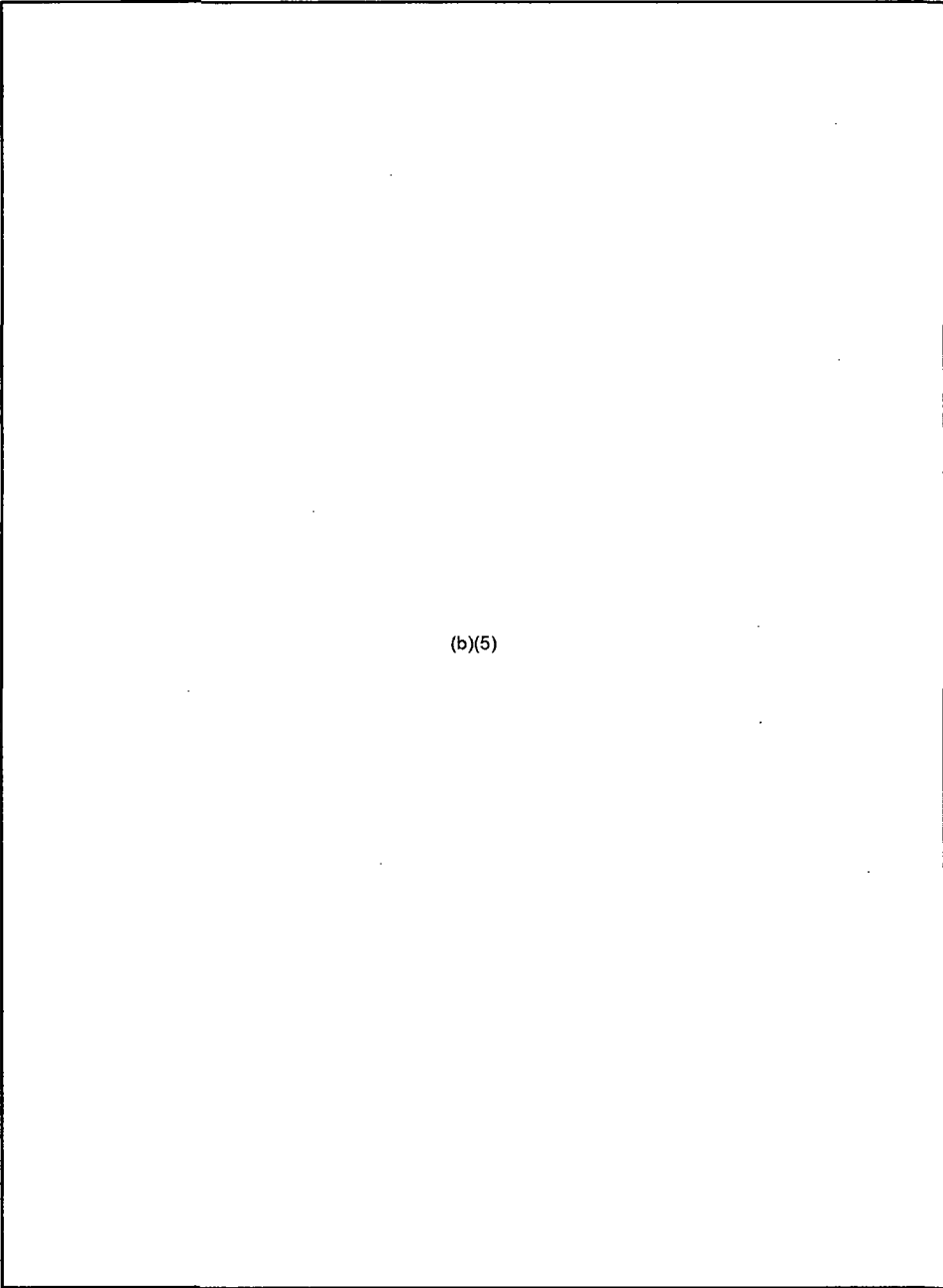
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6-140



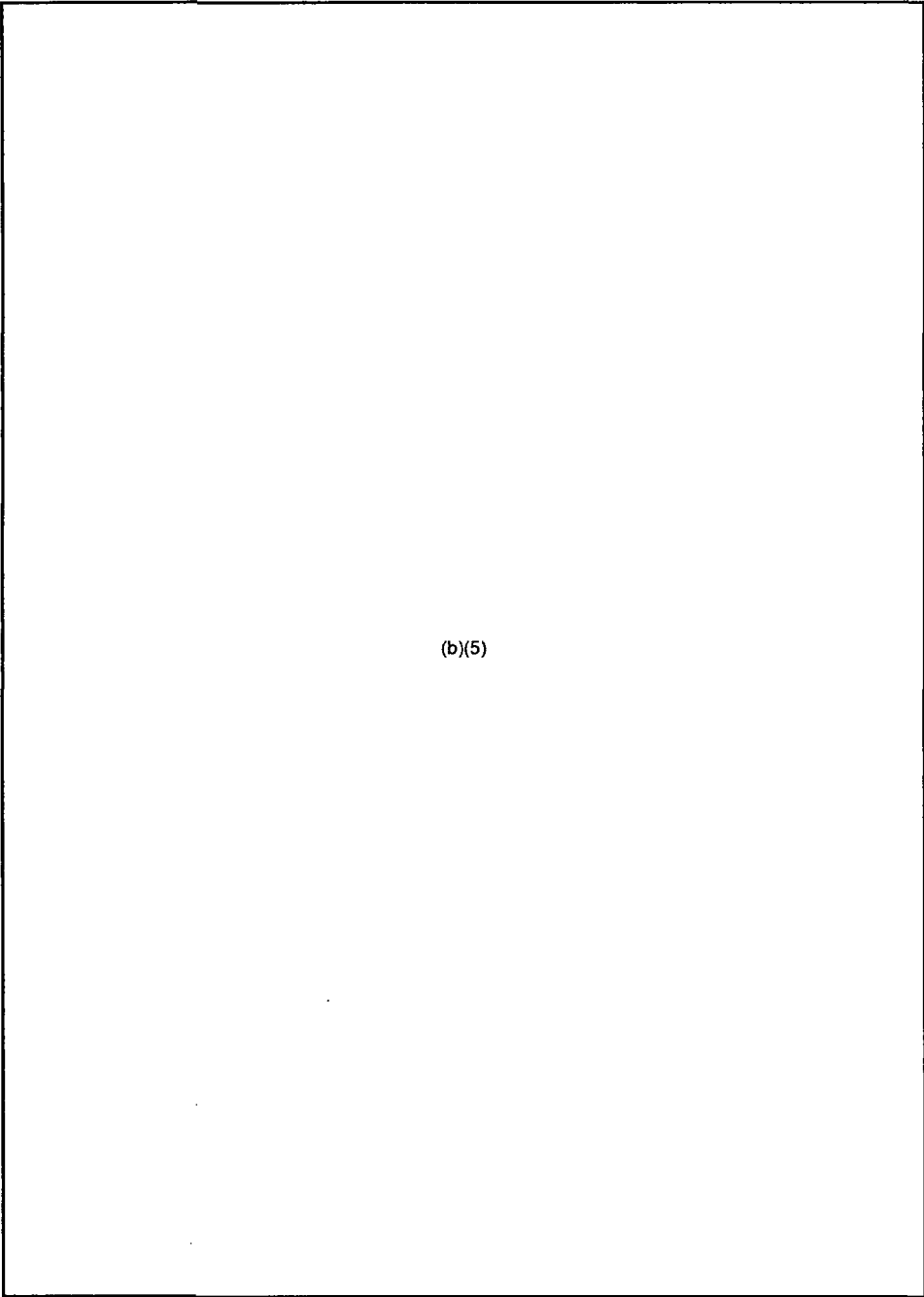
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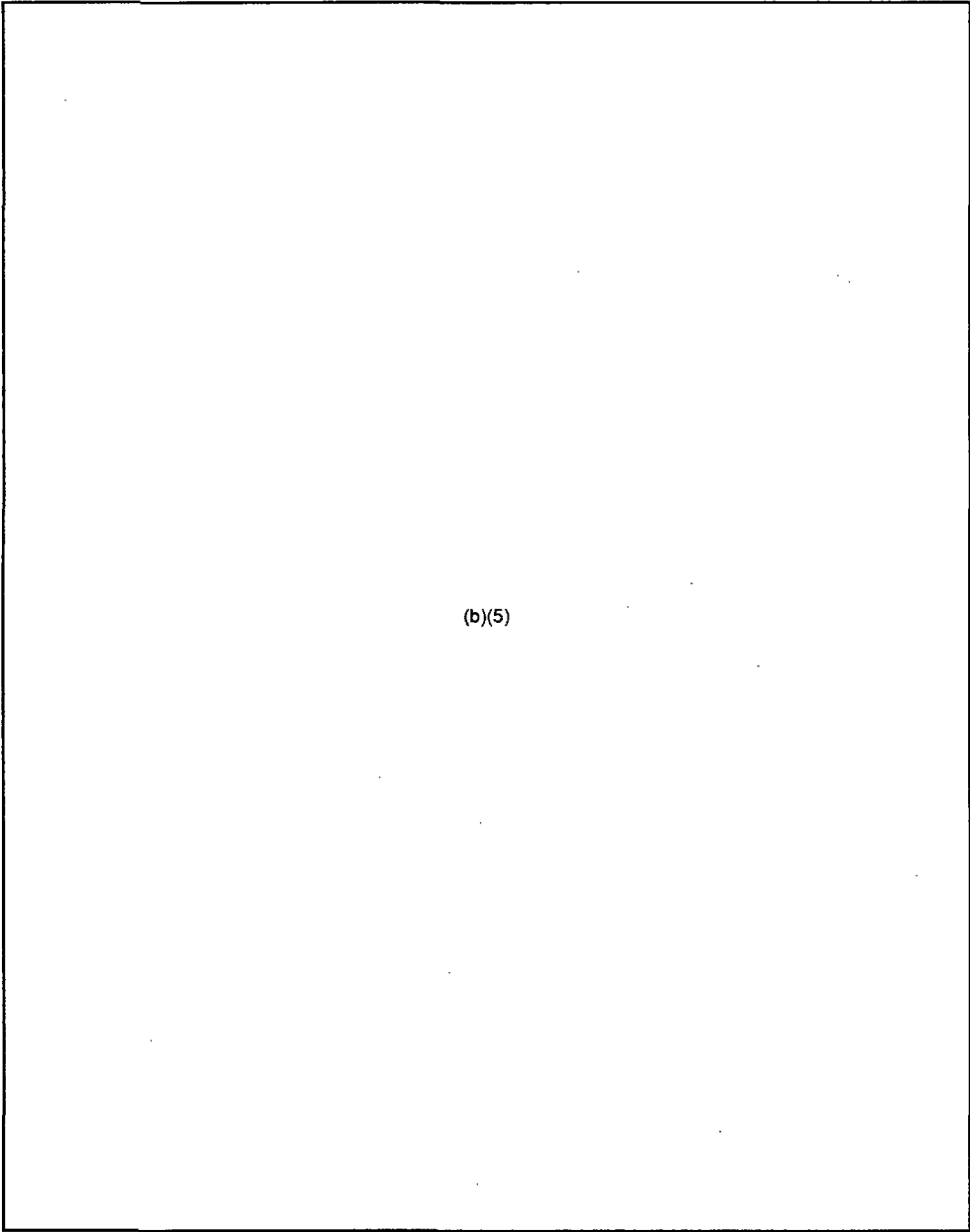


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6-144

(b)(5)

6-145



(b)(5)

(b)(5)

6-147

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6-148

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6-149

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6-150

(b)(5)

(b)(5)

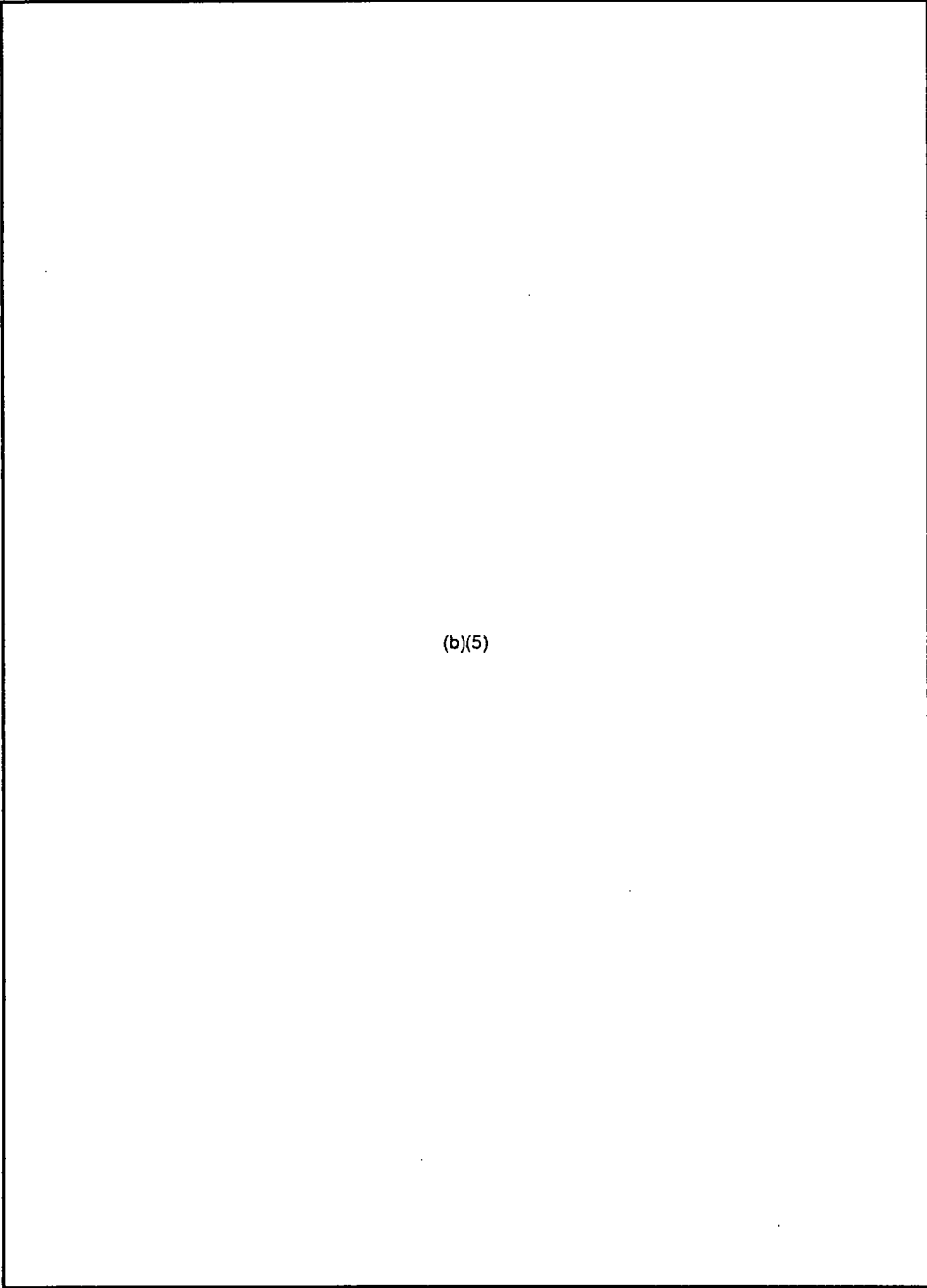
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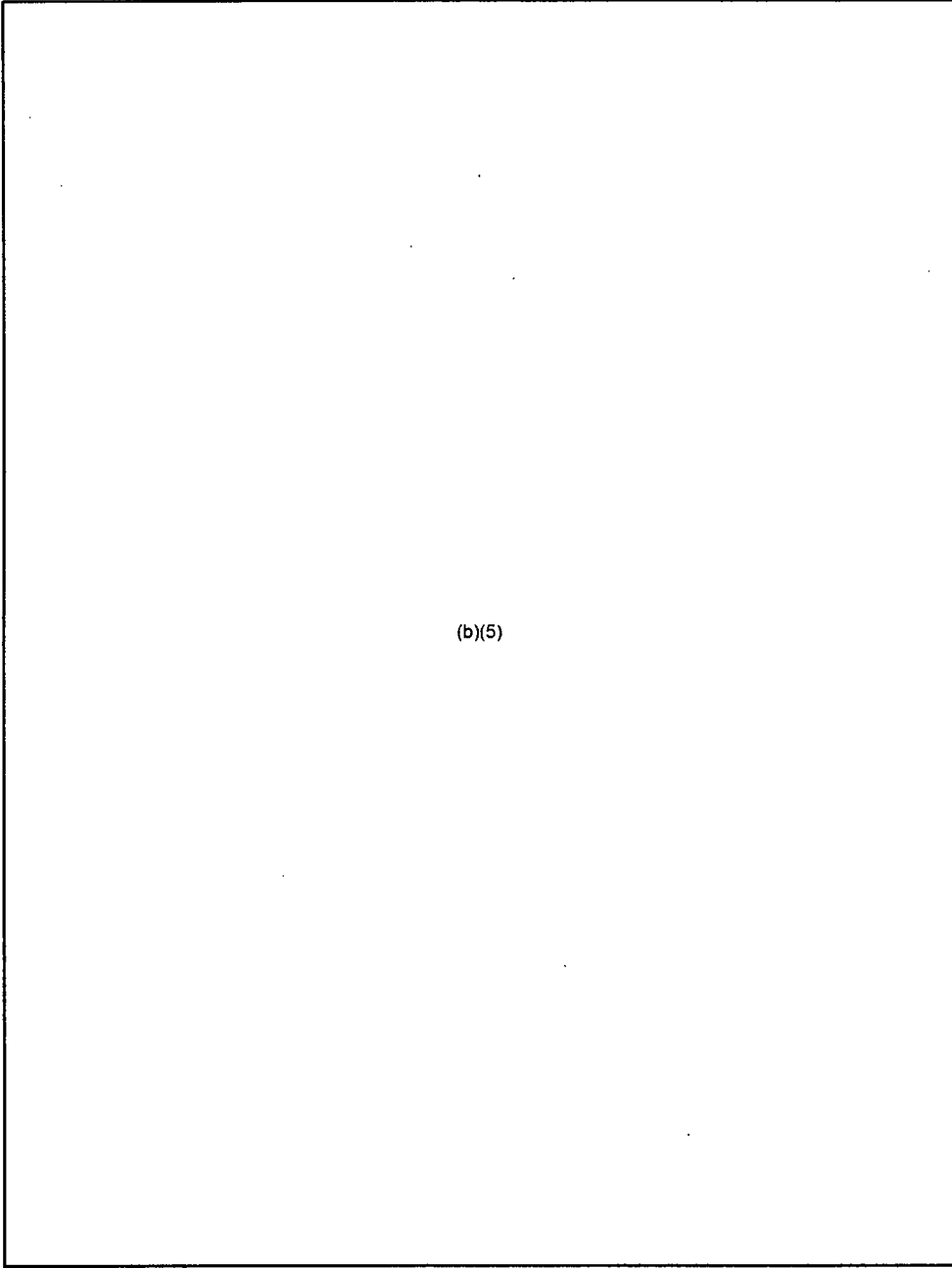
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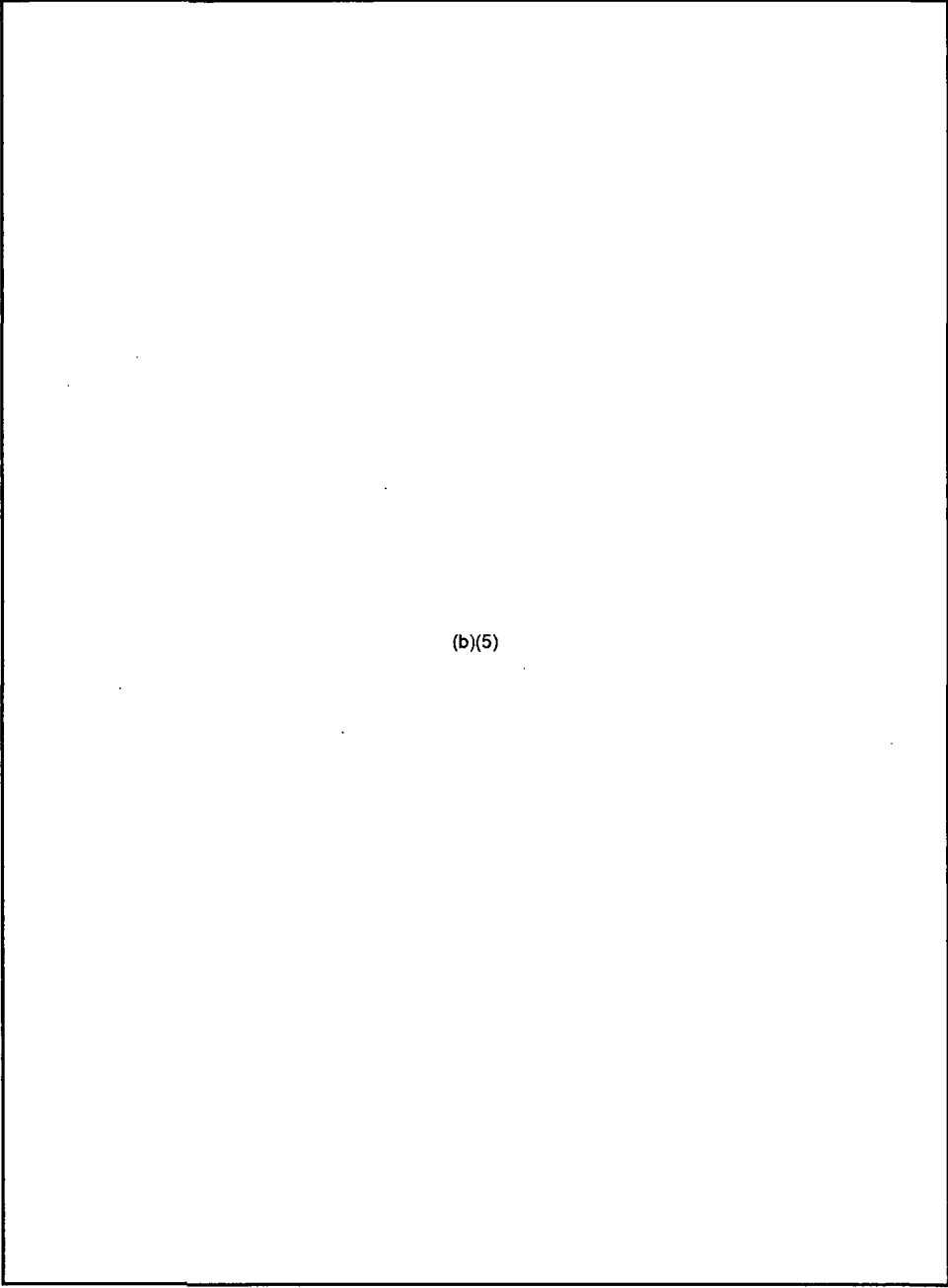


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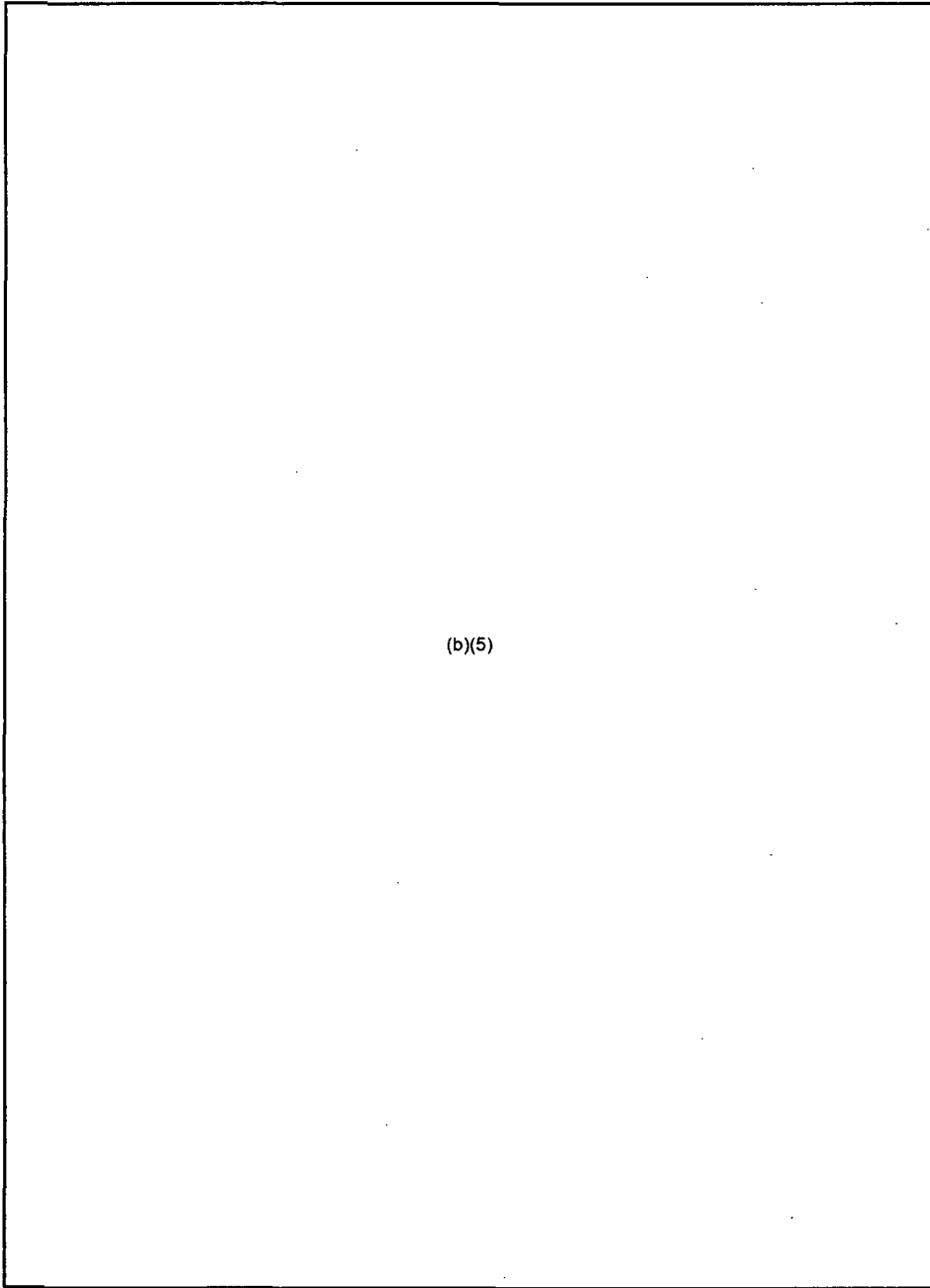
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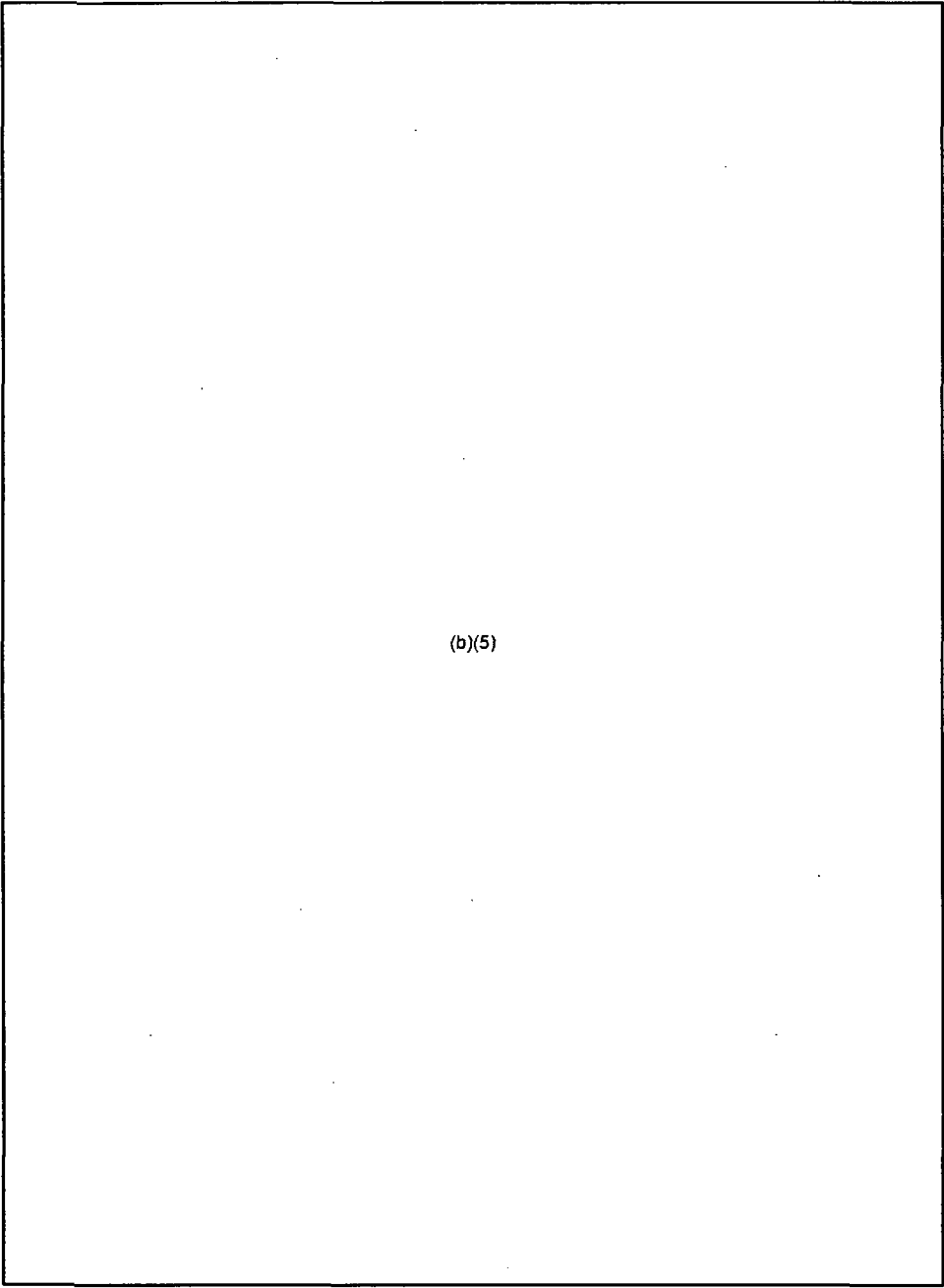


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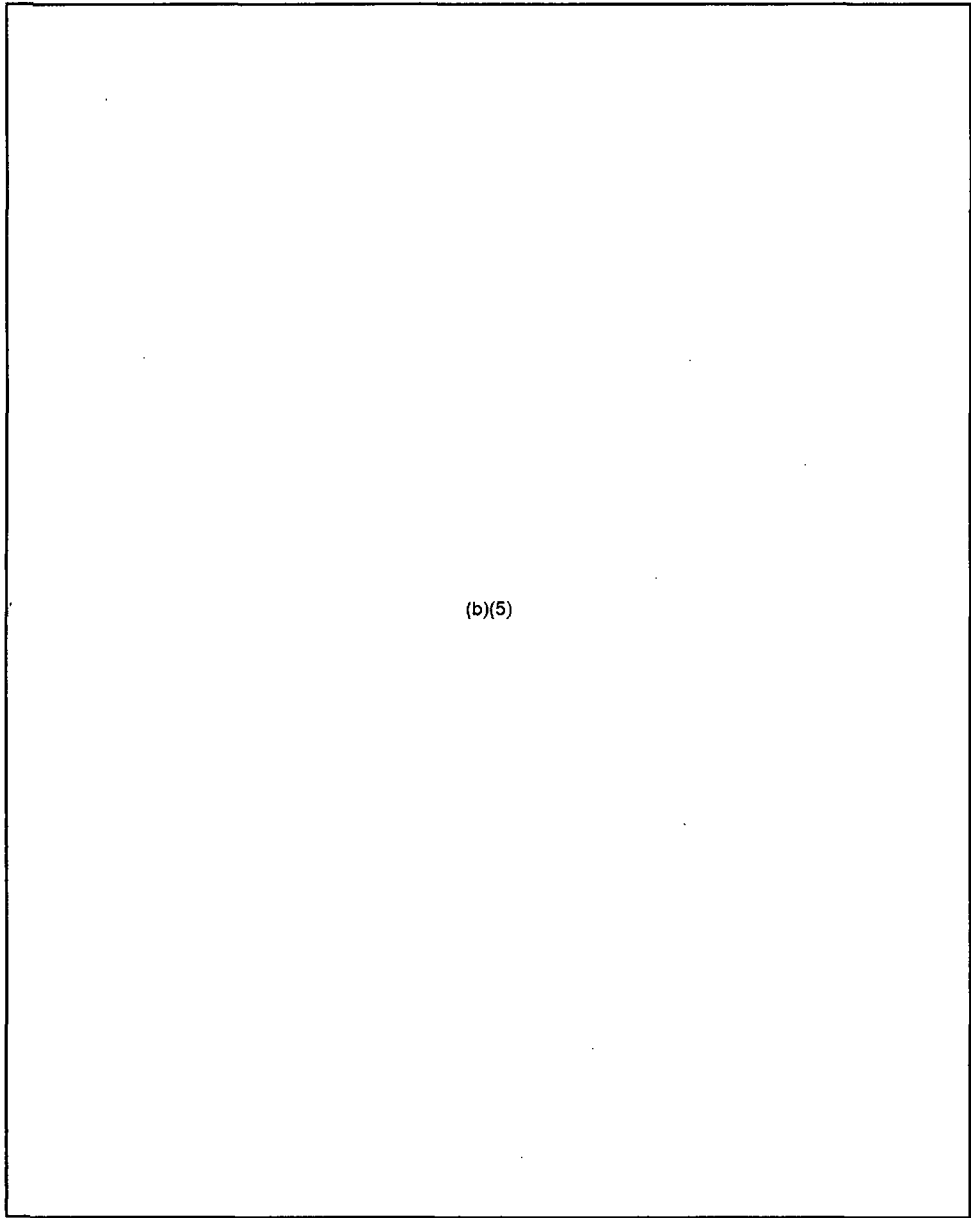
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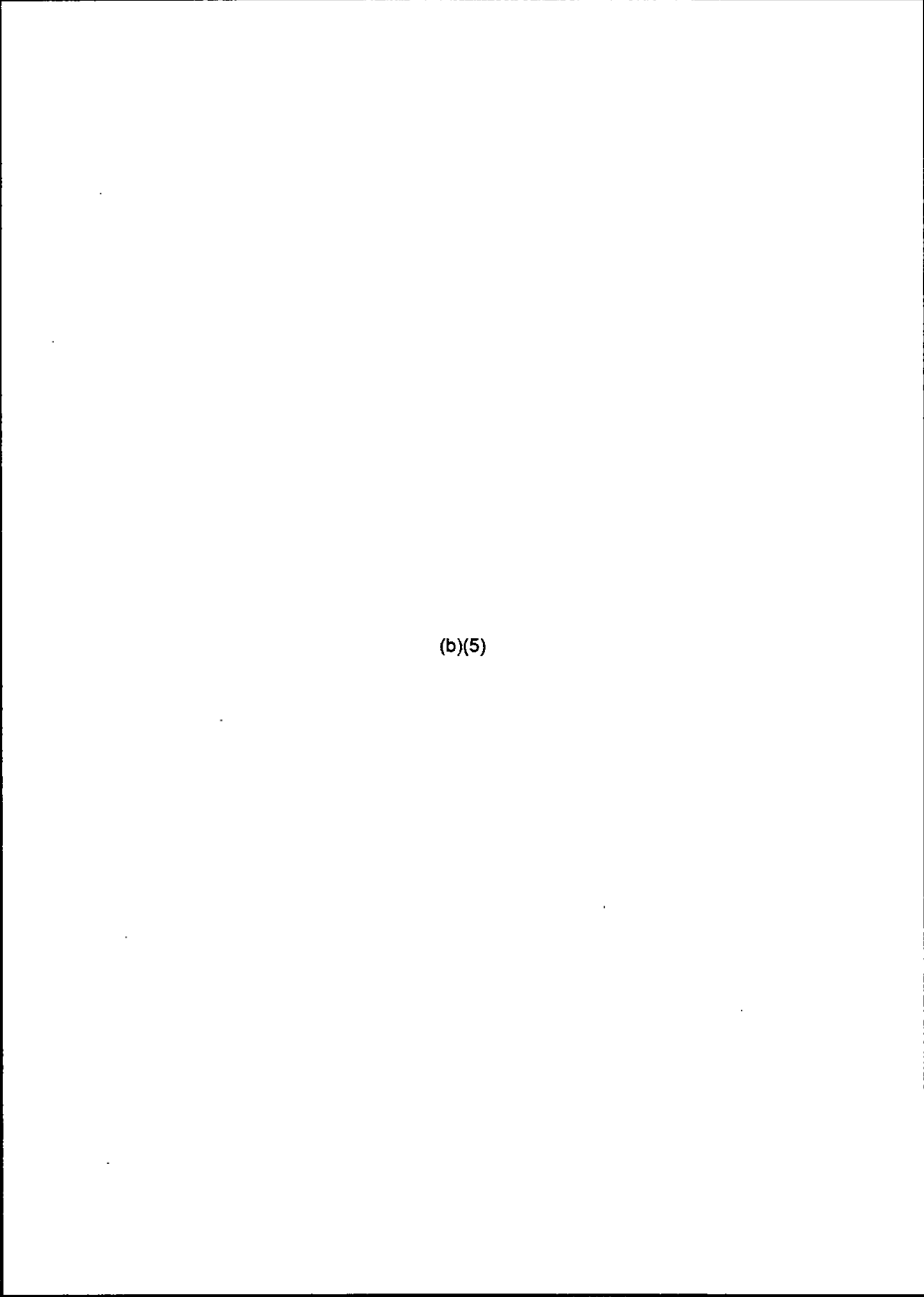
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6-160



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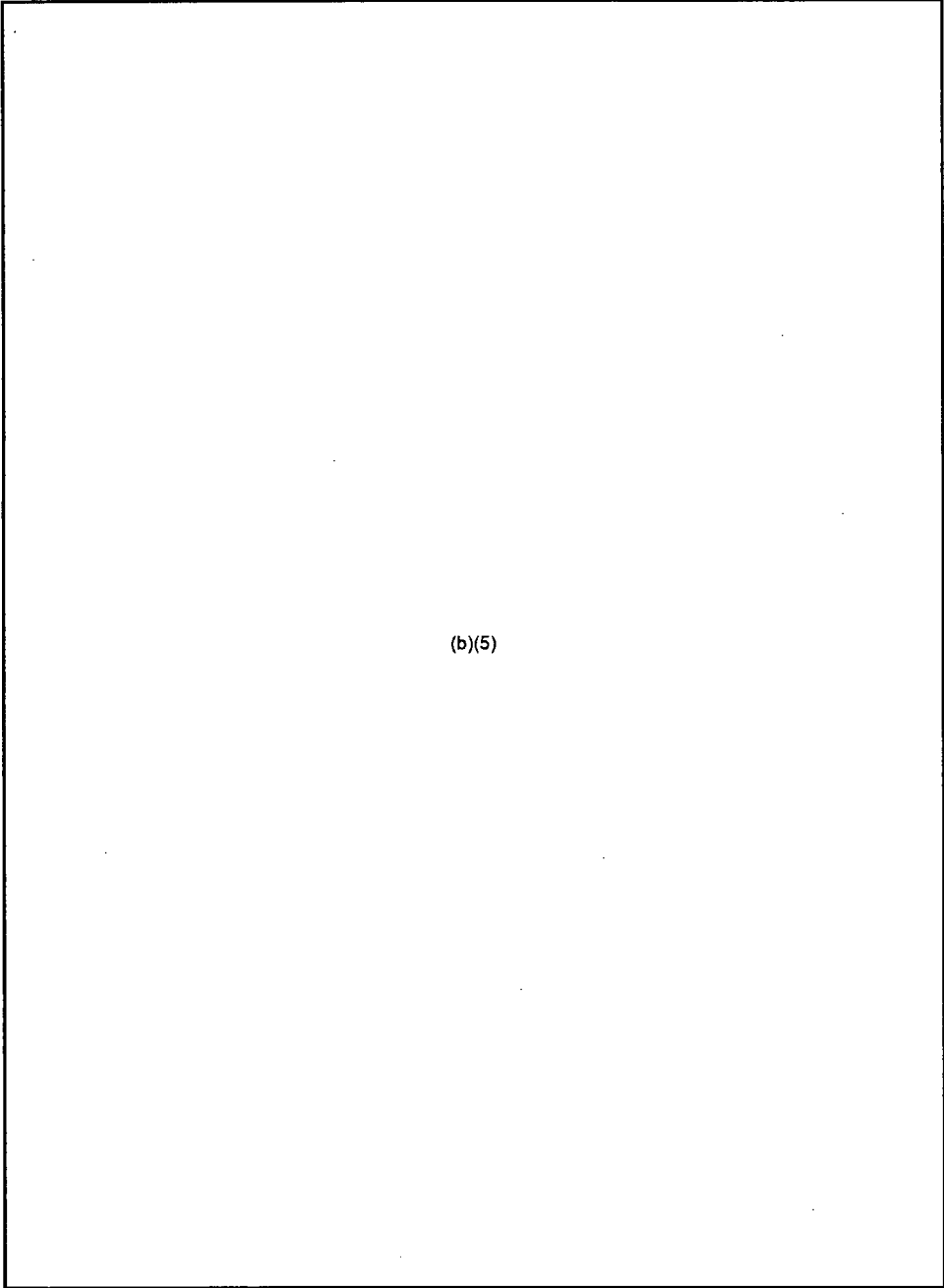


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6-162

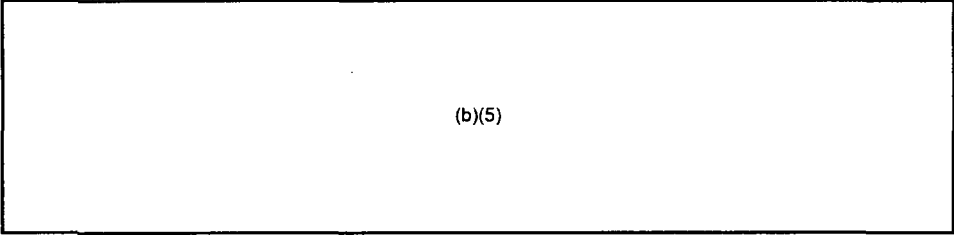
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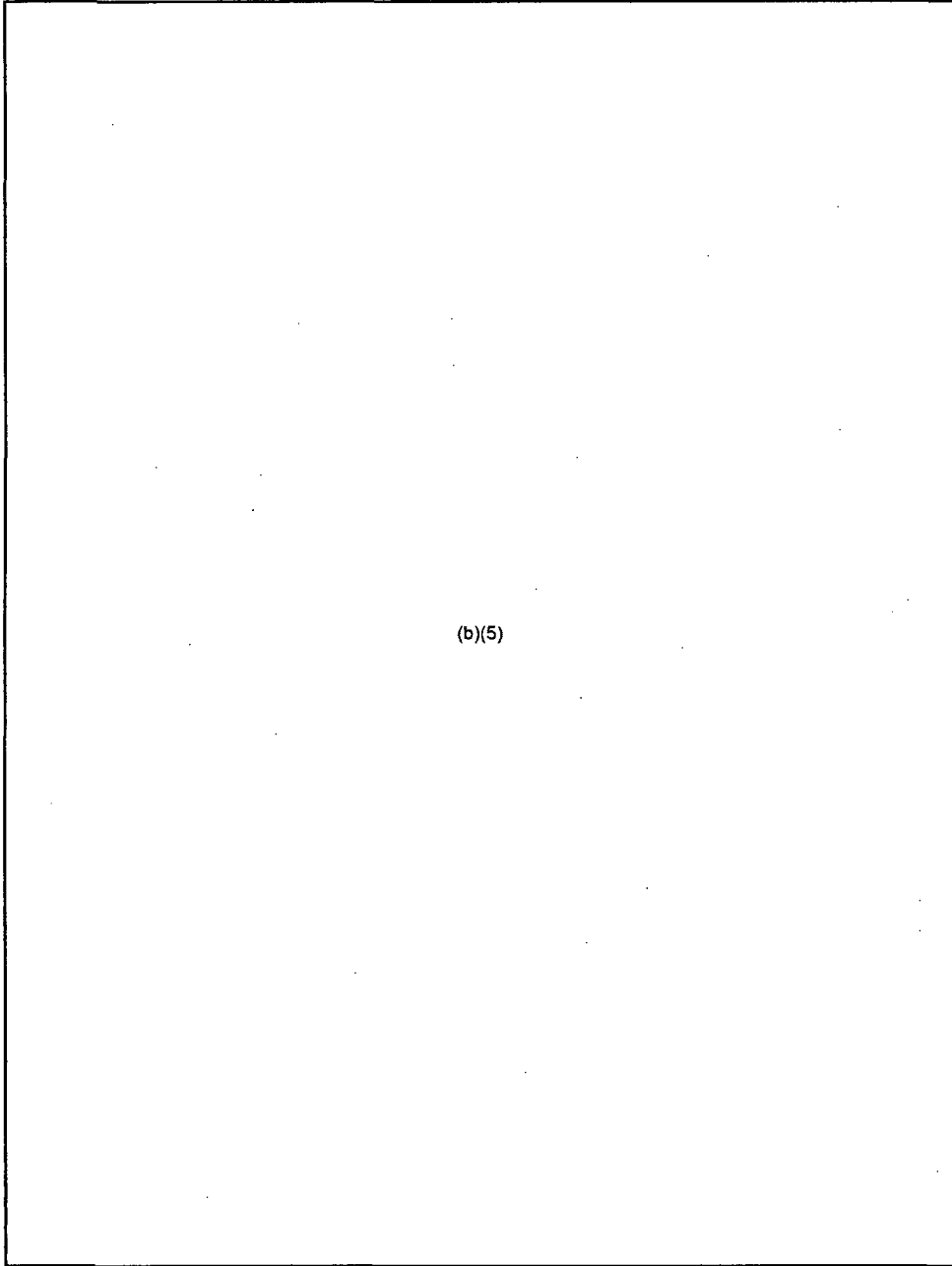


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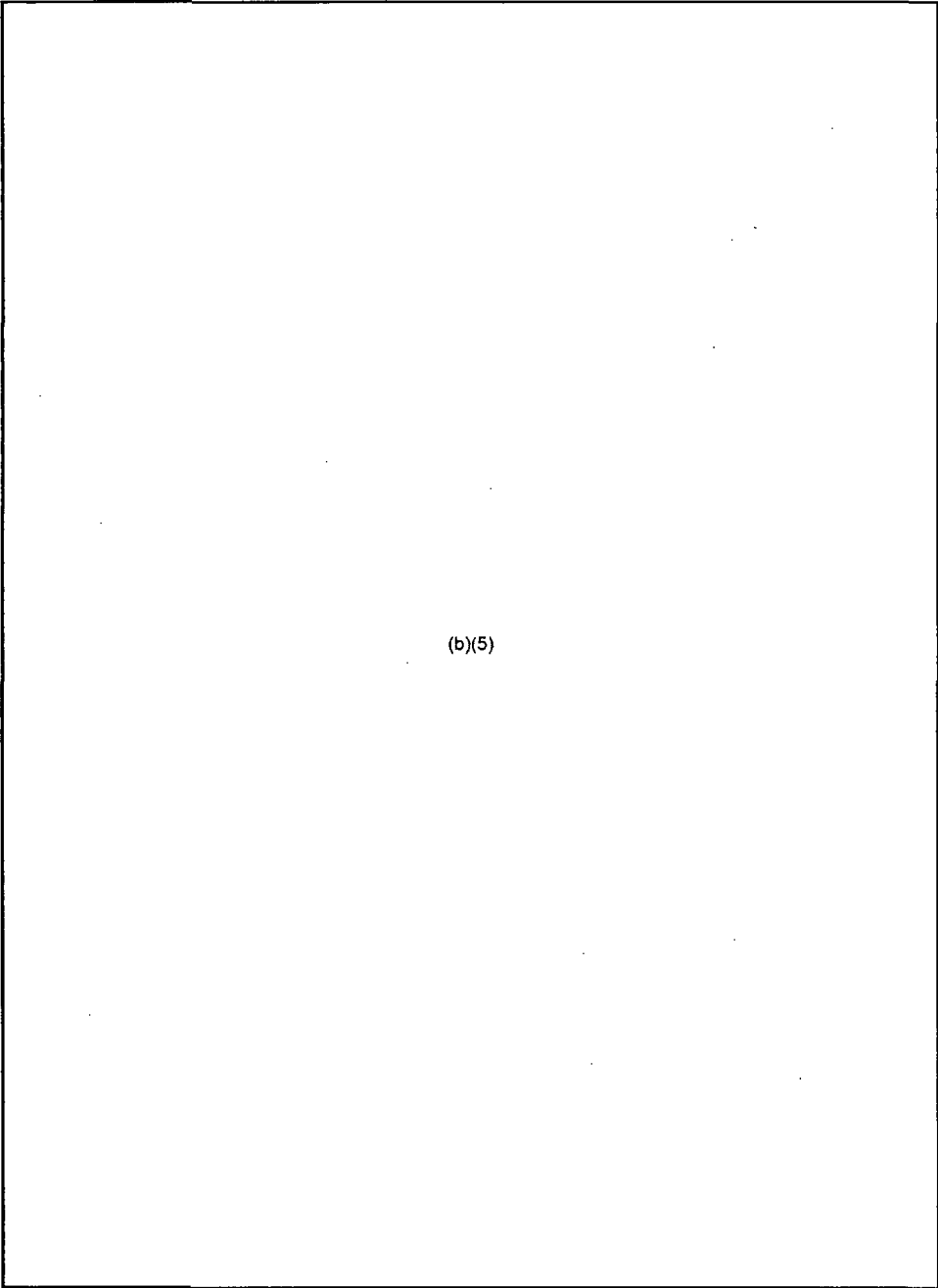


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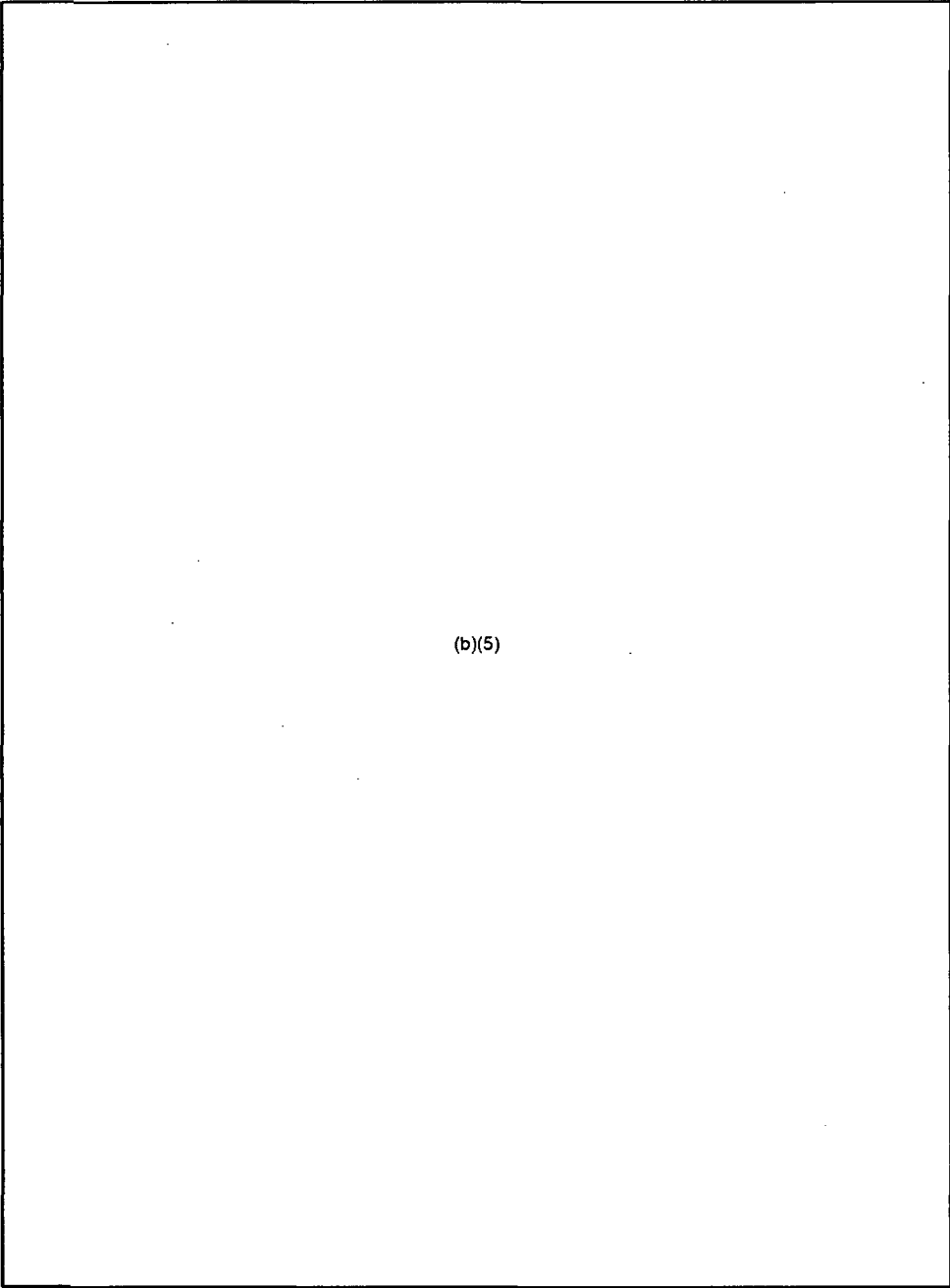
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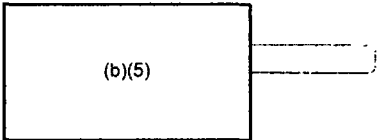


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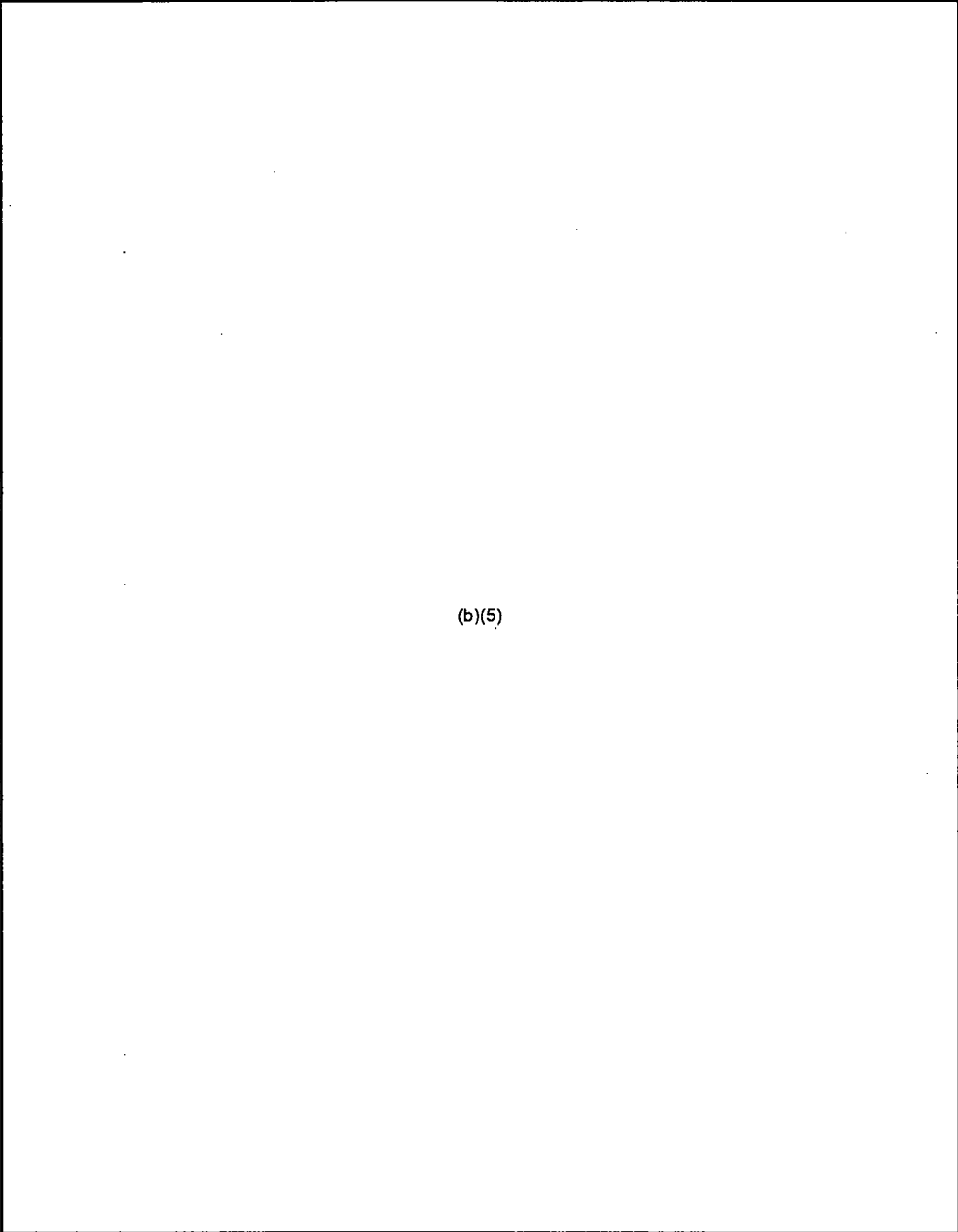
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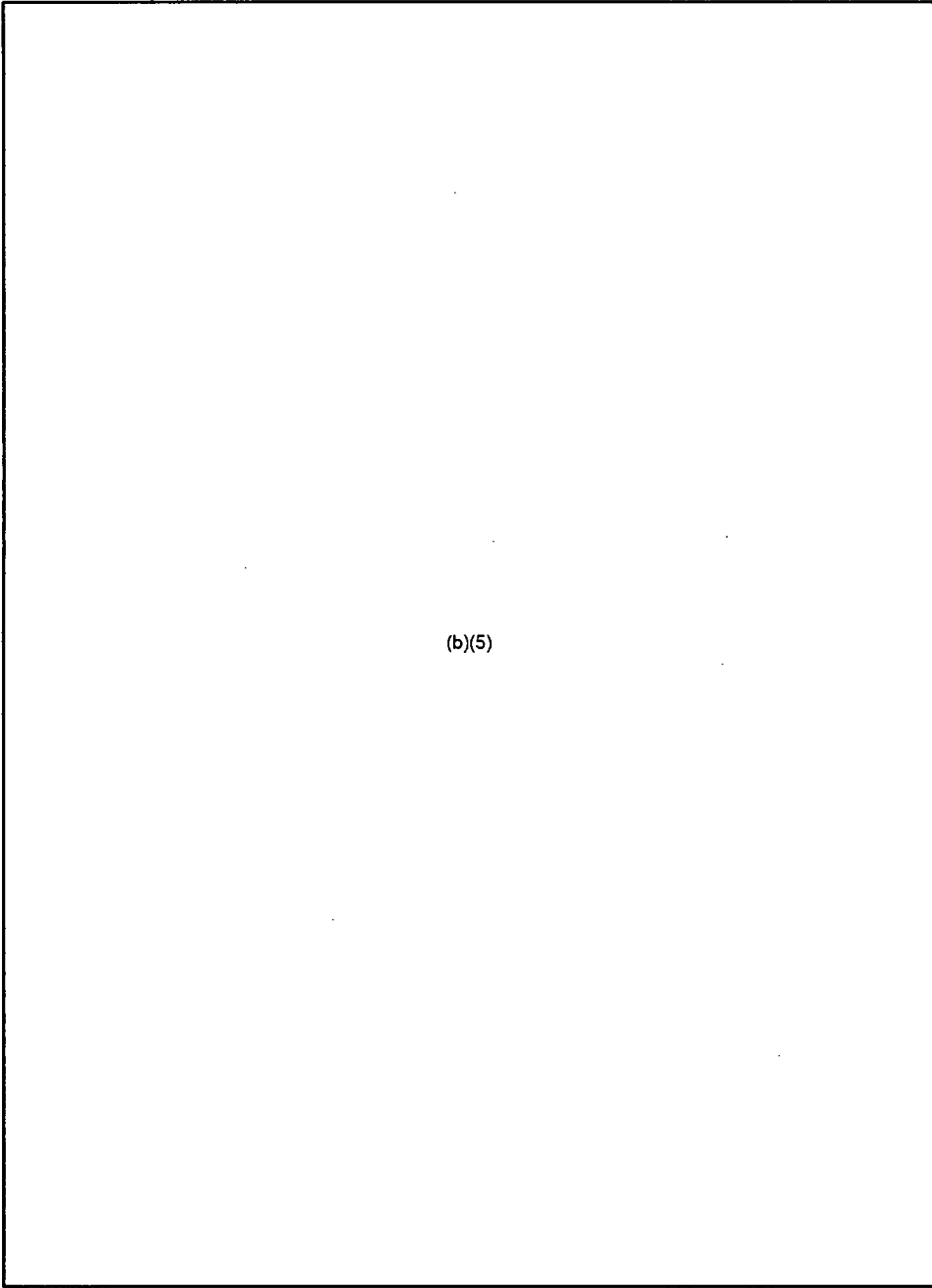
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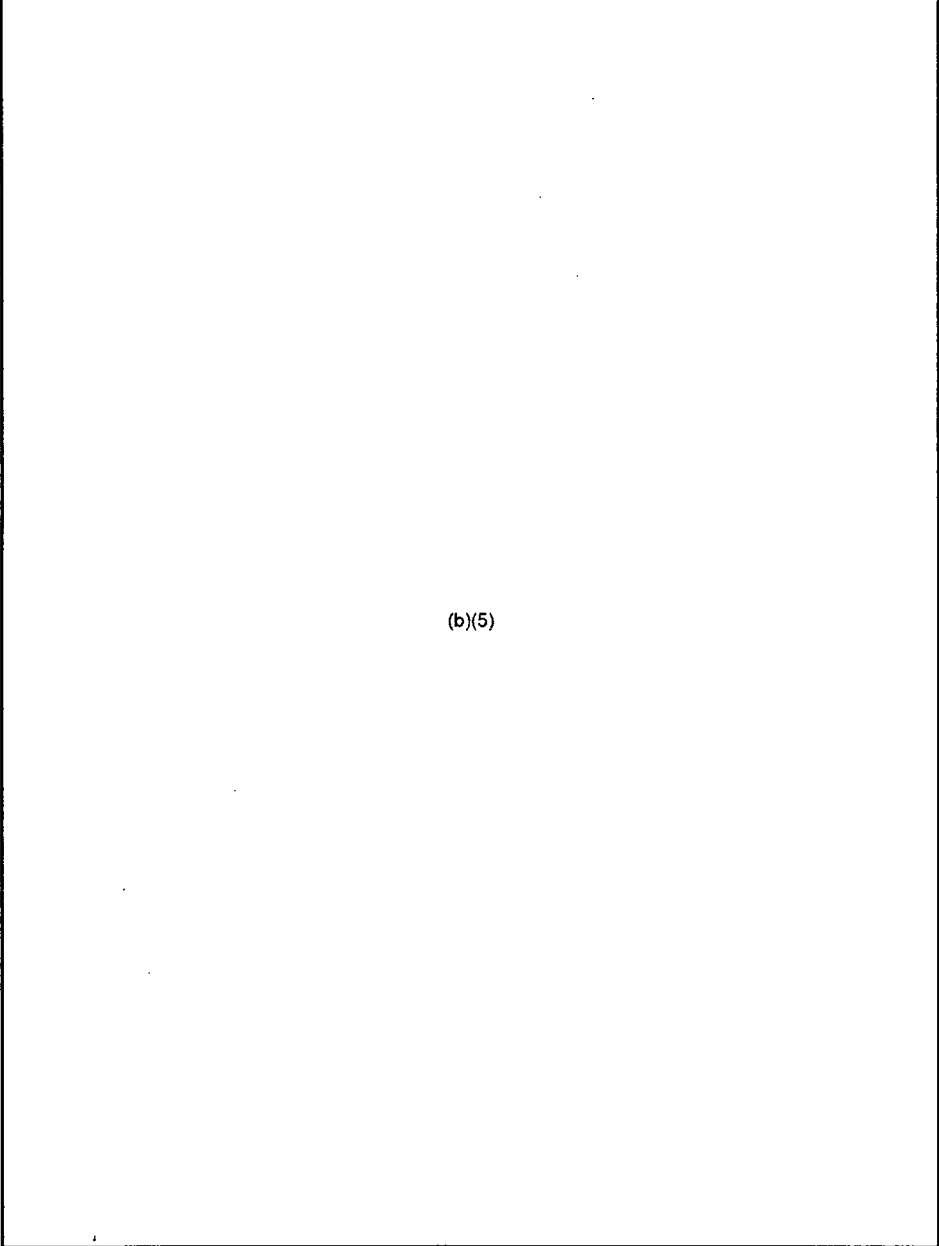


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6-170



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6-171

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6-172

(b)(5)

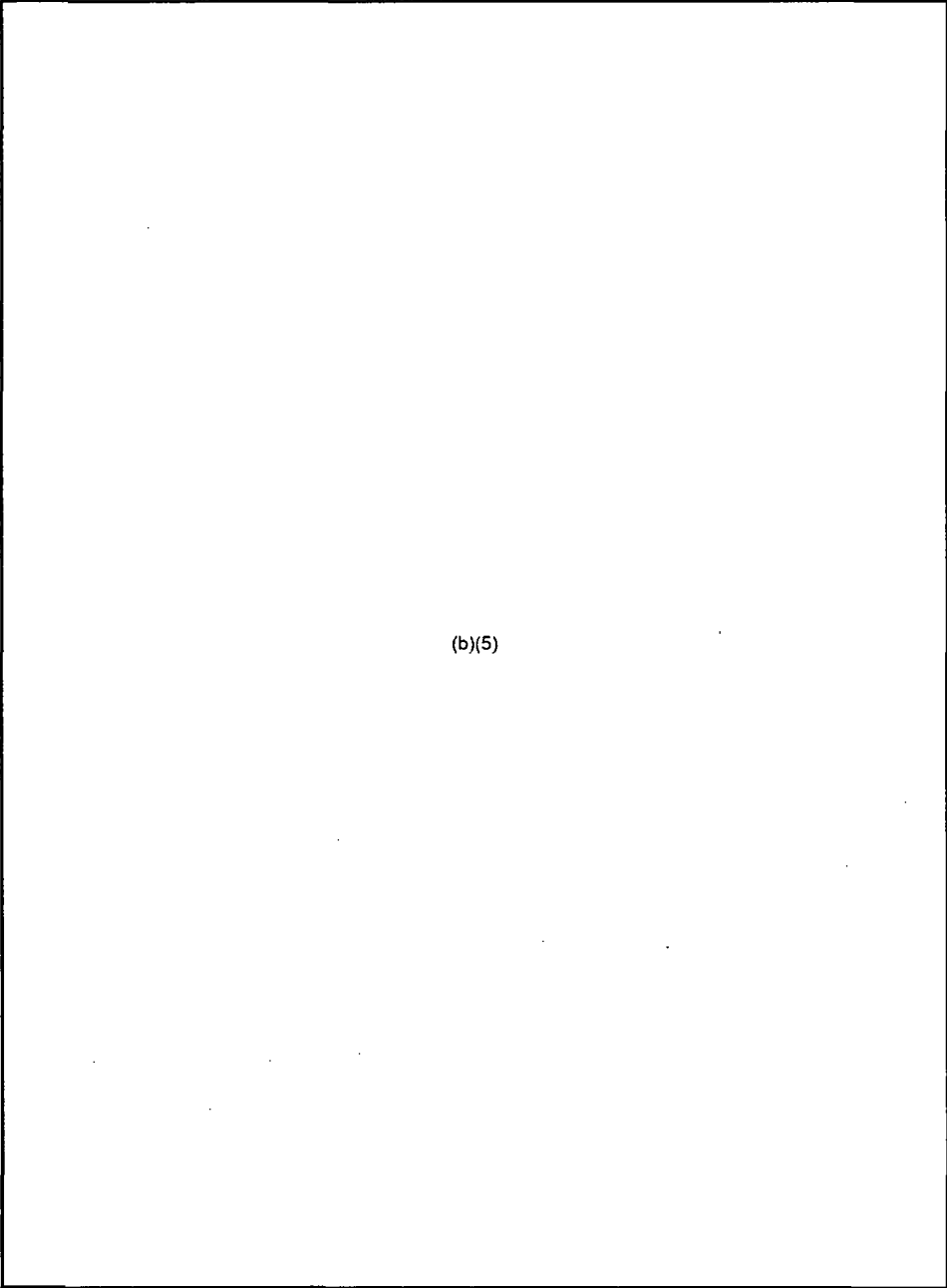
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6-174

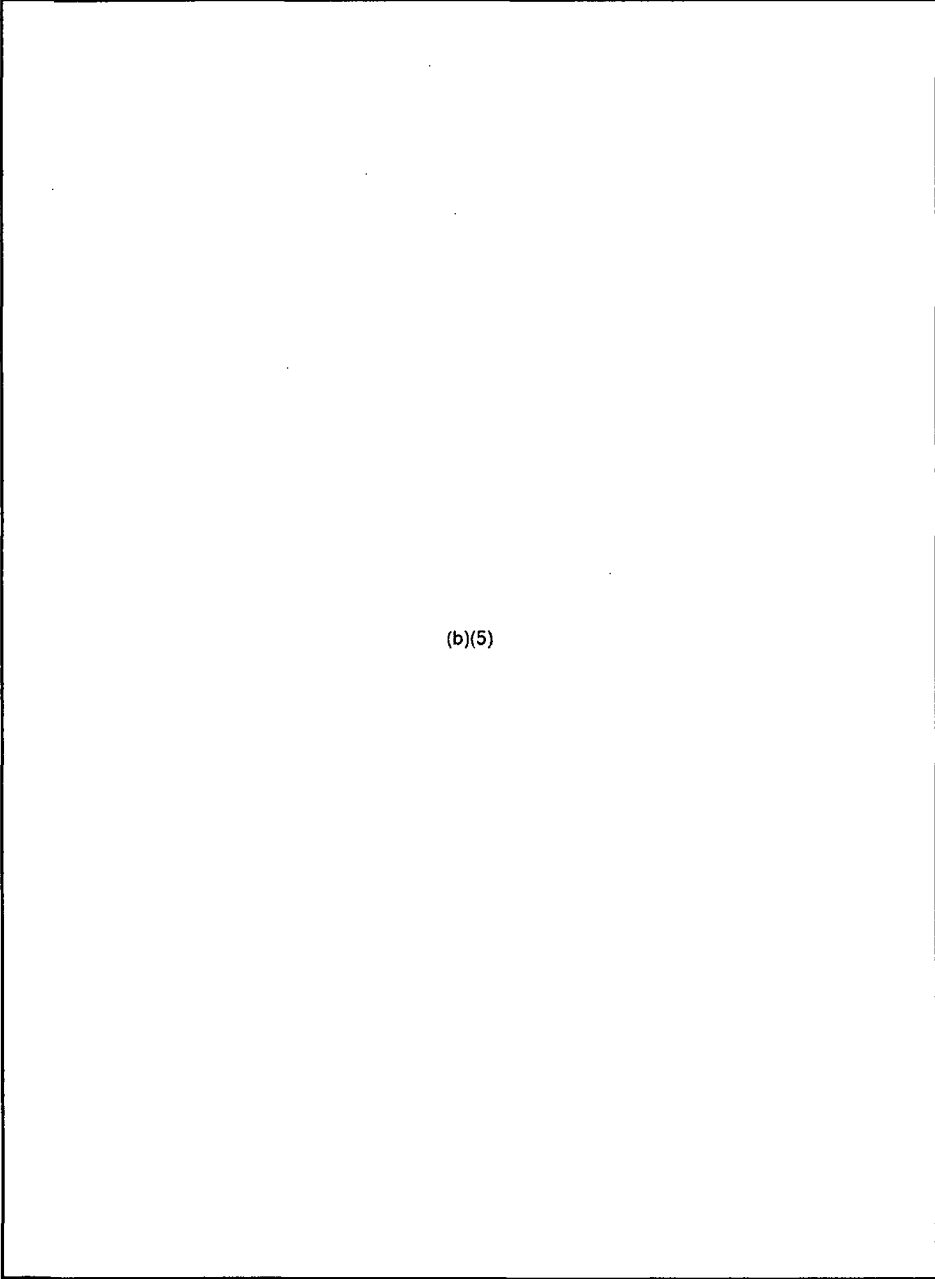
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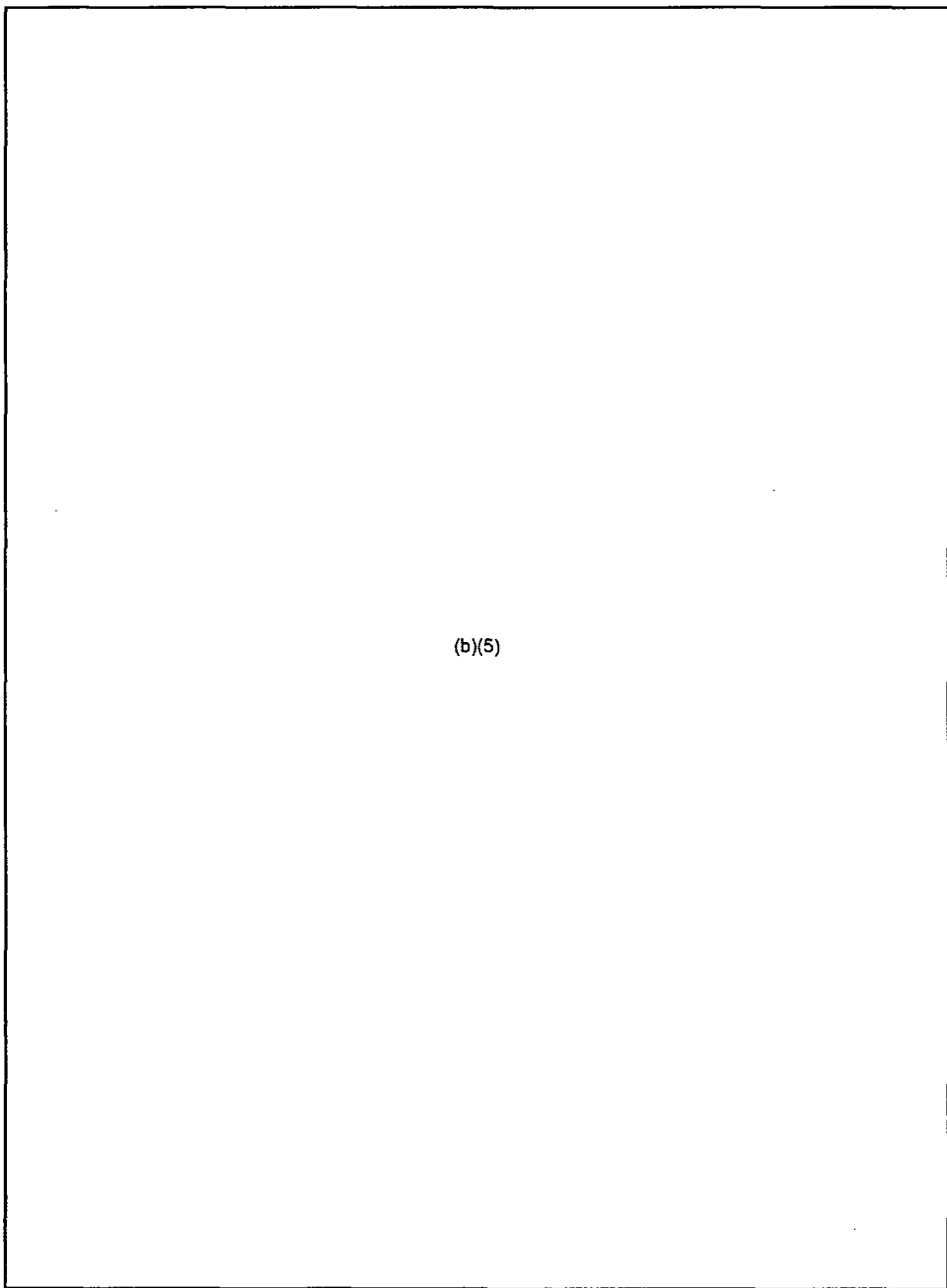


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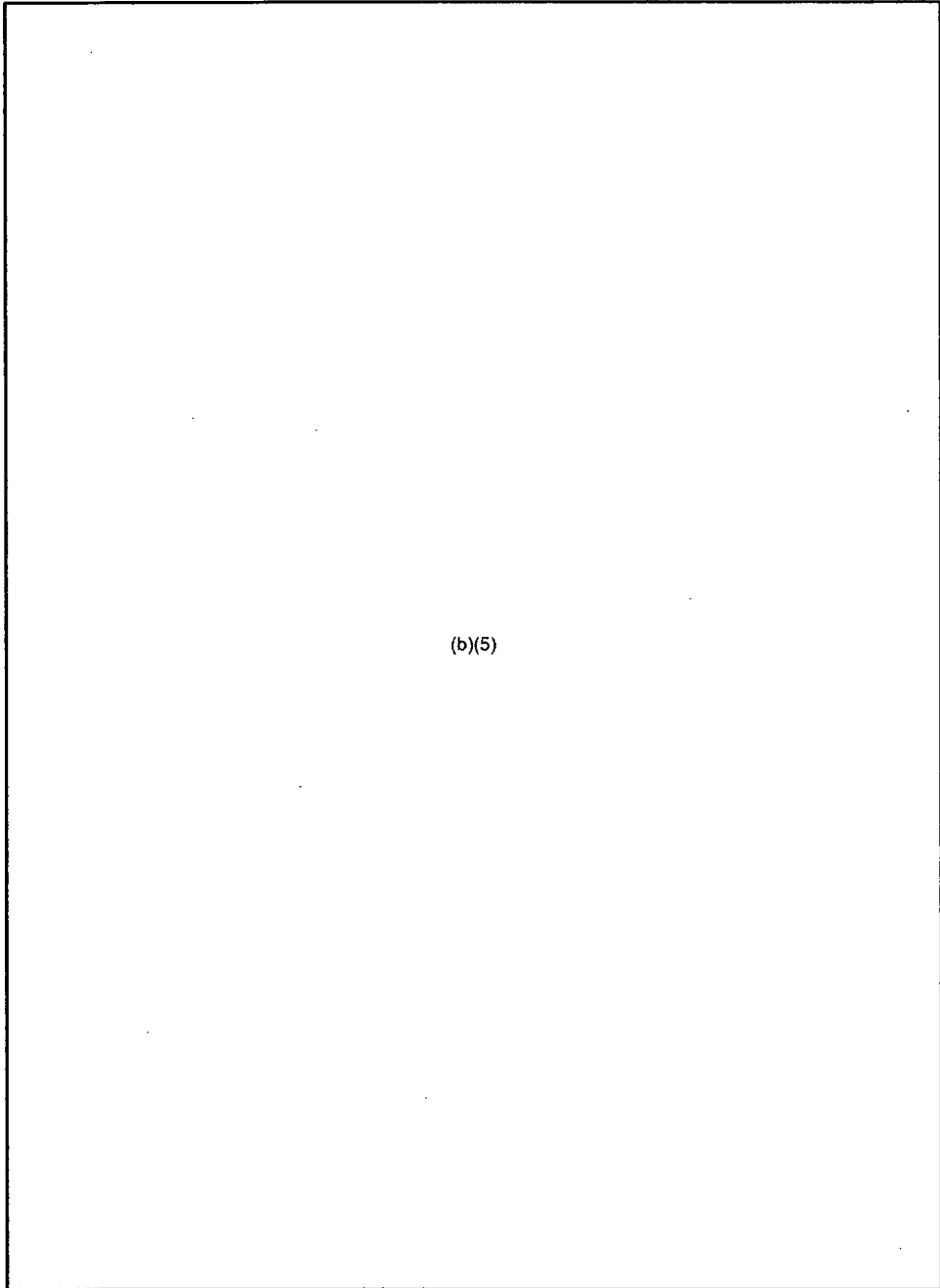


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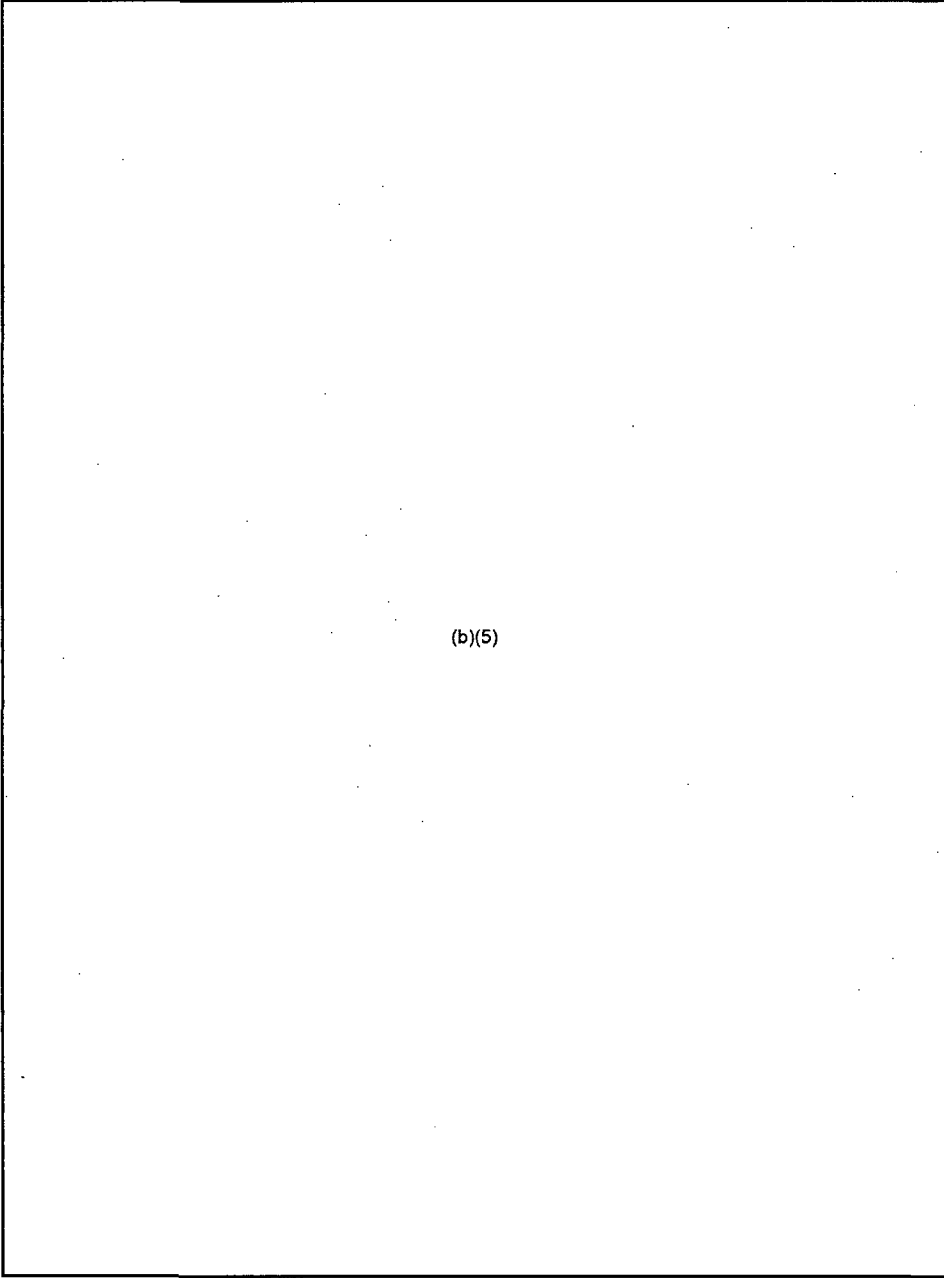


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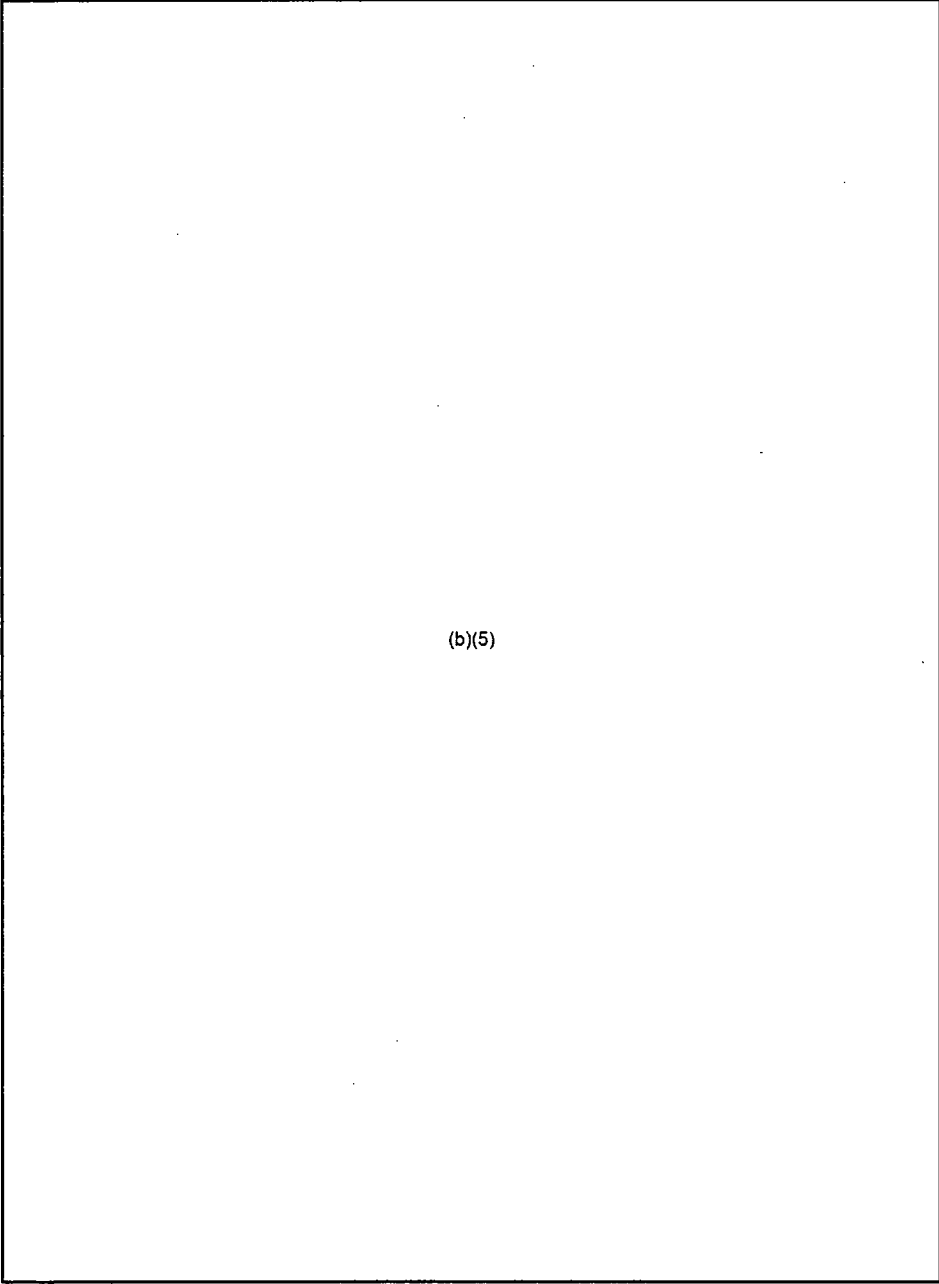
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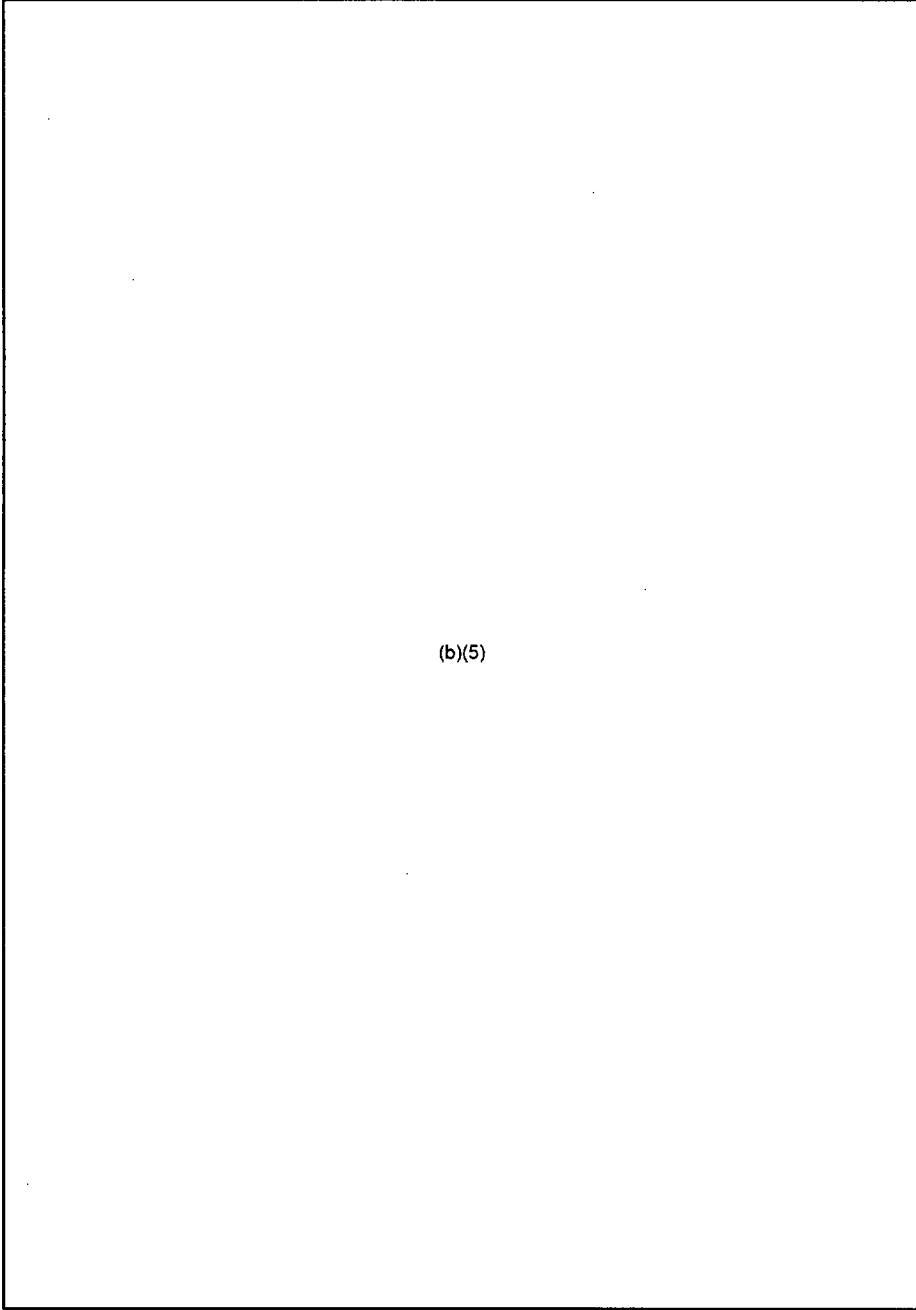


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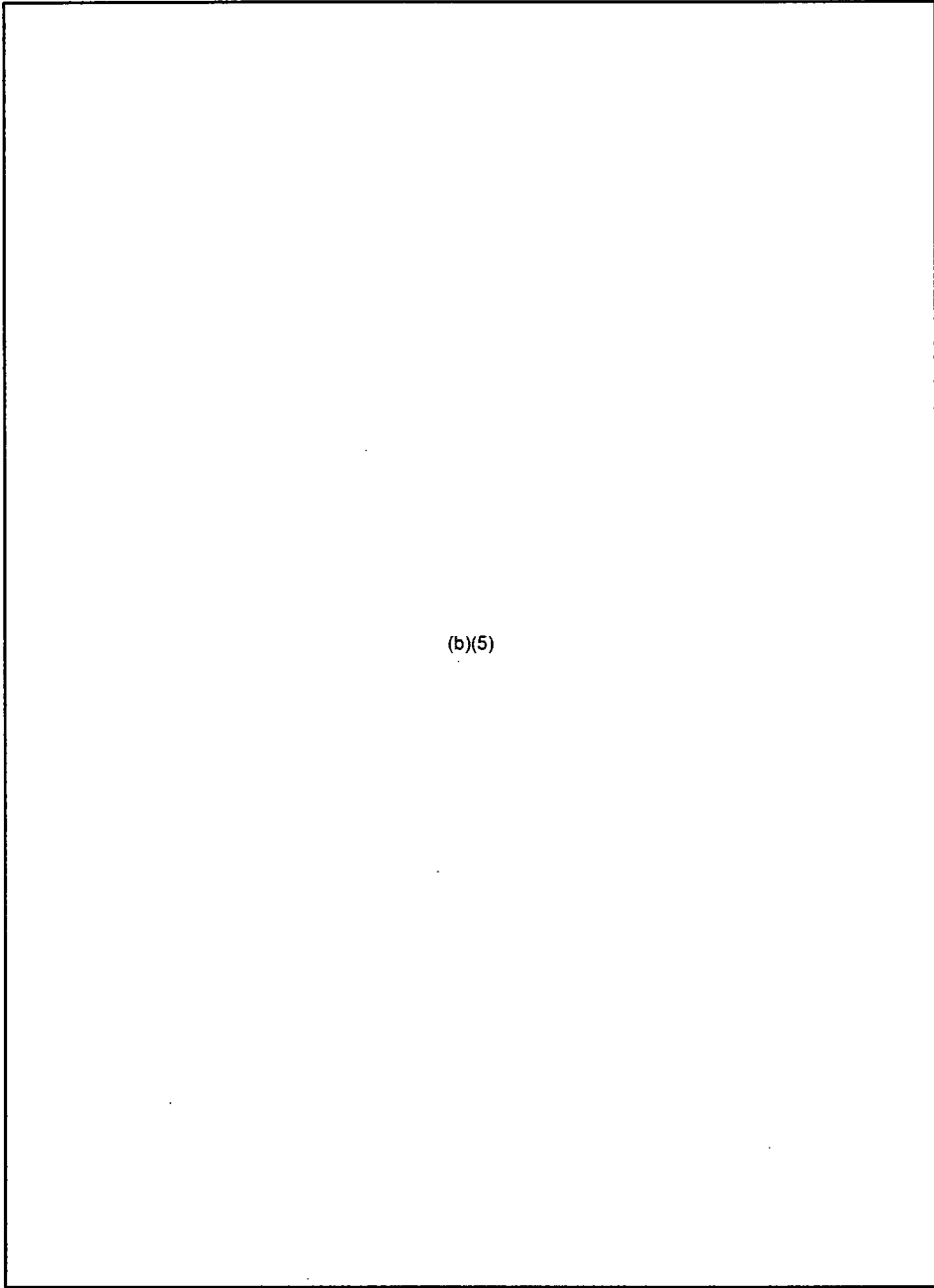
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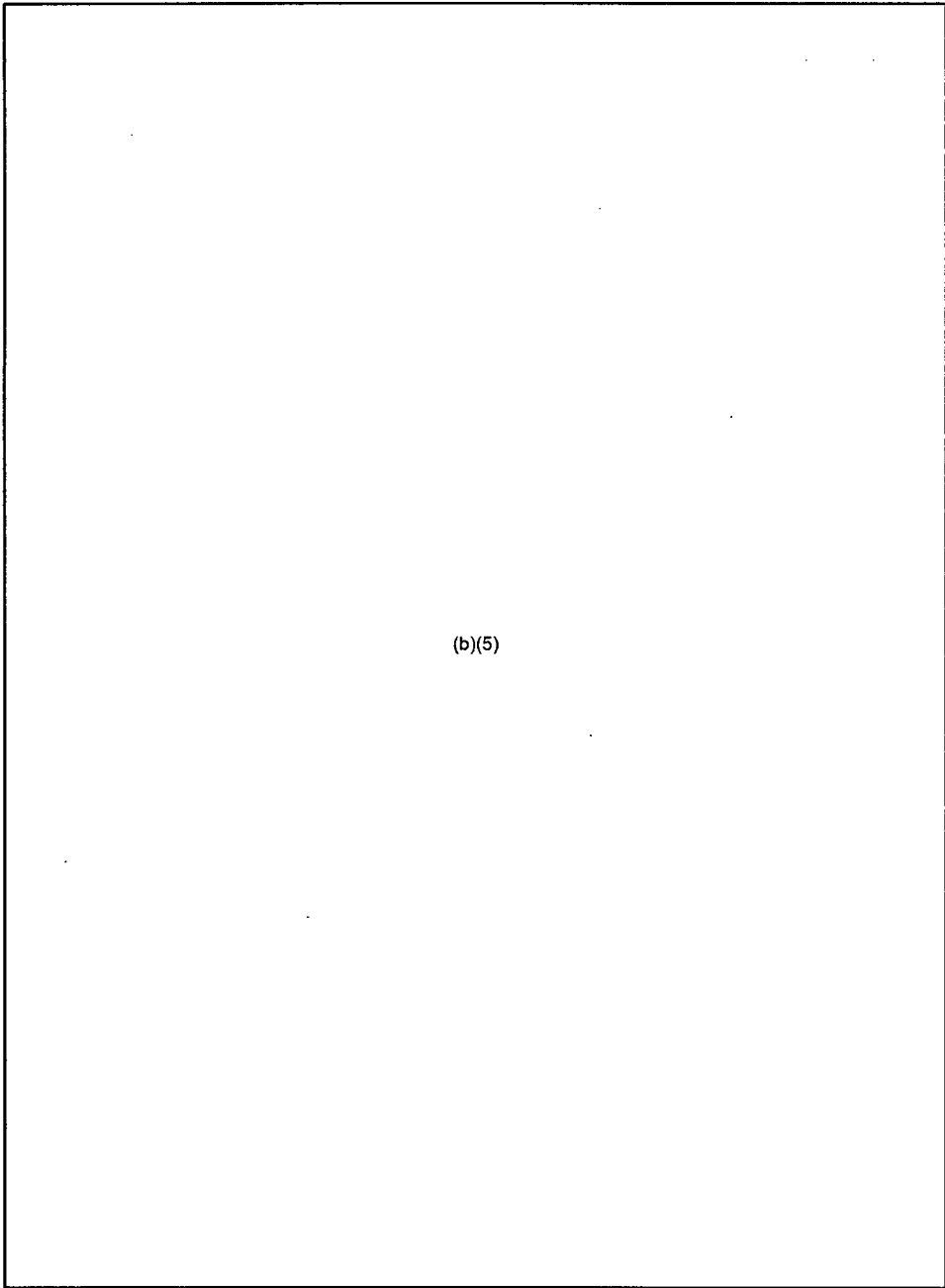
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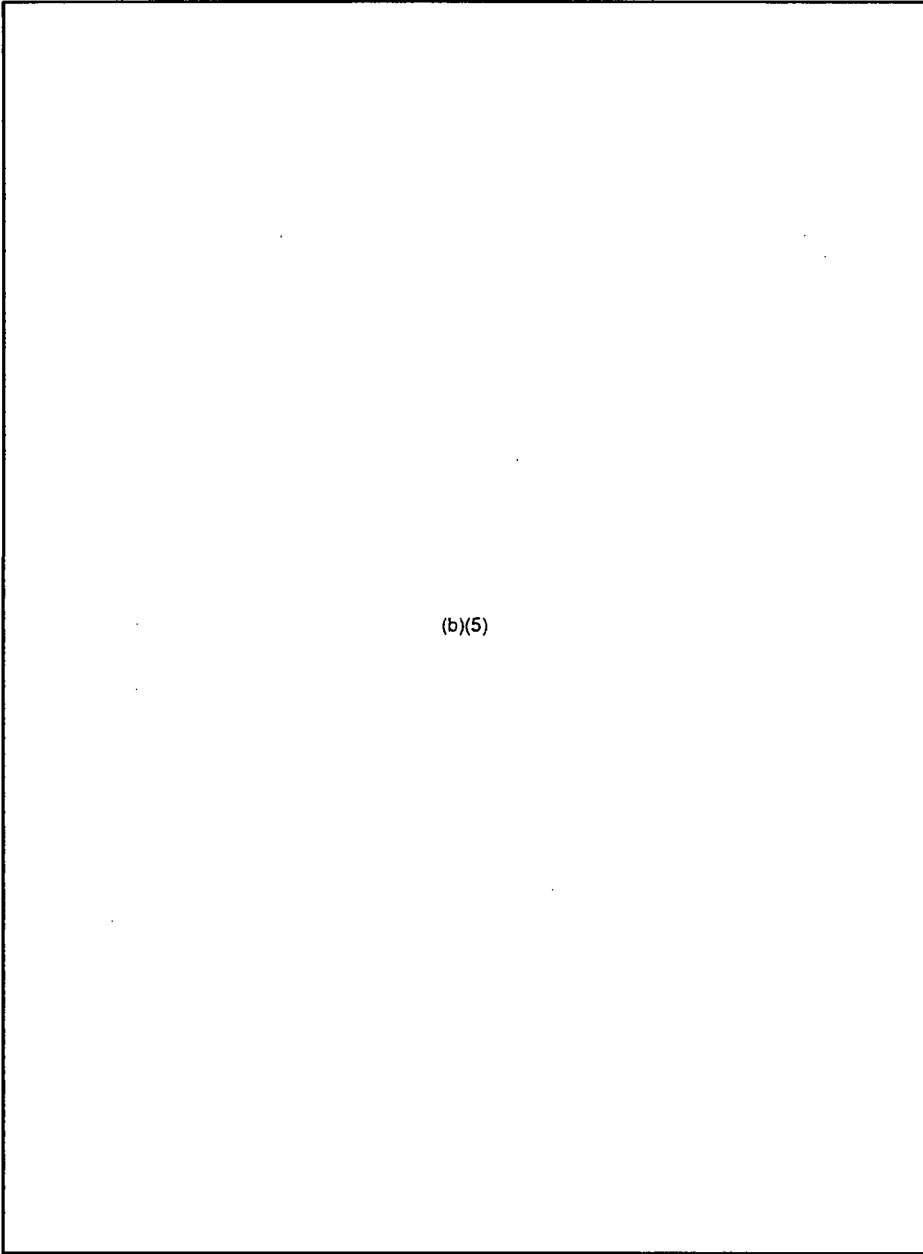
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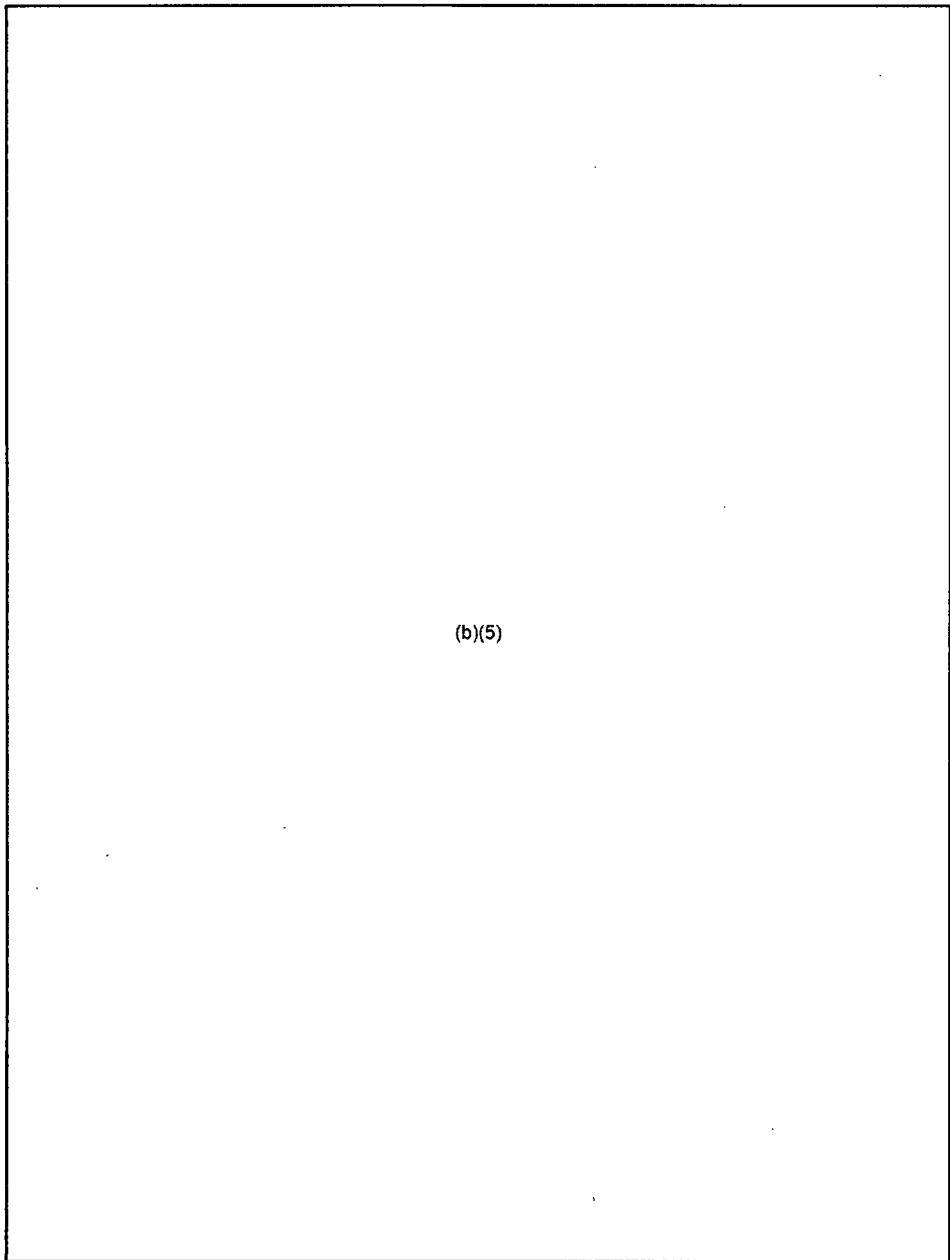
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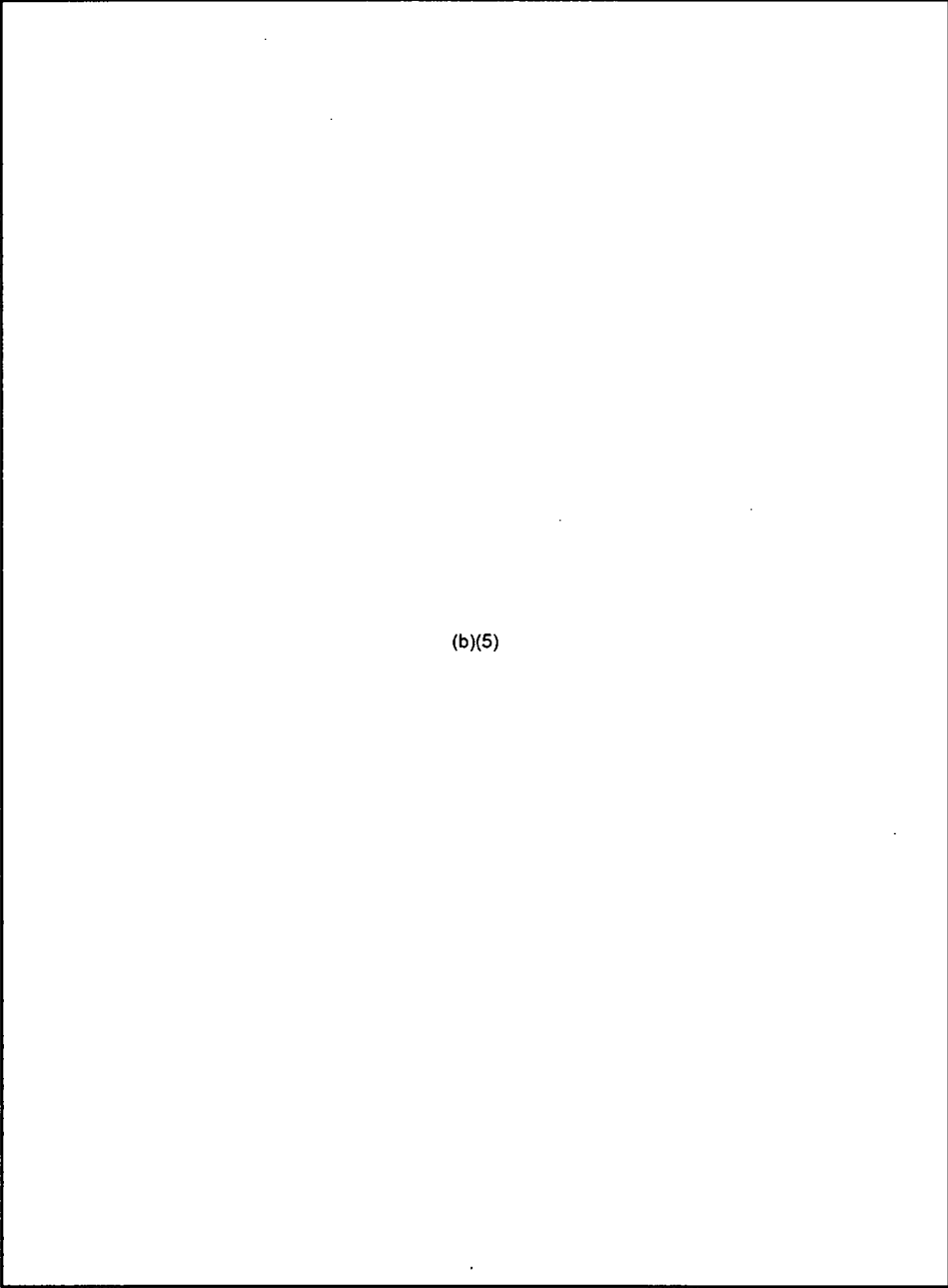
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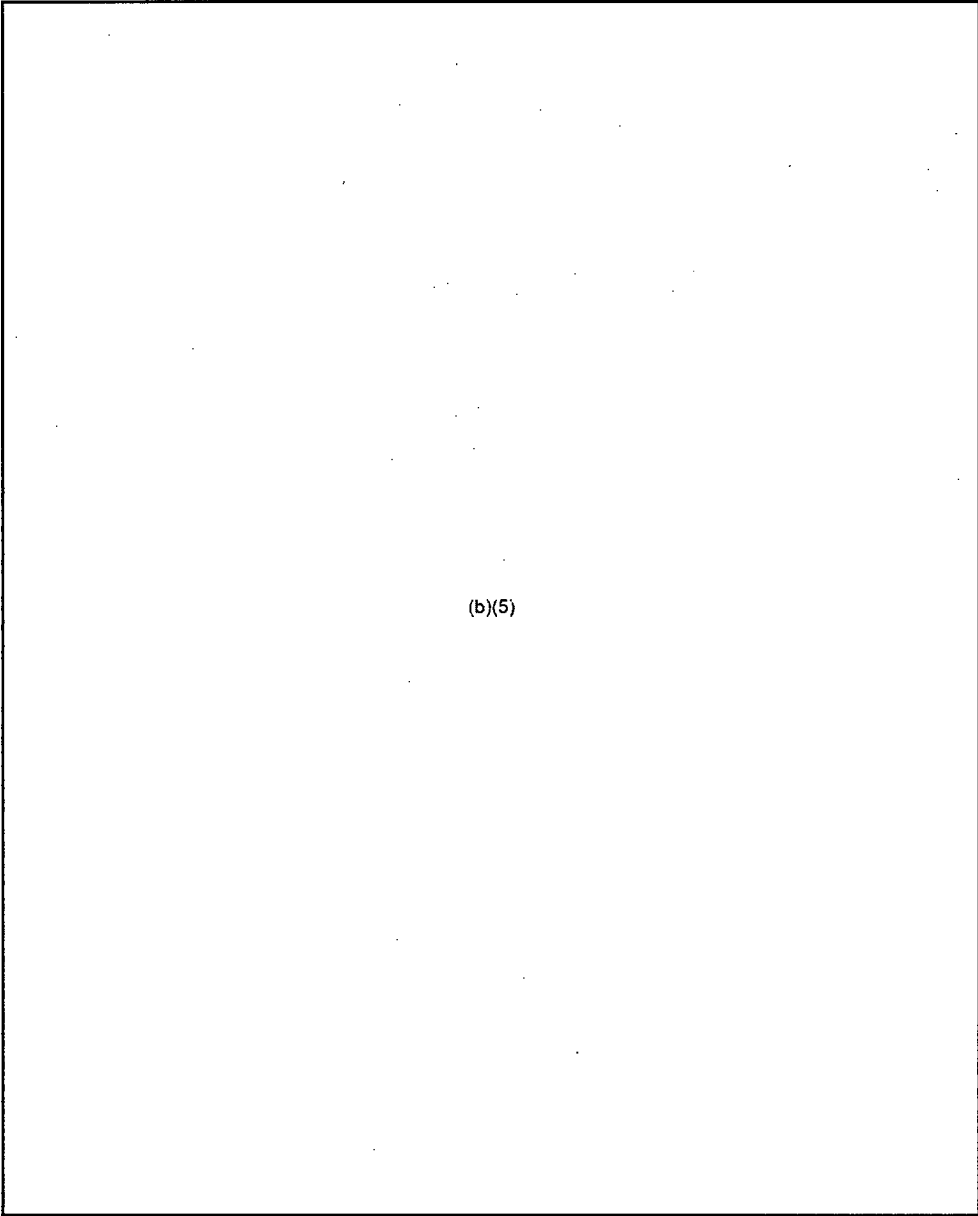


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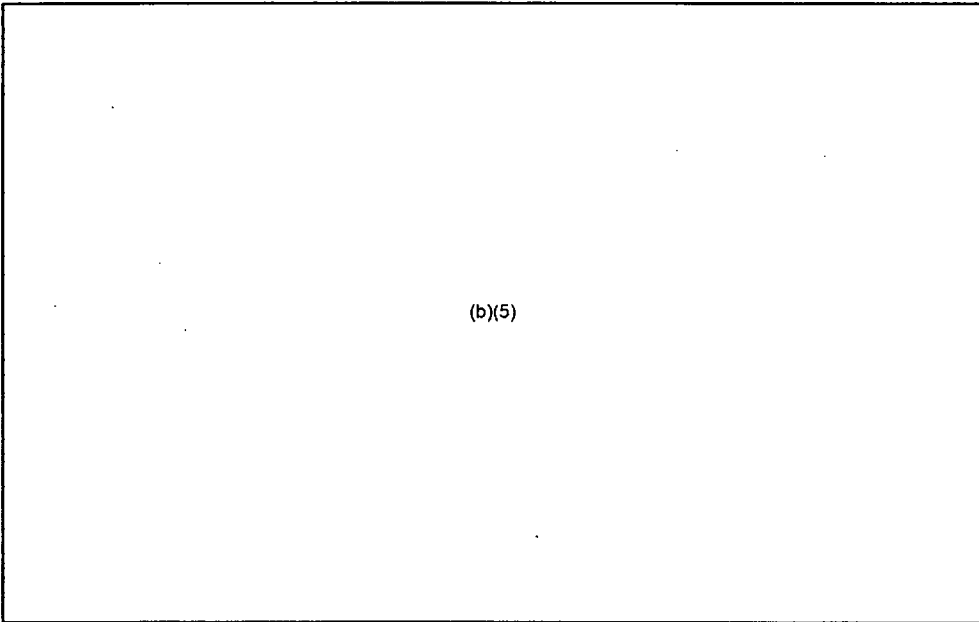
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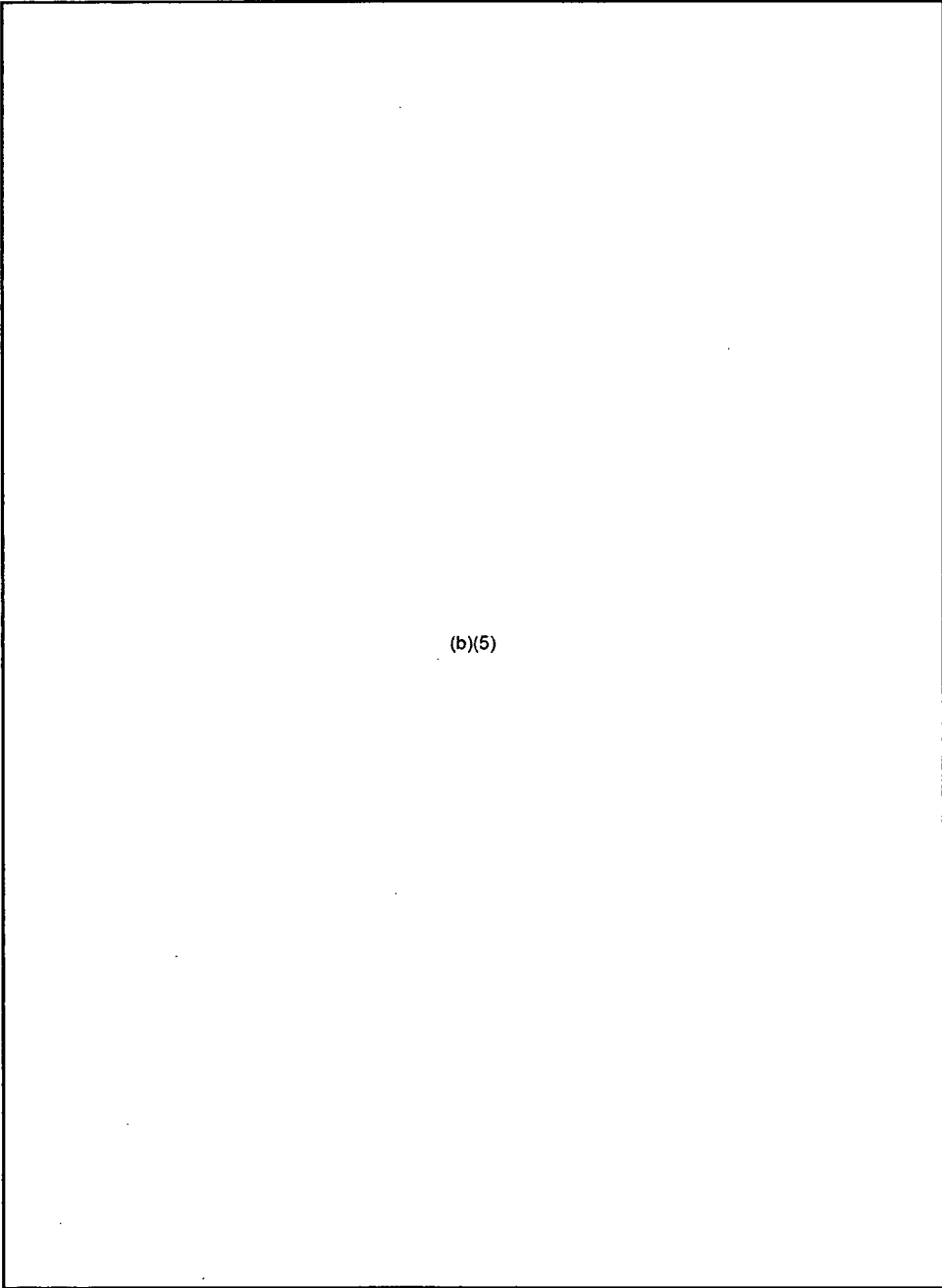
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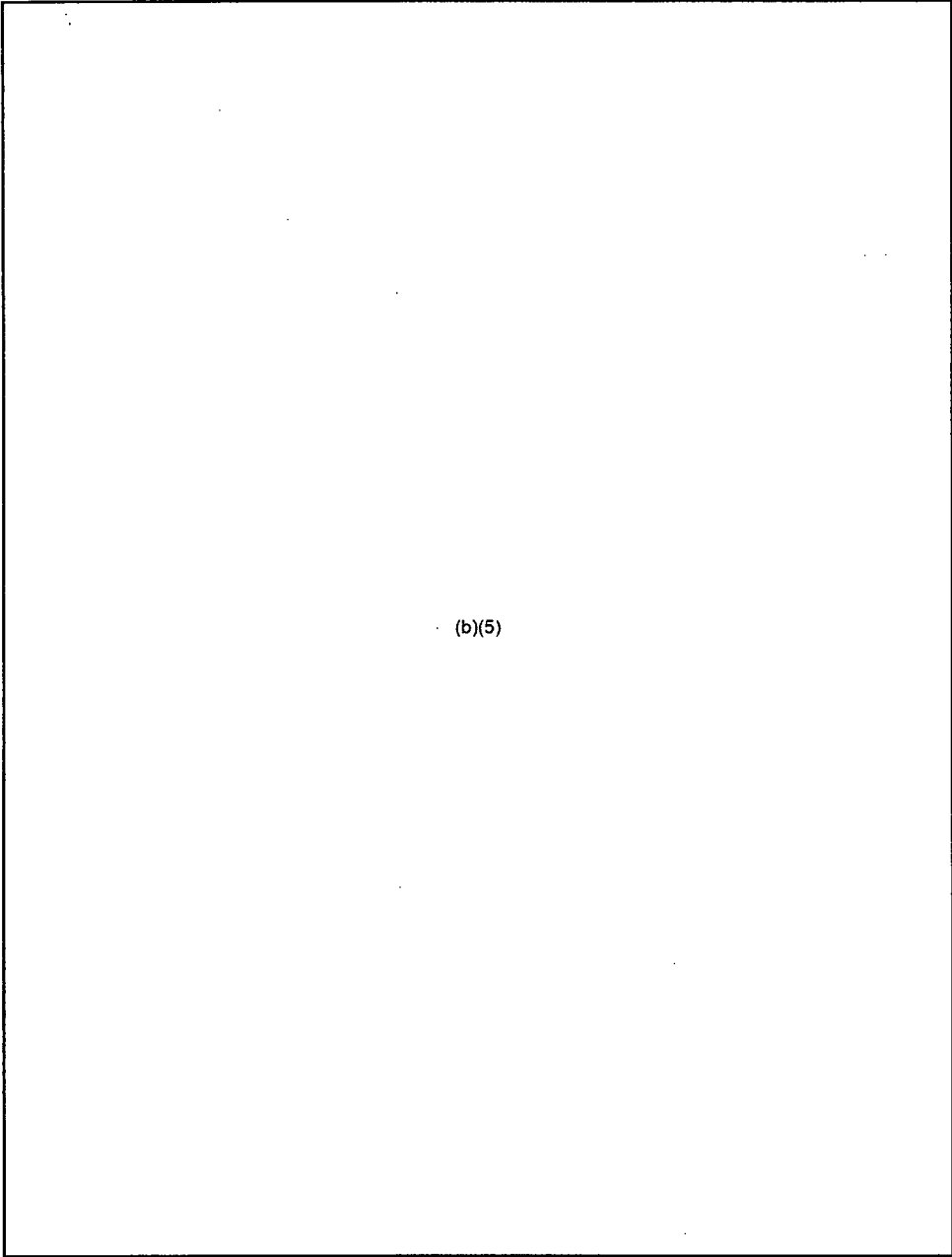


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6-190



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6-191

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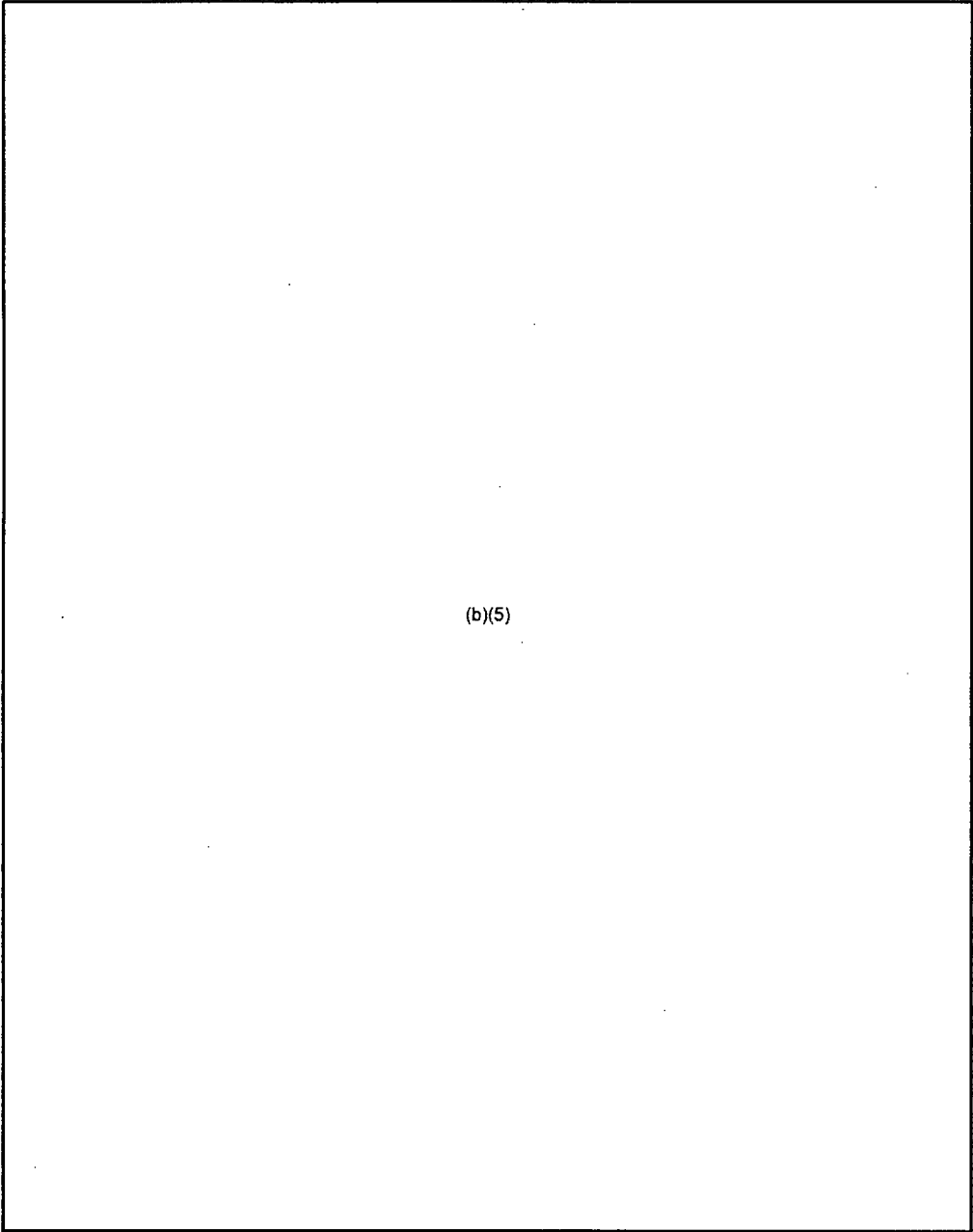
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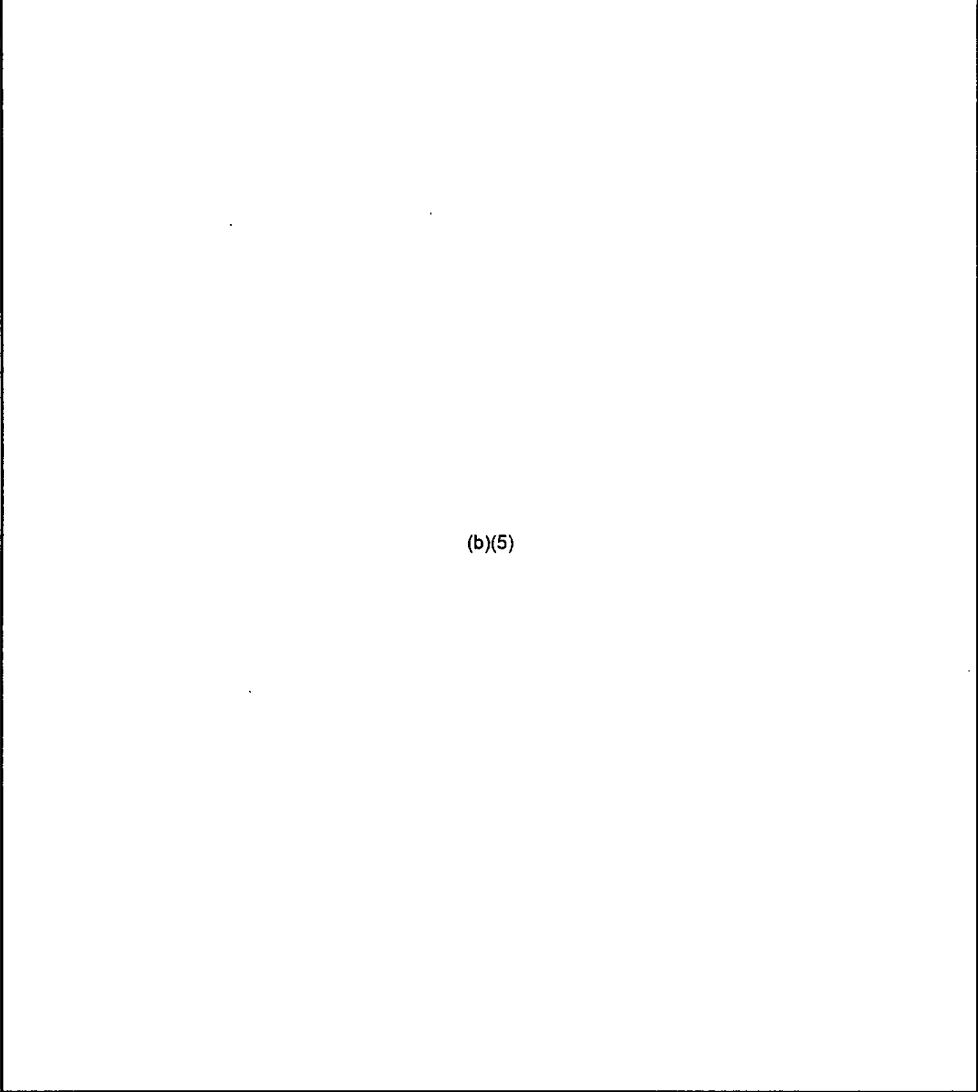
6-193

(b)(5)

6-194



(b)(5)



(b)(5)

(b)(5)

6-197

From: Jackson, Christopher
Sent: Friday, March 18, 2011 2:46 PM
To: Jackson, Christopher
Subject: FW: EPR 6.5 chapter day HVAC ITAAC OGC question

From: ODriscoll, James
Sent: Monday, March 14, 2011 9:22 PM
To: Carneal, Jason; Jackson, Christopher
Cc: McKirgan, John
Subject: RE: EPR 6.5 chapter day HVAC ITAAC OGC question

Jason

(b)(5)

From: Carneal, Jason
Sent: Monday, March 14, 2011 3:59 PM
To: ODriscoll, James; Jackson, Christopher
Cc: McKirgan, John
Subject: RE: EPR 6.5 chapter day HVAC ITAAC OGC question

Jim:

If we want to ask for an ITAAC, will we evaluate it in 6.5 or 14.3? Just wondering, since if it will be handled in the 14.3 review we can place a pointer in the ITAAC discussion.

I've seen it both ways in the SERs for other Chapters.

Thanks,

Jason

From: ODriscoll, James
Sent: Monday, March 14, 2011 2:57 PM
To: Carneal, Jason; Jackson, Christopher

1

Cc: McKirgan, John

Subject: EPR 6.5 chapter day HVAC ITAAC OGC question

Chris,

I think the SER paragraph under "summary of Application should be changed as follows to address Bob's comment:

(b)(5)

Thanks,
Jim

From: Conly, John
To: Aitken, Diane; Barrie, Ashley; Bell, Russ; Bird, Bobby; Borsh, Gina; Buschbaum, Denny; Bywater, Russell; Caldwell, Jan; Carver, Ronald; Certrec, Ciccio, Jeff; Clouser, Tim; Collins, Elmo; Conly, John; Cosentino, Carolyn; Degeyter, Brock; Evans, Todd; Figres, Rafael; Frantz, Steve; Freitag, Al; Hamzehee, Hossein; Hoshi, Masaya; Ishida, Mutsumi; Johnson, Michael; Kawanago, Shinji; Keithline, Kimberley; Kellenberger, Nick; Koenig, Allan; Kramer, John; Lucas, Mitch; Madden, Fred; Matthews, David; Matthews, Tim; McConachy, Bill; Monarque, Stephen; Moore, Bill; ComanchePeakCOL Resource; Onozuka, Masanori; Paulson, Keith; Plisco, Loren; Reible, Robert; Rund, Jon; Simmons, Jeff; Singal, Balwant; Sirirat, Nan; Sprengel, Ryan; Takacs, Michael; Tapia, Joe; Tindell, Brian; Turner, Bruce; Volkening, David; Vrahoretis, Susan; Williamson, Alicia; Willingham, Michael; Woodlan, Don
Cc: Hill, Craig
Subject: Three Submittals to the NRC
Date: Friday, March 18, 2011 2:52:36 PM
Attachments: TXNB-11015 RAI 133, 136 Supp.pdf
TXNB-11016 RAI 146, 167 Supp.pdf
TXNB-11018 RAI 020, 204, 205.pdf

Luminant has submitted the three attached letters to the NRC:

(b)(5)

If there are any questions regarding these submittals, please contact me or contact Don Woodlan (254-897-6887, Donald.Woodlan@luminant).

Thanks,

John J. Conly

COLA Project Manager
(254) 897-5256

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nan_sirirat@mnes-us.com
nicholas_kellenberger@mnes-us.com
ryan_sprengel@mnes-us.com
al_freitag@mnes-us.com
masaya_hoshi@mnes-us.com
rjb@nei.org
kak@nei.org
michael.takacs@nrc.gov
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michael.johnson@nrc.gov
David.Matthews@nrc.gov
Balwant.Singal@nrc.gov
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john.kramer@nrc.gov
Brian.Tindell@nrc.gov
Alicia.Williamson@nrc.gov
Elmo.Collins@nrc.gov
Loren.Plisco@nrc.com
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ComanchePeakCOL.Resource@nrc.gov
sfrantz@morganlewis.com
jrund@morganlewis.com
tmatthews@morganlewis.com
regina.borsh@dom.com
diane.aitken@dom.com

From: [Virgilio, Martin](#)
To: [Miller, Charles](#); [Grobe, Jack](#); [Holahan, Gary](#); nucfed@aol.com; [Sanfilippo, Nathan](#)
Cc: [Borchardt, Bill](#); [Weber, Michael](#); [Ash, Darren](#)
Subject: Today's Kick off Meeting
Date: Thursday, March 24, 2011 5:34:01 AM
Attachments: [Task Force Kick Off Meeting.docx](#)

All

Attached is a one pager I developed to help guide today's kick off meeting for Task Force being chartered to respond to the Tasking Memo on actions following the events in Japan.

Marty

Task Force Kick Off Meeting

Charter

Near Term Actions

- Establish a group dedicated to communications and coordination with national/international stakeholders
- Identify immediate actions needed
- Identify technical issues requiring additional review and priority (H M L)
- Prepare the 30 day quick look report and Commission Meeting briefing material

Longer Term Actions

Conduct a systematic lessons learned review of the event to refine the list of technical issues

Organize and charter working groups to address one or more technical issues

- SES Leads for each WG who would draw upon technical experts from the line as needed

Estimate resources and impacts on other planned work

Establish a Steering Committee responsible for

- Integration
- Direction and Decision Making;
- Formulation of Policy for Commission Consideration

Technical Issues

SBO duration and coping strategies,

50.54(hh)(2) hardware and strategies, execution of strategies (equipment location, environmental considerations, training),

External and internal flooding,

Combustible gas control

SAMG adequacy and execution of strategies

EP,

Seismic including GSI 199,

Tsunami, Hurricanes, Seismic Events

From: Buckberg, Perry

Sent: Monday, March 21, 2011 5:30 PM

To: Li, Chang; Pieringer, Paul; Chuang, Tze-Jer; Patterson, Malcolm; Roggenbrodt, William; Zhao, Jack; Le, Tuan; Grady, Anne-Marie; Chien, Nan; Jackson, Christopher; Strnisha, James; Scarbrough, Thomas

Subject: AP1000 Final SE Chapter 23 - Concurrence

Resent to include more cognizant staff...

Please review the attached marked-up version of Chapter 23 and concur/comment in reply by CoB **March 25, 2011**. The attached shows all of the changes made since the Advanced Final SE chapter was issued. **TAC RN1850**

Both this marked-up version and a clean version of AP1000 Final Safety Evaluation (FSE) draft Chapter 6 has been placed in the SharePoint (link is below).

The principal difference between the issued AFSE chapter and these draft FSE chapter is the insertion of standard CI closure language. Also, technical editing changes were made for internal consistency in wording. Any needed technical changes were already discussed/resolved with the appropriate technical staff before incorporation.

- o A chapter signature sheet will follow your concurrence for use with OGC, Division Directors and for our records.
- o If you have a question or need assistance, please contact me.

Thanks,

Perry Buckberg

Senior Project Manager

Office of New Reactors

AP1000 Projects Branch

x1383 T-07E31

The SharePoint folder (Design Certification Review - AP1000 Design / Project Documents / All AP1000 DCA Documents / Tool 25 FSE Chapters) is:

<http://epm.nrc.gov/NRCPWA/Design%20Certification%20Review%20-%20Westinghouse%20AP1000/Project%20Documents/Forms/Default.aspx?RootFolder=%2fNRCPWA%2fDesign%20Certification%20Review%20%2d%20Westinghouse%20AP1000%2fProject%20Documents%2fAll%20AP1000%20DCA%20Documents%2fTool%2025%20%2d%20FSE%20Chapters&FolderCTID=%26View=%7bDE1B422C%2dDFCA%2d4B68%2dA34D%2d2EF3460A463A%7d>

- AP1000 SharePoint - (Tool 25 - FSE Chapters)

- Chapters for Concurrence – clean
- Chapters for Concurrence – mark-ups

From: Miller, Eric

Sent: Monday, March 21, 2011 1:09 PM

To: Ashley, Clinton; Jensen, Walton; Jackson, Christopher; Drozd, Andrzej; Peng, Shie-Jeng; McKirgan, John

Subject: FW: Modeling Guidelines for CAP

Re-sending for use in our meeting today.

-Eric

From: Miller, Eric

Sent: Friday, March 18, 2011 12:12 PM

To: McKirgan, John

Cc: Ashley, Clinton; Jensen, Walton; Jackson, Christopher; Drozd, Andrzej; Peng, Shie-Jeng

Subject: Modeling Guidelines for CAP

John,

Attached you will find the revised modeling guidelines for CAP that I put together (the original is included as an Excel spreadsheet attachment in the meeting scheduler for Monday). I would like to send this to MHI to help them understand what we are looking for in this portion of the audit. Walt's comments have been taken into account with this revision. I look forward to discussion about this guide on Monday.

Thanks,
Eric

NPSH Methodology Assumptions used in approved NRC Staff Safety Evaluations

Model Options

Heat Transfer

(b)(5)

Fog and Mist Modeling

(b)(5)

Jet and Drop Breakup Model

(b)(5)

Drop-Liquid Phase Conversion

(b)(5)

Structural Heat Sinks

(b)(5)

Containment Spray

(b)(5)

Heat Exchangers

(b)(5)

Fan Coolers

(b)(5)

Interfacial Area

(b)(5)

Break Flow Flashing

(b)(5)

Mass and Energy Calculations

(b)(5)

Single Failure

(b)(5)

NPSH for non-design basis events assumptions

(b)(5)

From: Grady, Anne-Marie
Sent: Monday, March 21, 2011 4:46 PM
To: McKirgan, John
Cc: Jackson, Christopher
Subject: RE: AP1000 Final SE Chapter 23 - Concurrence

John,



Anne-Marie

From: McKirgan, John
Sent: Monday, March 21, 2011 10:43 AM
To: Jackson, Christopher; Grady, Anne-Marie
Cc: Wagage, Harry
Subject: FW: AP1000 Final SE Chapter 23 - Concurrence

Folks, Please look at your sections of the attached Ch 23 and give me a recommendation for concurrence or give me comments/edits as soon as possible. This is a short turn around. Thanks, John

Harry, your section is not in yet.

Thanks.

John

From: Buckberg, Perry
Sent: Monday, March 21, 2011 8:39 AM
To: Donoghue, Joseph; Terao, David; McKirgan, John; Segala, John; Lee, Samuel; Jackson, Terry; Shams, Mohamed; Jenkins, Ronaldo; Kowal, Mark
Cc: Hsii, Yi-Hsiung; Budzynski, John; Honcharik, John; Makar, Gregory; Ray, Neil; Downey, Steven; McKenna, Eileen; VanWert, Christopher; Forsaty, Fred; Ford, Tanya; Wagage, Harry; Drozd, Andrzej; Stubbs, Angelo; Hernandez, Raul; Wheeler, Larry; Zhang, Deanna; Chopra, Om; Patel, Pravin; Le, Hien; Tjader, Theodore; Chapman, Travis
Subject: AP1000 Final SE Chapter 23 - Concurrence

Branch Chiefs,

Please review the attached marked-up version of Chapter 23 and concur/comment in reply by CoB March 25, 2011. The attached shows all of the changes made since the Advanced Final SE chapter was issued.

Both this marked-up version and a clean version of AP1000 Final Safety Evaluation (FSE) draft Chapter 6 has been placed in the SharePoint (link is below).

(b)(5)

Thanks,

Perry Buckberg

Senior Project Manager
Office of New Reactors
AP1000 Projects Branch
x1383 T-07E31

The SharePoint folder (Design Certification Review - AP1000 Design / Project Documents / All AP1000 DCA Documents / Tool 25 FSE Chapters) is:

<http://epm.nrc.gov/NRCPWA/Design%20Certification%20Review%20-%20Westinghouse%20AP1000/Project%20Documents/Forms/Default.aspx?RootFolder=%2fNRCPWA%2fDesign%20Certification%20Review%20%2d%20Westinghouse%20AP1000%2fProject%20Documents%2fAll%20AP1000%20DCA%20Documents%2fTool%2025%20%2d%20FSE%20Chapters&FolderCTID=&View=%7bDE1B422C%2dDFCA%2d4B68%2dA34D%2d2EF3460A463A%7d>

- **AP1000 SharePoint** - (Tool 25 - FSE Chapters)
 - Chapters for Concurrence – clean
 - Chapters for Concurrence – mark-ups

From: Carneal, Jason
Sent: Monday, March 21, 2011 2:33 PM
To: ODriscoll, James; Jackson, Christopher
Subject: Reference to RG in Section 6.4 - followup action from Chapter Day.

Chris and Jim:

The one follow-on for SPCV from Friday's Chapter Day was providing the correct RG to reference in the following paragraph:

Type of Pressurization System and CRE Zone

(b)(5)

Have we determined which RG to reference here? Once we add this, we are done with the SPCV portion of Section 6.4.

Michelle will be giving input on her two actions from the meeting sometime today.

Thanks,

Jason

JASON CARNEAL

PROJECT MANAGER
U.S. NUCLEAR REGULATORY COMMISSION
NRO/DNRL/NARP (T-6J4)
301-415-3813

From: Grady, Anne-Marie
Sent: Tuesday, March 22, 2011 5:17 PM
To: McKirgan, John
Cc: Jackson, Christopher
Subject: RE: AP1000 Final SE Chapter 6 - Concurrence

John,
I reviewed ch 6.2.4, 6.2.5, and 6.2.6 SE, based on revision 17.

I have no comment on 6.2.5, Combustible Gas Control.

(b)(5)

These are my only comments.
Anne-Marie

From: McKirgan, John
Sent: Monday, March 21, 2011 3:29 PM
To: Jackson, Christopher; Grady, Anne-Marie
Subject: FW: AP1000 Final SE Chapter 6 - Concurrence

Chris. Anne-Marie.

Can you please review this SE and give me a recommendation for concurrence by 3/25?

PS Michelle has agreed to look at her stuff.

Thanks.

John

From: Buckberg, Perry
Sent: Friday, March 18, 2011 11:21 AM
To: Donoghue, Joseph; Terao, David; McKirgan, John

From: Carneal, Jason
Sent: Monday, March 21, 2011 5:38 PM
To: Jackson, Christopher
Subject: paragraph - normal operating pressures

(b)(5)

The paragraph with the highlighted range is provided above.

Thanks,

Jason

JASON CARNEAL
PROJECT MANAGER
U.S. NUCLEAR REGULATORY COMMISSION
NRO/DNRL/NARP (T-6J4)
301-415-3813

From: Grady, Anne-Marie
Sent: Monday, March 21, 2011 2:07 PM
To: Jackson, Christopher
Subject: FW: AGrady 6.2.5 and 6.2.6 chapter day markups

Chris,

(b)(5)

Anne-Marie

From: Grady, Anne-Marie
Sent: Friday, March 18, 2011 11:27 AM
To: Carneal, Jason
Subject: AGrady 6.2.5 and 6.2.6 chapter day markups

Jason,
Here are my markups.
Anne-Marie

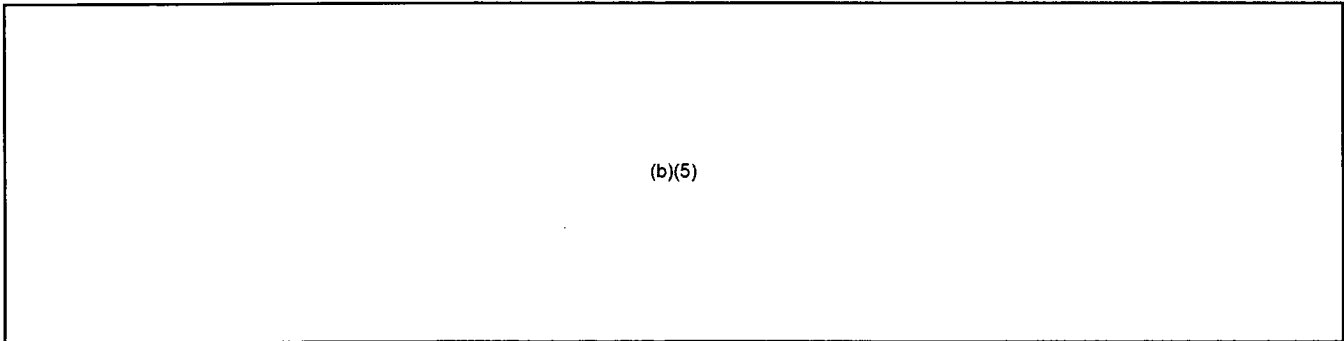
Anne-Marie Grady, PE
Reactor Systems Engineer
US Nuclear Regulatory Commission
NRO/DSRA/SPCV
301-415-7645
Anne-Marie.Grady@nrc.gov

Cc: Hsui, Yi-Hsiung; Budzynski, John; Honcharik, John; Makar, Gregory; Ray, Neil; Downey, Steven; McKenna, Eileen; VanWert, Christopher; Forsaty, Fred; Ford, Tanya; Wagage, Harry; Drozd, Andrzej
Subject: AP1000 Final SE Chapter 6 - Concurrence

Branch Chiefs,

Please review the attached marked-up version of Chapter 6 and concur/comment in reply by CoB **March 25, 2011**. The attached shows all of the changes made since the Advanced Final SE chapter was issued. In addition, please see the tech editor's specific comments/questions 1 thru 6 below and address separately in an e-mail to me only if needed.

Both this marked-up version and a clean version of AP1000 Final Safety Evaluation (FSE) draft Chapter 6 has been placed in the SharePoint (link is below).



Thanks,

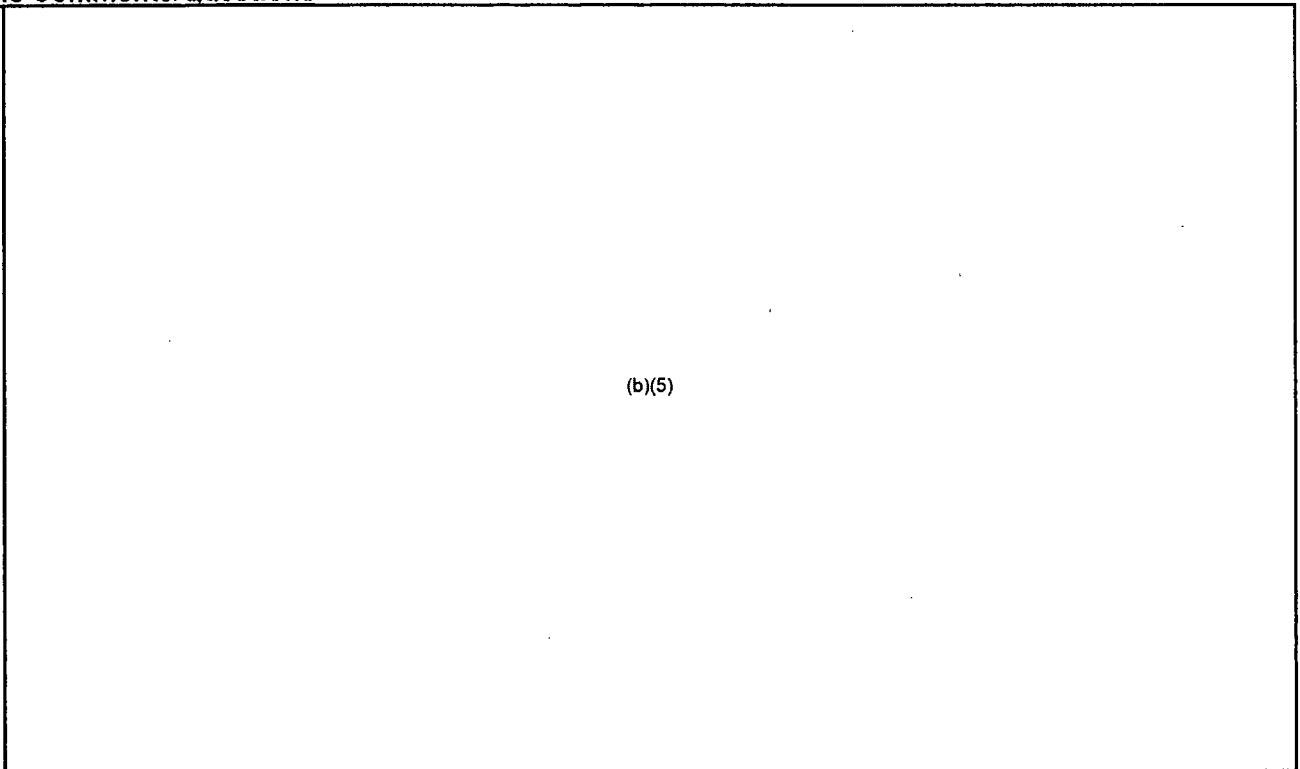
Perry Buckberg

Senior Project Manager
Office of New Reactors
AP1000 Projects Branch
x1383 T-07E31

Specific Comments/Questions

1)

2)



3)

(b)(5)

Please confirm the revised statement covers the authors intent. The proposed edits add the language used in the RAI response.

4)

(b)(5)

5)

(b)(5)

6)

(b)(5)

The SharePoint folder (Design Certification Review - AP1000 Design / Project Documents / All AP1000 DCA Documents / Tool 25 FSE Chapters) is:
<http://epm.nrc.gov/NRCPWA/Design%20Certification%20Review%20-%20Westinghouse%20AP1000/Project%20Documents/Forms/Default.aspx?RootFolder=%2fNRCPWA%2fDes>

ign%20Certification%20Review%20%2d%20Westinghouse%20AP1000%2fProject%20Documents%2fAll%20
AP1000%20DCA%20Documents%2fTool%2025%20%2d%20FSE%20Chapters&FolderCTID=&View=%7bDE
1B422C%2dDFCA%2d4B68%2dA34D%2d2EF3460A463A%7d

- **AP1000 SharePoint** - (Tool 25 - FSE Chapters)
 - Chapters for Concurrence – clean
 - Chapters for Concurrence – mark-ups

From: Flanders, Scott
To: Lutchenkov, Dimitri
Cc: Quinn, Laura; Fetter, Allen; Gibson, Gregory T
Subject: RE: Dropin
Date: Tuesday, March 22, 2011 12:13:00 PM

(b)(5)

Scott

From: Lutchenkov, Dimitri [mailto:dimitri.lutchenkov@unistarnuclear.com]
Sent: Tuesday, March 22, 2011 10:03 AM
To: Flanders, Scott
Cc: Quinn, Laura; Fetter, Allen; Gibson, Gregory T
Subject: Re: Dropin

(b)(5)

Dimitri Lutchenkov
Director, Environmental Affairs
UniStar Nuclear Energy

Sent from my iPhone

On Mar 22, 2011, at 9:56 AM, "Flanders, Scott" <Scott.Flanders@nrc.gov> wrote:

I am not sure this was delivered to you, so I am forwarding it to be sure.

Scott

From: Flanders, Scott
Sent: Tuesday, March 22, 2011 9:53 AM
To: 'dimitri.lutchenkov@unistarnuclear.com'
Cc: Quinn, Laura; Fetter, Allen; Chokshi, Nilesh
Subject: Dropin

(b)(5)

Scott

>>> This e-mail and any attachments are confidential, may contain legal, professional or other privileged information, and are intended solely for the addressee. If you are not the intended recipient, do not use the information in this e-mail in any way, delete this e-mail and notify the sender. CEG-IP2

From: Sweeney, Beverly
To: Flanders, Scott; Chokshi, Niles
Cc: Lauren, Carolyn
Subject: Staffing Plan
Date: Tuesday, March 22, 2011 11:05:34 AM

Scott/Niles,

(b)(5)

Thanks!

Bev

From: Mayfield, Michael
To: Ader, Charles; Bergman, Thomas; EATS Resource; Flanders, Scott; Gusack, Barbara; Matthews, David; Lappin, Bob; Dudes, Laura
Subject: RE: Weekly Lappin/NRO Division Directors Meeting, Incident# 505572
Date: Tuesday, March 22, 2011 11:54:31 AM

Works for me

From: Ader, Charles
Sent: Tuesday, March 22, 2011 11:47 AM
To: Bergman, Thomas; EATS Resource; Flanders, Scott; Gusack, Barbara; Matthews, David; Mayfield, Michael; Lappin, Bob; Dudes, Laura
Subject: RE: Weekly Lappin/NRO Division Directors Meeting, Incident# 505572

Having heard no one suggesting we hold the forum, I consider it cancelled.

From: Bergman, Thomas
Sent: Monday, March 21, 2011 3:41 PM
To: Ader, Charles; EATS Resource; Flanders, Scott; Gusack, Barbara; Matthews, David; Mayfield, Michael; Lappin, Bob; Dudes, Laura
Subject: Re: Weekly Lappin/NRO Division Directors Meeting, Incident# 505572

Agree
Thomas A. Bergman
Director, Division of Engineering
Office of New Reactors
301-415-7192 (O)

(b)(6)	(C)
--------	-----

From: Ader, Charles
To: EATS Resource; Bergman, Thomas; Flanders, Scott; Gusack, Barbara; Matthews, David; Mayfield, Michael; Lappin, Bob; Dudes, Laura
Sent: Mon Mar 21 13:47:47 2011
Subject: RE: Weekly Lappin/NRO Division Directors Meeting, Incident# 505572

Given that the NRO All Hands meeting starts at 2 pm, I vote that we cancel the forum for this week.

-----Original Appointment-----

From: EATS Resource
Sent: Thursday, March 10, 2011 12:49 PM
To: Bergman, Thomas; Ader, Charles; Flanders, Scott; Gusack, Barbara; Matthews, David; Mayfield, Michael; Tracy, Glenn; Lappin, Bob
Cc: Dudes, Laura; Dixon-Herrity, Jennifer
Subject: Weekly Lappin/NRO Division Directors Meeting, Incident# 505572
When: Occurs every Wednesday effective 03/02/2011 until 03/31/2011 from 1:00 PM to 2:30 PM (GMT-05:00) Eastern Time (US & Canada).
Where: TBD

New Incident # 505572 required for metric reporting purposes for each month.

Weekly meeting between Bob Lappin and NRO Division Directors every Wednesday from 1 to 2:30 pm

From: [Lauron, Carolyn](#)
To: [Williams, Donna](#)
Cc: [Martin, Karnisha](#); [Flanders, Scott](#); [Chokshi, Niles](#); [Jones, Henry](#); [Seber, Dogan](#)
Subject: Status: DSER Presentation for NRO All Hands
Date: Tuesday, March 22, 2011 11:03:14 AM

Hi –

Karnisha Martin will be sending you the PowerPoint presentation file shortly after lunch.

The presentation is as follows:

- Introduction and Overview – Dr. Niles Chokshi
- Earthquakes and Nuclear Power Plants – Dr. Dogan Seber
- Tsunami Hazards – Dr. Henry Jones

Please let me know if you need more information.

Thanks,
Carolyn
2736

From: Holahan, Patricia
To: Blair, Tina; Lubinski, John; Flanders, Scott; Gusack, Barbara; Ader, Charles; Bower, Phyllis; Brown, Milton; Hiland, Patrick; Scott, Catherine; Uhle, Jennifer
Subject: RE: REMINDER: OPM INTERVIEW (Headquarters Managers)
Date: Tuesday, March 22, 2011 12:27:08 PM

This conflicts with the SES Executive Development Seminar and also several managers are tied up in the Op Center.

-----Original Appointment-----

From: Blair, Tina
Sent: Tuesday, March 22, 2011 10:34 AM
To: Lubinski, John; Flanders, Scott; Gusack, Barbara; Ader, Charles; Bower, Phyllis; Brown, Milton; Hiland, Patrick; Holahan, Patricia; Scott, Catherine; Uhle, Jennifer
Subject: FW: REMINDER: OPM INTERVIEW (Headquarters Managers)
When: Wednesday, March 23, 2011 1:30 PM-3:00 PM (GMT-05:00) Eastern Time (US & Canada).
Where: N/A - Teleconference Bridge Line

Reminder – OPM Interview Teleconference tomorrow.

-----Original Appointment-----

From: Blair, Tina
Sent: Tuesday, March 08, 2011 1:21 PM
To: Blair, Tina; Lubinski, John; Tracy, Glenn; Flanders, Scott; Bergman, Thomas; Gusack, Barbara; Ader, Charles; Bower, Phyllis; Brown, Milton; Hiland, Patrick; Holahan, Patricia; McMillan, Joseph; Scott, Catherine; Uhle, Jennifer
Cc: Gartman, Michael; Ash, Darren; Garland, Stephanie; Dyer, Jim
Subject: OPM INTERVIEW REQUEST (Headquarters Managers)
When: Wednesday, March 23, 2011 1:30 PM-3:00 PM (GMT-05:00) Eastern Time (US & Canada).
Where: N/A - Teleconference Bridge Line

<< File: NRC Managers Interview Guide.doc >>

Dear Managers:

You have been selected at random by the Office of Personnel Management (OPM) to participate in a group interview as part of an OPM audit of NRC's human resources program. OPM has provided us with advance copies of the interview questions (see attached). The interview has been scheduled for Wednesday March 23rd from 1:30 pm – 3:00 pm Eastern, and it will be conducted via a teleconference bridge line. **The Toll Free Number to call is 1-866-753-1184, and the participant pass code is** (b)(6) **We ask for you to make your best effort to participate, but realize not everyone will be available.**

If you have any questions/concerns please contact Tina Blair 301-415-0556 or Michael Gartman 301-415-7693.

Thank you for your assistance,

Tina Blair

Human Resources Specialist

U.S. Nuclear Regulatory Commission

Phone: 301-415-0556

Fax: 301-415-3818

E-Mail: Tina.Blair@nrc.gov

Mail Stop: 03-E17A

From: Zalcman, Barry
To: Garrett, Bobi
Cc: Flanders, Scott; Clayton, Brent; Cook, Christopher; Chokshi, Niles
Subject: Thank You
Date: Tuesday, March 22, 2011 4:33:51 PM

Bob-

On behalf of Scott, Brent, Chris, and myself, I just wanted to take a moment to thank you and your team for your hospitality last week. It is always refreshing for us to see the best of the Federal government's efforts to find ways to further improve the quality of life that we enjoy in America. NREL is truly a National asset and we look forward to working more closely with you.

Unfortunately, Dr. Chokshi was needed elsewhere last week. We have become a little more apprehensive given the circumstances unfolding in Asia and the potential effects on energy policy and public attitudes; it will take time for the fog to lift. We plan to make progress on licensing issues for new facilities, albeit perhaps at a different pace than originally planned. We will continue to support our colleagues overseas and will enhance our oversight of the operating fleet in the U.S. to ensure that the systems and processes exist to deal with appropriate challenges. We cannot lose our principal focus on operational safety and will apply learn lessons from this experience to become familiar with the commonalities and differences that may exist between National practices.

It was quite apparent that the Lab Staff put thought into their presentations to ensure that we could become even more familiar with your capabilities and resources. Tom already provided a follow up with information on the RI&F Group. We will also look forward to the other presentation material that can be provided and will share it among our Staff.

Do not hesitate to stay in touch with us. We certainly look forward to working with NREL and will work to find the right opportunity to develop the relationship. Finally, thank Sarah for her coordination efforts; everything worked seamlessly.

Best regards.

Barry Zalcman
Senior Program Manager
NRO/DSE/RENV
(301) 415-2419

From: Hudson, Jody
To: Ader, Charles; Akstulewicz, Frank; Ash, Darren; Bahadur, Sher; Bailey, Marissa; Batkin, Joshua; Bergman, Thomas; Blount, Tom; Boger, Bruce; Boland, Anne; Borchardt, Bill; Boyce, Thomas (OIS); Brenner, Eliot; Brown, Frederick; Buchholz, Jeri; Burns, Stephen; Camper, Larry; Caniano, Roy; Carpenter, Cynthia; Case, Michael; Casto, Chuck; Chamberlain, Dwight; Chokshi, Nilesh; Christensen, Harold; Clifford, James; Cobey, Eugene; Coe, Doug; Cohen, Miriam; Collins, Elmo; Corbett, James; Cordes, John; Correia, Richard; Croteau, Rick; "Cunningham, Mark"; Dapas, Marc; Davis, Jack; Dean, Bill; Dingbaum, Stephen; Doane, Margaret; Dorman, Dan; Dudes, Laura; Dyer, Jim; Evans, Michele; Ficks, Ben; Flanders, Scott; Gallagher, Johanna; Galloway, Melanie; Gibson, Kathy; Gitter, Joseph; Givvines, Mary; Gody, Tony; Golder, Jennifer; Greene, Kathryn; Grobe, Jack; Hackett, Edwin; Haney, Catherine; Hiland, Patrick; Hirsch, Patricia; Holahan, Gary; Holahan, Patricia; Holian, Brian; Holonich, Joseph; Howard, Patrick; Howe, Allen; Howell, Art; Hudson, Jody; Huth, Virginia; Itzkowitz, Marvin; Johnson, Michael; Jones, Bradley; Jones, William; Kelley, Coranthis; Kennedy, Kriss; Kokaiko, Lawrence; Krupnick, David; Lee, David; Lee, Samson; Leeds, Eric; Lew, David; Lewis, Robert; Lombard, Mark; Lorson, Raymond; Lubinski, John; Lui, Christiana; Tallarico, Alison; Bower, Phyllis; Brown, Milton; Cheok, Michael; Gusack, Barbara; Johns, Nancy; Kinneman, John; Layton, Michael; Luehman, James; Madden, Patrick; Mamish, Nader; Matthews, David; Maxin, Mark; Mayfield, Michael; McConnell, Keith; McCrary, Cheryl; McCree, Victor; McDermott, Brian; McGinty, Tim; McMillan, Joseph; Meyer, David; Miller, Charles; Miller, Chris; Mitchell, Reggie; Mohseni, Aby; Monninger, John; Moore, Scott; Moorman, James; Morris, Scott; Muessle, Mary; Munday, Joel; Nelson, Robert; Nieh, Ho; OBrien, Kenneth; Ogle, Chuck; Ordaz, Vonna; Pederson, Cynthia; Persinko, Andrew; Piccone, Josephine; Plisco, Loren; Poole, Brooke; Pruett, Troy; Pulliam, Timothy; Quay, Theodore; Rabideau, Peter; Reis, Terrence; Reyes, Luis; Reynolds, Steven; Rheume, Cynthia; Rich, Thomas; Richards, Stuart; Roberts, Darrell; Rothschild, Trip; Ruland, William; Satorius, Mark; Schaeffer, James; Schmidt, Rebecca; Scott, Catherine; Shaffer, Mark; Shea, Joseph; Shear, Gary; Sheron, Brian; Skeen, David; Stewart, Sharon; Tappert, John; Thaggard, Mark; Tracy, Glenn; Tschiltz, Michael; Uhle, Jennifer; Vegel, Anton; Vietti-Cook, Annette; Virgilio, Martin; Weaver, Doug; Webber, Robert; Weber, Michael; Wert, Leonard; West, Steven; Westreich, Barry; Wiggins, Jim; Williamson, Edward; Wilson, Peter; Yerokun, Jimi; Young, Mitzi; Zimmerman, Roy; Zabler, Marian; Andersen, James; Avres, David; Caldwell, Robert; Campbell, Andy; Clark, Jeff; Delligatti, Mark; Evans, Carolyn; Hawkins, Kimberly; Henderson, Pamela; Hsia, Anthony; Jackson, Deborah; Loudon, Patrick; Lund, Louise; Ross-Lee, MaryJane; Scott, Michael; Shields, James; Shuaibi, Mohammed; Solorio, Dave; Thomas, Brian; Valentin, Andrea; Weerakkody, Sunil; Coplin, Seth; Cullison, David; Voytko, Victoria; RIDRWORKFLOW RESOURCE; Dubose, Sheila; Madison, Wil; Daniel, Susan; Kemerer, Myron; Ousley, Elizabeth; Johnson, Susan; Spencer, Mary; R4 Calendar Resource; R4 CR-ECR Resource; Owen, Lucy; Tannenbaum, Anita; Chernoff, Margaret; Cochrum, Steven; Egli, Richard; Gutteridge, John; Lam, Donna; Miller, Mark; Morris, James; Ricci, John; Rutledge, Steven; Beckford, Kaydian; DORLCA Resource; Hills, David; Stone, AnnMarie; Daley, Robert; Dickson, Billy; Skokowski, Richard; Peterson, Hironori; Lambert, Kenneth; Pelke, Patricia; Bloomer, Tamara; Lipa, Christine; R2DRS BRANCHCHIEF; Shehee, James; Franke, Mark; Giessner, John; Lara, Julio; Cameron, Jamnes; Ring, Mark; Kunowski, Michael; Riemer, Kenneth; Duncan, Eric; Bonser, Brian; DLRCalendar Resource; Landau, Mindy; DNMSCAL Resource; DMSSA Calendar Resource; Bumpass, Sheila; Daly, Jill; King, Donald; Pool, Stephen; Sanchez, Alba; Widdup, Joseph; Williams, Monique; Benner, Eric; Waters, Michael; Pstrak, David; Garcia-Santos, Norma; Habighorst, Peter; Mattingley, Joel
Cc: Johns, Nancy; Gallagher, Johanna; Tallarico, Alison
Subject: REMINDER - NRC Executive Leadership Seminar Tomorrow March 23rd.
Date: Tuesday, March 22, 2011 9:18:37 AM

This is a reminder that the next NRC Executive Leadership Seminar will be held tomorrow as originally scheduled.

I know that many of you may not be able to attend the live event due to your involvement in NRC's response to events in Japan. Please note that the ELS will be captured via video and made available for viewing on-demand from your computer within two weeks of the live event.

To all NRC SES and SES-CDP Graduates:

I am pleased to announce the next NRC Executive Leadership Seminar (ELS) scheduled for March 23rd.

The purpose of these seminars is to provide continual learning for the NRC's SES and to provide an opportunity to hear from various thought leaders on a range of topics relevant to leading in today's environment. They are intended to be both

informative and thought-provoking.

This upcoming ELS will take a different approach than previous seminars. A major focus of the next seminar will be on presentation of the latest organizational research conducted by the Corporate Executive Board on the topic of Employee Engagement and what drives it

Why is this topic important to NRC's leaders? The research data show that highly engaged employees are 57% more productive and are nine times less likely to leave. Simply put, this means any organization that's focused on high productivity and retention of top talent must include building strong employee engagement as part of its overall strategy.

The timing of this topic for the next ELS was chosen with purpose. The NRC is entering a new climate characterized by tighter budgets and the need to increase efficiencies. While maintaining high employee engagement has been important, it will become even more critical, and potentially more challenging to achieve in this new environment. Furthermore, as duplicative processes and functions are identified and ways to eliminate them are considered, it will be important to assess the potential adverse impacts those measures may have on employee engagement. Knowledge of the most important and sustaining drivers of employee engagement will be important in this regard, and will enable executives and senior managers to make informed decisions regarding impacts potential cost cutting measures may have on employee engagement.

Logistics and seminar information are below.

Please note that this email will also be resent to all of you as a calendar appointment.

I look forward to seeing you all at the March 23rd seminar.

-

Jody Hudson

Chief Learning Officer
Human Resources Training & Development
U.S. Nuclear Regulatory Commission

NRC Executive Leadership Seminar (ELS)

Speaker: Mr. Adam Cole, Corporate Executive Board (CEB)

Title of Presentation: Building Engagement Capital

Date: Wednesday, March 23, 2011

Time: 1:30pm-3:30pm

Location: HQ-TWFN-Auditorium and broadcast by video teleconference (VTC) to the regions, TTC, PDC and other HQ satellite offices upon request. POC for this event is Karmen Baretich, HR/HRTD (301-492-2290).

I encourage all serving members of the SES and SES CDP graduates to attend. I also encourage you to invite non-SES members of your leadership teams. A video recorded version of this program will also be made available approximately two weeks after the seminar presentation. Recorded ELSs are available for viewing on demand at http://papaya.nrc.gov/HRTD/employeeDevelopment/devprogs2.cfm?prog_id=23&subtitle=Executive%20Leadership%20Seminars

Description:

The title of the seminar is "Building Engagement Capital". The seminar will present the latest organizational research on employee engagement conducted by the Corporate Executive Board. Special emphasis will be on the major drivers contributing to employee engagement, and the relative strength and staying power of the various top drivers.

Program Outline:

Definition of Employee Engagement:

Engagement is the extent to which employees commit to something or someone in their organization, how hard they work, and how long they stay as a result of that commitment. An employee's level of engagement is directly correlated to their intent to stay with an organization as well as the amount of effort impacting their performance.

Outcomes of Employee Engagement:

Employees that are committed work 57% harder and are 9 times less likely to leave.

Key Engagement Drivers:

More than 300 potential drivers of engagement were analyzed and the top five drivers of engagement were identified.

-
Jody Hudson

Chief Learning Officer

Human Resources Training & Development

U.S. Nuclear Regulatory Commission
Mailstop: GW-4A01
301-492-2215

From: EUCL Events
 To: Flanders, Scott
 Subject: Nuclear Power PRA and Design Basis Courses in May
 Date: Tuesday, March 22, 2011 11:47:38 AM

<h2>Nuclear Power Design Basis</h2> <p>May 3-4, 2011 :: Rockville, MD</p>	<h2>Nuclear Power Probabilistic Risk Assessment (PRA)</h2> <p>May 5-6, 2011 :: Rockville, MD</p>
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Overviews

<p>Recent international events emphasize the criticality of nuclear design basis. As the world moves forward in its consideration of new nuclear power development and production, significant emphasis is being placed on improved plant design and construction. Many companies participating in the last round of nuclear construction abandoned their nuclear product lines and services for a multitude of reasons. Nuclear support can incur significant additional costs if suppliers do not understand the legal foundation of their responsibilities and obligations in design basis. This course gives those new to nuclear generation an overview of the structure, purpose, and recent changes in nuclear generation regulations that control the plant design. The course focuses on the nuclear generation plant design requirements for industry designers, constructors, suppliers, and operators. The realities of designing for catastrophic circumstances will be included in this detailed analysis.</p> <p>PDF Brochure Pricing and Registration</p>	<p>This course introduces PRA probabilistic risk assessment history, PRA development, and nuclear risk assessment in nuclear power applications. The correct application of this process in nuclear operations is critical as the nuclear industry, based on recent international events, proceeds with extensive statistical safety analysis and review. It is designed for those who use PRA results, and need to understand PRA uses, methods, and issues, but who don't directly develop PRA themselves. The course will give attendees a solid understanding of the history behind PRA, reasons for developing PRA, how they are constructed, their assumptions and limits, types of applications, methods of development, and issues that remain to be resolved with their use in nuclear power applications.</p> <p>PDF Brochure Pricing and Registration</p>
--	---

Topics Include

<ul style="list-style-type: none"> • Defining nuclear plant design basis • Primary sources of design basis inputs • Differences between safety-related, commercial grade, and basic components • Difference between safety-related and non-safety-related functions, SSC, and their critical characteristics • Operability and dedication • Appendix A requirements • Key elements of Appendix B as they apply to design • How ASME code fits into design basis <p>Full Agenda</p>	<ul style="list-style-type: none"> • Discuss PRA background and deterministic safety analysis • Recognize deterministic safety analysis limits • Relate PRA use to events like Three Mile Island • Identify simple PRA elements relating those to deterministic analysis • Interpret common PRA elements and standards • Explain PRA role as a tool assessing nuclear risks • Describe PRA role in new nuclear plant (10 CFR) Part 52, Combined Licensing • Analyze PRA limits • Examine likely directions for future PRA development <p>Full Agenda</p>
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Instructed By

<p>Jim August, P.E., Nuclear Engineer, CORE Inc.</p> <p>Instructor Bio</p>	<p>Scott Beck, Independent Consultant, Safety and Risk Assessment</p> <p>Instructor Bio</p>
---	--

Testimonials from Past Attendees

"In my opinion, design basis and regulatory framework could not have been delivered more succinctly. This was a very beneficial crash course to propel your understanding of how things worked and should work. Keep up the good work!"

-Nuclear engineer, Oak Ridge National Laboratory

"Great instructor. Makes the material interesting while expanding your knowledge."

-Licensing engineer, Mitsubishi Nuclear Energy Systems

"This course was a good source of information for individuals – even those without a nuclear engineering background – on the current and possible future status of nuclear power design and regulation."

-Special agent, Nuclear Regulatory Commission

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From: [Jasinski, Robert](#)
To: [Lauron, Carolyn](#)
Cc: [Chokshi, Niles](#); [Flanders, Scott](#)
Subject: RE: ACTION: Update of Info Digest Material Due 3/22
Date: Tuesday, March 22, 2011 6:38:00 AM

Many, many thanks!!!

From: Lauron, Carolyn
Sent: Tuesday, March 22, 2011 6:37 AM
To: Jasinski, Robert
Cc: Chokshi, Niles; Flanders, Scott
Subject: RE: ACTION: Update of Info Digest Material Due 3/22

DSER has no changes.

From: Jasinski, Robert
Sent: Tuesday, March 22, 2011 5:30 AM
To: Lauron, Carolyn
Cc: Chokshi, Niles; Flanders, Scott
Subject: ACTION: Update of Info Digest Material Due 3/22
Importance: High

Carolyn:

Please provide me with your changes by noon today, both changes made in the file location provided and a hard copy of what the changes were. We need to share them with the Front

Office. Thanks.

From: Rosales-Cooper, Cindy
Sent: Monday, March 21, 2011 3:15 PM
To: Jasinski, Robert
Cc: Usilton, William; King, Shannon; Williams, Donna
Subject: RE: ACTION: Update of Info Digest Material Due 3/22

Bob,
The Front Office has no updates.

We would like to see the updates provided by the other Divisions.

Thanks
Cindy

From: Jasinski, Robert
Sent: Monday, March 21, 2011 11:59 AM
To: Lauron, Carolyn; Williams, Donna; Rosales-Cooper, Cindy; Rivera-Varona, Aida; Erwin, Kenneth
Cc: King, Shannon; McGovern, Denise; Araguas, Christian; Clark, Theresa
Subject: ACTION: Update of Info Digest Material Due 3/22
Importance: High

Dear Colleagues:

With regard to the attached ~~green ticket~~ on updating the agency's Info Digest, please be reminded that any changes (*including charts, graphs, etc*)

need to be made to the existing Info Digest file by **noon tomorrow (Tuesday, March 22)**. File Location is under Special Instructions on the EDATS page. Here's the link:

<http://portal.nrc.gov/edo/staff/CPI/Shared%20Documents/Forms.AllItems.aspx>

Once all changes are completed, please notify William Usilton, Shannon King and me that they have been made in a full and accurate manner.

To date, ***we have received notification from Christian (ARP), Theresa (DSRA), and Denise McGovern (DE)***.

Please contact Shannon or me if you have any inquiries. Look forward to your notification tomorrow.

As always, many thanks. Regards, Bob.

From: McIntosh, Angela
To: Bloomer, Tamara; Boland, Anne; Burgess, Michele; Cai, June; Cain, Chuck; Campbell, Vivian; Caniano, Roy; Carpenter, Cynthia; Collins, Daniel; Deegan, George; Felsher, Harry; Flanders, Scott; Foster, Jack; Howell, Art; Lambert, Kenneth; Lewis, Robert; Lipa, Christine; Lorson, Raymond; Loudon, Patrick; Luehman, James; McConnell, Keith; McCraw, Aaron; Miller, Charles; Moore, Scott; Nick, Joseph; Pelke, Patricia; Spitzberg, Blair; Usilton, Brenda; Villar, Sheryl; White, Duane; White, Duncan; Whitten, Jack
Subject: February 2011 Report on Materials Licensing, Inspections and Events
Date: Tuesday, March 22, 2011 10:10:39 AM
Attachments: 2011 02 (FY 2011).rpt.pdf

Please see attached and have a great day!

Angela R. McIntosh

Office of Federal and State Materials
and Environmental Management Programs
U.S. Nuclear Regulatory Commission
Angela.McIntosh@nrc.gov
(301) 415-5030

TO: DNMS Directors

FROM: Angela R. McIntosh, FSME/MSSA

SUBJECT: REPORT ON MATERIALS LICENSING, INSPECTIONS, AND EVENTS
FEBRUARY 2011

Attached is the report on licensing, inspections, and certified events. If you have questions, please contact me at Angela.McIntosh @nrc.gov or (301) 415-5030.

Attachment: As stated

DISTRIBUTION:

HQ

Burgess, M
Boland, A
Carpenter, C
Cai, J
Deegan, G
Felsher, H
Flanders, S
Foster, J
Lewis, R
Luehman, J
McConnell, K
McCraw, A
Moore, S
Miller, C
Usilton, B
White, D
White, DE

RI

Collins, D
Lorson, R
Nick, J
Villar, S

RII

None

RIII

Bloomer, T
Lambert, K
Lipa, C
Louden, P
Pelke, P

RIV

Cain, C
Campbell, V
Caniano, R
Howell, Art
Spitzberg, B
Whitten, J

**MONTHLY STATISTICS REPORT
MATERIALS LICENSING, INSPECTION,
AND EVENTS DATA
FEBRUARY 2011**

TABLE 1 - STRATEGIC OUTCOMES FY 2011		
Reportable to Congress		
	METRIC	ACTUAL
Prevent the occurrence of any acute radiation exposures resulting in fatalities	0	0
Prevent the occurrence of any releases of radioactive materials that result in significant radiation exposures ¹	0	0
Prevent the occurrence of any releases of radioactive materials that cause significant environmental impacts. ²	0	0

¹ "Significant radiation exposures" are defined as those that result in unintended permanent functional damage to an organ or a physiological system as determined by a physician, in accordance with Abnormal Occurrence Criterion I.A.3.

² Releases that have the potential to cause adverse impacts are those that exceed the limits for reporting abnormal occurrences as given by Abnormal Occurrence criterion 1.N.1 [normally 5,000 times Table 2 (air and water) of Appendix B, Part 20]

TABLE 2 - FY 11 LICENSING BY ORGANIZATION

Cumulative for FY 2011

February

	Received	Completed	Pending
HQ Exempt Distribution	31	28	15
HQ SS&D	13	16	3
RI	236	235	73
RIII	383	312	216
RIV	157	180	88
Total	820	771	395

TABLE 3 - FY 2010 DATA ON PERFORMANCE MEASURES

(Events Certified to Have Met the Performance Measures)

Date of Events Report: March 3, 2011 Date of Certification: March 3, 2011

Division of Waste Management and Environmental Protection

No events with radiation exposures to the public and occupational workers that exceed AO Criteria 1A¹

No.	Licensee Name	License No.	NMED No.	Event Date	Count
					0

No radiological releases to the environment that exceed applicable limits

No.	Licensee Name	License No.	NMED No.	Event Date	Count
					0

Division of Materials Safety and State Agreements

< 3 events with radiation exposures to the public and occupational workers that exceed AO Criteria 1A1¹

No.	Licensee Name	License No.	NMED No.	Event Date	Count
1	Mercy Medical Center	CO-005-01	100245	03/16/2010	3
2	Megahy, Mohamed (occurred in FY 07)	IL-02032-01	100319	05/01/2007	
3	Department of the Army	53-00458-04	100400	06/07/2010	

< 2 radiological releases to the environment that exceed applicable regulatory limits²

No.	Licensee Name	License No.	NMED No.	Event Date	Count
					0

< 300 losses of control of licensed material per year

No.	Licensee Name	License No.	NMED No.	Event Date	Count
	Various	Various	Various	Various	187

< 30 events per year resulting in radiation over-exposures from radioactive material that exceed applicable regulatory limits.³

No.	Licensee Name	License No.	NMED No.	Event Date	Count
1	Owensby and Kritikos, Inc.	LA-2234-L01	090837	11/12/2009	6
2	FMC Corp.	49-04295-01	090883	12/17/2009	
3	Blazer Inspection	TX-L04619	100112	12/31/2009	
4	Georgia Institute of Technology	GA-A19-L42	100198	04/13/2010	
5	Ohio State University Medical Center	OH-02110250037	100209	04/16/2010	
6	IBA Molecular North America	TX-L06174	100383	07/16/2010	

¹ Events that meet this performance measure are potential until the Commission determines that they have met AO Criteria 1.A. This determination is published in NUREG00-90, "Report to Congress on Abnormal Occurrences."

² As of January 22, 2009, events meeting this measure must meet 20.2203(a)(3)(ii), and result in a release of radioactive material that cannot be retrieved or remediated through decontamination efforts

³ Beginning FY 05, for the purpose of tracking these metrics in this report and in the MSSA Operational Plan report, overexposures are considered to be a subtype of overexposure events that exceed Abnormal Occurrence Criteria 1.A

Table 3 - FY 10 Data on Performance Measures (Certified Events) (continued)

Division of Materials Safety and State Agreements					
< 45 medical events per year					
No.	Licensee Name	License No.	NMED No.	Event Date	Count
1	Michigan, University of	21-00215-04	090786	10/14/2009	41
2	Boca Raton Community Hospital	FL-0550-1	090840	10/26/2009	
3	Cookeville Regional Medical Center	TN-R-71026-D10	090885	12/15/2009	
4	Department of Veterans Affairs	03-01535-01	100009	12/30/2009	
5	QHG of Indiana, Inc.	13-01535-01	100031	01/14/2010	
6	The Jewish Hospital	OH-02120310029	100049	01/21/2010	
7	The Jewish Hospital	OH-02120310029	100053	12/28/2009	
8	Massachusetts General Hospital	MA-60-0055	100071	02/10/2010	
9	University Community Hospital	FL-0549-3	100074	02/14/2010	
10	University of Kentucky	NR	100079	02/23/2010	
11	Christiana Care Health System	07-12153-02	100082	01/18/2010	
12	University of Pennsylvania	PA-0131	100085	01/21/2010	
13	Coral Springs Clinic	FL-3109-2	100118	03/11/2010	
14	Mayo Clinic	MN-1047-205-55	100148	03/23/2010	
15	University of Maryland	MD-07-014-05	100174	01/27/2010	
16	Mary Bird Perkins Cancer Center	LA-2651-L01	100219	03/12/2010	
17	St. Mary's Regional Medical Center	NV-16-12024402	100263	03/16/2010	
18	Bristol Hospital, Inc.	06-02057-01	100290	01/12/2010	
19	Lovelace Medical Center	NM-MI-210-94	100294	05/04/2010	
20	Oncology Hematology Consultants	TX-L05919	100298	06/08/2010	
21	Medical College of Wisconsin	WI-079-1104-01	100305	06/09/2010	
22	Not Reported (New York licensee)	Not Reported	100310	05/26/2010	
23	University of Minnesota	MN-1049-206-27	100313	06/15/2010	
24	Lancaster General Hospital	PA-0233	100314	06/03/2010	
25	Sutter Health Medical Physics Center	CA-2964-34	100320	06/17/2010	
26	Iredell Memorial Hospital	NC-049-0412-2	100346	05/05/2010	
27	West Virginia University Hospital	47-23066-02	100347	01/20/2010	
28	University of Pennsylvania	PA-0131	100371	07/07/2010	
29	University of New Mexico	NM-BM-233	100386	07/21/2010	
30	Rhode Island Hospital	RI-7D-051-01	100388	04/21/2010	
31	Greater Baltimore Medical Center	MD-05-002-03	100397	07/09/2010	
32	Rush Presbyterian Saint Lukes	IL-01766-01	100427	08/18/2010	
33	University of Maryland	MD-07-014-01	100430	03/05/2010	
34	Providence Hospital	21-02802-03	100448	08/30/2010	
35	Marshfield Clinic	WI-141-1162-01	100461	09/09/2010	
36	Cleveland Clinic Foundation	OH-02110180013	100483	09/27/2010	
37	Baylor Radiosurgery Center	TX-L05842	100492	09/30/2010	
38	Riverside Methodist Hospital	OH-02120250070	100510	04/06/2010	
39	Henry Ford Macomb Hospital	21-11850-01	100601	07/07/2010	
40	Medical Center at Bowling Green	KY-202-124-26	110015	07/13/2010	
41	Guthrie Healthcare Systems	PA-0012	110116	10/05/2009	

TABLE 4 - FY 2011 DATA ON PERFORMANCE MEASURES					
(Events Certified to Have Met the Performance Measures)					
Date of Events Report: March 3, 2011 Date of Certification: March 3, 2011					
Division of Waste Management and Environmental Protection					
No events with radiation exposures to the public and occupational workers that exceed AO Criteria 1A ¹					
No.	Licensee Name	License No.	NMED No.	Event Date	Count
No radiological releases to the environment that exceed applicable limits					
No.	Licensee Name	License No.	NMED No.	Event Date	Count
					0
Division of Materials Safety and State Agreements					
< 3 events with radiation exposures to the public and occupational workers that exceed AO Criteria 1A ¹					
No.	Licensee Name	License No.	NMED No.	Event Date	Count
1	Dept. of the Navy	45-23645-01NA	110073	01/12/2011	1
< 2 radiological releases to the environment that exceed applicable regulatory limits ²					
No.	Licensee Name	License No.	NMED No.	Event Date	Count
					0
< 300 losses of control of licensed material per year					
No.	Licensee Name	License No.	NMED No.	Event Date	Count
	Various	Various	Various	Various	40
< 30 events per year resulting in radiation over-exposures from radioactive material that exceed applicable regulatory limits. ⁴					
No.	Licensee Name	License No.	NMED No.	Event Date	Count
1	Massachusetts General Hospital	MA-RCN01762	110065	12/31/2010	1
¹ Events that meet this performance measure are potential until the Commission determines that they have met AO Criteria 1.A. This determination is published in NUREG00-90, "Report to Congress on Abnormal Occurrences."					
² As of January 22, 2009, events meeting this measure must meet 20.2203(a)(3)(ii), and result in a release of radioactive material that cannot be retrieved or remediated through decontamination efforts					
⁴ Beginning FY 05, for the purpose of tracking these metrics in this report and in the MSSA Operational Plan report, overexposures are considered to be a subtype of overexposure events that exceed Abnormal Occurrence Criteria 1.A					

Table 4 - FY 11 Data on Performance Measures (Certified Events) (continued)

Division of Materials Safety and State Agreements					
< 45 medical events per year					
No.	Licensee	License No.	NMED No.	Event Date	Count
1	Community Hospitals of Indiana	13-06009-01	100506	10/06/2010	16
2	Liberty Hospital	24-16178-01	100507	10/06/2010	
3	Cleveland Clinic Foundation	OH-02110180013	100543	10/26/2010	
4	Warren General Hospital	PA-0083	100553	11/02/2010	
5	Duke University Medical Center	NC-032-0247-4	100554	10/22/2010	
6	Mayo Clinic	MN-1047-206-55	100563	11/10/2010	
7	Duke University Medical Center	NC-032-0247-4	100569	11/13/2010	
8	Prostate Seed Center, LLC	CO-972-01	100591	12/02/2010	
9	Oakwood Hospital - Annapolis Center	21-11457-02	100597	12/04/2010	
10	Banner Good Samaritan Medical Center	AZ-07-478	110005	12/22/2010	
11	Rush University Medical Center	IL-01766-01	110032	11/23/2010	
12	Eastern Regional Medical Center	PA-0980	110052	01/19/2011	
13	Cleveland Clinic Foundation	OH-02110180013	110056	12/08/2010	
14	Rex Healthcare	NC-092-0160-1	110088	02/08/2011	
15	Mercy Medical Center	IA-0339157HDR	110104	02/10/2011	
16	Univ. of Texas Southwestern Medical Ctr.	TX-L00279	110108	02/15/2011	

TABLE 5 PART I - TIMELINESS OF COMPLETED INSPECTIONS

Metric: 98% inspections completed in all Regions.

FY 2011 - Quarter 1								
Region:	RI		RIII		RIV		QTR Issued	QTR Total Overdue
Month	No. Done	No. Overdue	No. Done	No. Overdue	No. Done	No. Overdue		
Oct	33	0	31	0	11	0	268	1
Nov	33	0	47	1	31	0		
Dec	28	0	41	0	13	0		
Totals	94	0	119	1	55	0		

Qtr 1 Metric: GREEN

See Table 5 Pt. II for list of overdue licensees.

FY 2011 - Quarter 2								
Region:	RI		RIII		RIV		QTR Issued	QTR Total Overdue
Month	No. Done	No. Overdue	No. Done	No. Overdue	No. Done	No. Overdue		
Jan	25	0	47	0	16	0		
Feb	10	0	43	0	51	0		
Mar								
Totals								

Qtr 2 Metric:

See Table 5 Pt. II for list of overdue licensees.

FY 2011 - Quarter 3								
Region:	RI		RIII		RIV		QTR Issued	QTR Total Overdue
Month	No. Done	No. Overdue	No. Done	No. Overdue	No. Done	No. Overdue		
Apr								
May								
Jun								
Totals								

Qtr 3 Metric:

See Table 5 Pt. II for list of overdue licensees.

FY 2011 - Quarter 4								
Region	RI		RIII		RIV		QTR Issued	QTR Total Overdue
Month	No. Done	No. Overdue	No. Done	No. Overdue	No. Done	No. Overdue		
Jul								
Aug								
Sep								
Totals								

Qtr 4 Metric:

See Table 5 Pt. II for list of overdue licensees

Table 5 Page 1 of 2

TABLE 5 PART II - LIST OF OVERDUE LICENSEE INSPECTIONS

FY 2011 - Quarter 1			
RI	October	November	December
Overdue Licensee	NONE	NONE	NONE
RIII	October	November	December
Overdue Licensee	NONE	St. Mary's of Michigan Medical Center ¹	NONE
RIV	October	November	December
Overdue Licensee	NONE	NONE	NONE

¹ Due November 1, completed November 2.

FY 2011 - Quarter 2			
RI	January	February	March
Overdue Licensee	NONE	NONE	
RIII	January	February	March
Overdue Licensee	NONE	NONE	
RIV	January	February	March
Overdue Licensee	NONE	NONE	

FY 2011 - Quarter 3			
RI	April	May	June
Overdue Licensee			
RIII	April	May	June
Overdue Licensee			
RIV	April	May	June
Overdue Licensee			

FY 2011 - Quarter 4			
RI	July	August	September
Overdue Licensee			
RIII	July	August	September
Overdue Licensee			
RIV	July	August	September
Overdue Licensee			

TABLE 6 - TIMELINESS OF INSPECTION REPORT ISSUANCE

February Metric

GREEN

Metric Legend

Issue 85% of inspection rpts in ≤ 90 days: GREEN

Issue >85% of inspection rpts in 90 days: RED

ROUTINE INSPECTIONS					TEAM INSPECTIONS				
Month	Region	No. Reports Issued	No. Issued in 30 Days	Percent on Time	Month	Region	No. Reports Issued	No. Issued in 45 Days	Percent on Time
OCT	I	31	31	100%	OCT	I	2	2	100.00%
	III	25	25	100%		III	0	0	
	IV	8	8	100%		IV	0	0	
Total		64	64	100%	Total		2	2	100%
NOV	I	33	33	100%	NOV	I	0	0	
	III	34	34	100%		III	0	0	
	IV	24	23	96%		IV	0	0	
Total		91	90	99%	Total		0	0	
DEC	I	28	26	93%	DEC	I	0	0	
	III	38	38	100%		III	0	0	
	IV	20	20	100%		IV	0	0	
Total		86	84	98%	Total		0	0	
QTR 1		241	238	99%	QTR 1		2	2	100%
JAN	I	25	25	100%	JAN	I	0	0	
	III	32	32	100%		III	0	0	
	IV	17	17	100%		IV	0	0	
Total		74	74	100%	Total		0	0	
FEB	I	52	50	96%	FEB	I	0	0	
	III	29	29	100%		III	0	0	
	IV	14	12	86%		IV	0	0	
Total		95	91	96%	Total		0	0	
MAR	I			#DIV/0!	MAR	I			
	III			#DIV/0!		III			
	IV			#DIV/0!		IV			
Total		0	0	#DIV/0!	Total		0	0	
QTR 2		169	165	98%	QTR 2		0	0	

ROUTINE INSPECTIONS					TEAM INSPECTIONS				
Month	Region	Rpts Issued	Issued In 30 Days	Percent on Time	Month	Region	Rpts Issued	Issued In 30 Days	Percent on Time
APR	I III IV			#DIV/0! #DIV/0! #DIV/0!	APR	I III IV			
Total		0	0	#DIV/0!	Total		0	0	
MAY	I III IV			#DIV/0! #DIV/0! #DIV/0!	MAY	I III IV			#DIV/0!
Total		0	0	#DIV/0!	Total		0	0	#DIV/0!
JUN	I III IV			#DIV/0! #DIV/0! #DIV/0!	JUN	I III IV			
Total		0	0	#DIV/0!			0	0	#DIV/0!
QTR 3		0	0	#DIV/0!	QTR 3				
JUL	I III IV			#DIV/0! #DIV/0! #DIV/0!	JUL	I III IV			
Total		0	0	#DIV/0!	Total		0	0	
AUG	I III IV			#DIV/0! #DIV/0! #DIV/0!	AUG	I III IV			
Total		0	0	#DIV/0!	Total		0	0	
SEP	I III IV			#DIV/0! #DIV/0! #DIV/0!	SEP	I III IV			
Total		0	0	#DIV/0!	Total		0	0	
QTR 4		0	0	#DIV/0!	QTR 4				
FY Total		410	403	98%	FY Total		2	2	100%

Table 6 Page 2 of 2

TABLE 7 - MATERIALS LICENSING TIMELINESS				
	Completed within Goal		Total Completed	Percent
New Applications & Amendments	90 days	671	706	95.0%
	1 year	661	706	93.6%
Renewals	180 days	63	66	95.5%
	2 years	65	66	98.5%
SS&D	180 days	16	16	100.0%
	2 years	16	16	100.0%

TABLE 8 - FEBRUARY 2011 LICENSING STATISTICS

LTS REPORT DATE: March 02, 2011

PERFORMANCE MEASURES METRICS
85% and above: GREEN
80 % TO 84%: YELLOW
Below 80%: RED

ALL LICENSING ACTIONS

REGIONS AND HEADQUARTERS

	TOTAL
Number Received	820
Number Completed	771
Pending	395

TIMELINESS

	TOTAL	In 90 Days	% in 90 Days	Metric	In 1 Yr	% in 1 Yr
New/Amended Licenses	706	671	95.04%	GREEN	661	93.63%
Renewals & SS&Ds	TOTAL	In 180 Days	% in 180 Days	Metric	In 2 Yrs	% in 2 Yrs
	82	79	96.34%	GREEN	81	98.78%

REGIONS ONLY

ALL LICENSING ACTIONS (New Applications + Renewed Licenses + Amended Licenses)

	TOTAL
Licenses Received	776
Licenses Completed	727
Pending (02/28/2011)	377

NEW APPLICATIONS

	TOTAL	In 90 Days	% in 90 Days	Metric
New Applications Received	39			
New Applications Completed	58	53	91.38%	GREEN
Pending (02/28/2011)	29			

RENEWED LICENSES

	TOTAL	In 180 Days	% in 180 Days	Metric
Number Received	124			
Number Completed	65	63	96.92%	GREEN
Pending (02/28/2011)	108			

AMENDED LICENSES

	TOTAL	In 90 Days	% in 90 Days	Metric
Number Received	613			
Number Completed	604	584	96.69%	GREEN
Pending (02/28/2011)	240			

TABLE 8 - FEBRUARY 2011 LICENSING STATISTICS

HEADQUARTERS

(Exempt Distributions and Sealed Sources and Devices)

ALL HQ LICENSING ACTIONS

	TOTAL
Number Received	44
Number Completed Actions	44
Pending	18
Older Pending	6

NEW LICENSES FOR EXEMPT DISTRIBUTIONS

	TOTAL	In 90 Days	% in 90 Days	Metric	In 1 Yr	% in 1 Yr
New Applications Received	9					
New Applications Completed	10	4	40.00%	RED	10	100.00%
Pending (02/28/2011)	7					
Older Pending	6					

RENEWED EXEMPT DISTRIBUTION LICENSES

	TOTAL	In 180 Days	% in 180 Days	Metric	In 2 Yrs	% in 2 Yrs
Number Received	4					
Number Completed	1	0	0.00%	RED	1	0.00%
Pending (02/28/2011)	3					
Older Pending	0					

AMENDED EXEMPT DISTRIBUTION LICENSES

	TOTAL	In 90 Days	% in 90 Days	Metric	In 1 Yr	% in 1 Yr
Number Received	18					
Number Completed	17	14	82.35%	YELLOW	17	100.00%
Pending (02/28/2011)	5					
Older Pending	0					

SEALED SOURCES AND DEVICES

	TOTAL	In 180 Days	% in 180 Days	Metric	In 2 Yrs	% in 2 Yrs
Number Received	13					
Number Completed	16	16	100.00%	GREEN	16	100.00%
Pending (02/28/2011)	3					
Older Pending	0					

TIMELINESS of COMPLETED LICENSING ACTIONS

	TOTAL	In Required Time	% Within Required Time	Metric
New, Renewed, Amended, & SS&D	44	34	77.27%	RED

For exempt licensing, the metric does not account for one SS&D review, which may take up to 180 days to review.

Totals are cumulative throughout the Fiscal Year.

TABLE 8 - FEBRUARY 2011 LICENSING STATISTICS

REGION I

ALL LICENSING ACTIONS

	TOTAL
Number Received	236
Number Completed	235
Pending (02/28/2011)	73
Older Pendings	0

NEW LICENSES

	TOTAL	In 90 Days	% in 90 Days		In 1 Yr	% in 1 Yr
New Applications Received	14					
New Applications Completed	16	15	93.75%	GREEN	16	100.00%
Pending (02/28/2011)	6					

RENEWED LICENSES

	TOTAL	In 180 Days	% in 180 Days		In 2 Yrs	% in 2 Yrs
Number Received	18					
Number Completed	19	18	94.74%	GREEN	18	94.74%
Pending (02/28/2011)	10					

AMENDED LICENSES

	TOTAL	In 90 Days	% in 90 Days		In 1 Yr	% in 1 Yr
Number Received	204					
Number Completed	200	199	99.50%	GREEN	200	100.00%
Pending (02/28/2011)	57					

TIMELINESS of COMPLETED LICENSING ACTIONS

	TOTAL	In 90 Days	% in 90 Days		In 1 Yr	% in 1 Yr
New + Amended Licenses	216	214	99.07%	GREEN	216	100.00%

Totals are cumulative throughout the Fiscal Year

TABLE 8 - FEBRUARY 2011 LICENSING STATISTICS

REGION III

ALL LICENSING ACTIONS

	TOTAL
Number Received	383
Number Completed	312
Pending (02/28/2011)	216
Older Pending	12

NEW LICENSES

	TOTAL	In 90 Days	% in 90 Days		In 1 Yr	% in 1 Yr
New Applications Received	10					
New Applications Completed	17	15	88.24%	GREEN	16	94.12%
Pending (02/28/2011)	16					

RENEWED LICENSES

	TOTAL	In 180 Days	% in 180 Days		In 2 Yrs	% in 2 Yrs
Number Received	89					
Number Completed	38	37	96.34%	GREEN	38	100.00%
Pending (02/28/2011)	84					

AMENDED LICENSES

	TOTAL	In 90 Days	% in 90 Days		In 1 Yr	% in 1 Yr
Number Received	284					
Number Completed	257	254	98.83%	GREEN	257	100.00%
Pending (02/28/2011)	116					

TIMELINESS of COMPLETED LICENSING ACTIONS

	TOTAL	In 90 Days	% in 90 Days	Metric	In 1 Yr	% in 1 Yr
New + Amended Licenses	274	269	98.18%	GREEN	273	99.64%

Totals are cumulative throughout the Fiscal Year

TABLE 8 - FEBRUARY 2011 LICENSING STATISTICS

REGION IV

ALL LICENSING ACTIONS

	TOTAL
Number Received	157
Number Completed	180
Pending (02/28/2011)	88
Older Pending	2

NEW LICENSES

	TOTAL	In 90 Days	% in 90 Days		In 1 Yr	% in 1 Yr
New Applications Received	15					
New Applications Completed	25	23	92.00%	GREEN	25	100.00%
Pending (02/28/2011)	7					

RENEWED LICENSES

	TOTAL	In 180 Days	% in 180 Days		In 2 Yrs	% in 2 Yrs
Number Received	17					
Number Completed	8	8	100.00%	GREEN	8	100.00%
Pending (02/28/2011)	14					

AMENDED LICENSES

	TOTAL	In 90 Days	% in 90 Days		In 1 Yr	% in 1 Yr
Number Received	125					
Number Completed	147	131	89.12%	GREEN	147	100.00%
Pending (02/28/2011)	67					

TIMELINESS of COMPLETED LICENSING ACTIONS

	TOTAL	In 90 Days	% in 90 Days		In 1 Yr	% in 1 Yr
New + Amended Licenses	172	154	89.53%	GREEN	172	100.00%

Totals are cumulative throughout the Fiscal Year.

TABLE 9
Office of Federal and State Materials and Environmental Management Programs
Division of Material Safety and State Agreements
Source Management and Protection Branch

Sealed Source and Device Actions
Fiscal Year 2011

Month	Received	Completed	Transfers to Inactive Status	New Actions and Amendments	Total Pending
Carry-over					0
October	2	4			0
November	3	4			0
December	3	4			5
January	2	0			4
February	3	4			3
March					
April					
May					
June					
July					
August					
September					
Totals	13	16			3

From: [Quinn, Laura](#)
To: [Fetter, Allen](#)
Cc: [Flanders, Scott](#)
Subject: FW: Drop in
Date: Tuesday, March 22, 2011 9:19:38 AM

FYI

-----Original Message-----

From: Lutchenkov, Dimitri [<mailto:dimitri.lutchenkov@unistarnuclear.com>]
Sent: Tuesday, March 22, 2011 9:18 AM
To: Quinn, Laura
Subject: Drop in

I am still planing to come at 1p today to discuss CC3 FEIS schedule. Getting the schedule back on track is a very critical issue for UniStar that requires a face to face.

I am in a MDE meeting all morning and not reachable by phone.

Dimitri Lutchenkov
Director, Environmental Affairs
UniStar Nuclear Energy

Sent from my iPhone

From: System Administrator
To: dimitri.lutchenkov@unistarnuclear.com
Subject: Undeliverable: Dropin
Date: Tuesday, March 22, 2011 9:52:35 AM
Attachments: [Dropin.msg](#)

Your message did not reach some or all of the intended recipients.

Subject: Dropin

Sent: 3/22/2011 9:53 AM

The following recipient(s) cannot be reached:

dimitri.lutchenkov@unistarnuclear.com on 3/22/2011 9:53 AM

None of your e-mail accounts could send to this recipient.

Attachment Dropin.msg (2560 Bytes) cannot be converted to PDF format.

From: [ExtensionRequest, EDO](#)
To: [Lauron, Carolyn](#)
Cc: [Wentzel, Michael](#); [Andersen, James](#); [Pham, Bo](#); [RidsNroMailCenter Resource](#); [Flanders, Scott](#); [Chokshi, Niles](#); [Berry, Lee](#); [Williams, Donna](#); [Doyle, Daniel](#); [Coates, Anissa](#); [Correa, Yessie](#); [Sanfilippo, Nathan](#)
Subject: RE: NRO/DSER Acceptance and Extension Request: Request to Reassign Green Ticket G20110170
Date: Tuesday, March 22, 2011 7:50:09 AM

Carolyn,

OEDO and SECY have approved your extension request. The new OEDO and SECY due date is 04/15/11.

Also, please have staff notify the requester of the delay.

Thanks,
Kathy

From: Lauron, Carolyn
Sent: Friday, March 18, 2011 12:56 PM
To: ExtensionRequest, EDO
Cc: Wentzel, Michael; Andersen, James; Pham, Bo; RidsNroMailCenter Resource; Flanders, Scott; Chokshi, Niles; Berry, Lee; Williams, Donna; Doyle, Daniel; Coates, Anissa; Correa, Yessie
Subject: NRO/DSER Acceptance and Extension Request: Request to Reassign Green Ticket G20110170

Hi –

I have discussed this action with Niles Chokshi (Deputy Director, NRO/DSER) and I am responding on his behalf to accept this ticket.

NRO/DSER is also requesting an extension until 4/15 to respond to the ticket given its awareness of it on two days ago (despite the document's incoming date of 2/18/11).

Please let me know if you need more information.

Thanks,
Carolyn
2736

From: Pham, Bo
Sent: Friday, March 18, 2011 11:39 AM
To: Andersen, James
Cc: Lauron, Carolyn; Wentzel, Michael
Subject: RE: Request to Reassign Green Ticket G20110170

Jim,

We got Scott's tacit okay via Carolyn Lauron, his TA. Carolyn, can you confirm?
Thanks.

Bo Pham

Chief, Projects Branch 1
Division of License Renewal
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
301-415-8450

From: Andersen, James
Sent: Friday, March 18, 2011 11:31 AM
To: Pham, Bo
Subject: RE: Request to Reassign Green Ticket G20110170

Bo, in accordance with the transfer guidance, the mailroom will need to know that NRR got the NRO Division Director's okay. Did you get the okay from Scott Flanders or Nilesh Chokshi? Thanks.

Jim A.

From: Pham, Bo
Sent: Friday, March 18, 2011 11:20 AM
To: Andersen, James
Subject: RE: Request to Reassign Green Ticket G20110170

Hi Jim,

We made sure to connect with NRO & got their agreement before asking Brian to make this request. Thanks.

Bo Pham
Chief, Projects Branch 1
Division of License Renewal
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
301-415-8450

From: Andersen, James
Sent: Friday, March 18, 2011 10:42 AM
To: Holian, Brian; Pham, Bo; Galloway, Melanie; FAST Resource; Chey, Sonary; Lauron, Carolyn
Cc: ExtensionRequest, EDO
Subject: RE: Request to Reassign Green Ticket G20110170

Brian,

We thought NRR was the right office because Dave Pelton was copied on the incoming, and NRR has been involved with these folks in the past. It is not clear to me why NRO should have the lead. However, if NRR and NRO both agree to the reassignment, let the EDO mailroom know and we will make the change.

Also, an e-mail response is fine, we can't change it to "for appropriate action" because SECY did not give us that option.

Jim A.

From: Holian, Brian

Sent: Thursday, March 17, 2011 2:05 PM

To: ExtensionRequest, EDO

Cc: FAST Resource; Chey, Sonary; Pham, Bo; Lauron, Carolyn; Galloway, Melanie

Subject: FW: Request to Reassign Green Ticket G20110170

Please reassign ticket number G20110170 relating to the 2011 Water Resources Program for the Susquehanna River Basin from NRR to NRO.

The basis for reassignment is that no license renewal project is currently in-house, or projected to be submitted, that will affect the Susquehanna River; therefore, NRR does not have relevant information that can be provided to respond to this request. NRO, however, may have relevant input pertaining to applications for new reactor licensing.

In addition, due to the letter's request for input "via email," and a short turnaround time, we also recommend changing the G20110170 special instruction to say "for appropriate action" by NRO/DSER.

Thank you...

Any questions...please cc: Bo Pham

- Brian

From: Lutchenkov, Dimitri
To: Flanders, Scott
Cc: Quinn, Laura; Fetter, Allen; Gibson, Gregory T
Subject: Re: Dropin
Date: Tuesday, March 22, 2011 10:38:54 AM

(b)(5)

Dimitri Lutchenkov
Director, Environmental Affairs
UniStar Nuclear Energy

Sent from my iPhone

On Mar 22, 2011, at 10:31 AM, "Flanders, Scott" <Scott.Flanders@nrc.gov> wrote:

(b)(5)

Scott

From: Lutchenkov, Dimitri [<mailto:dimitri.lutchenkov@unistarnuclear.com>]
Sent: Tuesday, March 22, 2011 10:03 AM
To: Flanders, Scott
Cc: Quinn, Laura; Fetter, Allen; Gibson, Gregory T
Subject: Re: Dropin

(b)(5)

Dimitri Lutchenkov
Director, Environmental Affairs

UniStar Nuclear Energy

Sent from my iPhone

On Mar 22, 2011, at 9:56 AM, "Flanders, Scott"
<Scott.Flanders@nrc.gov> wrote:

I am not sure this was delivered to you, so I am forwarding it to
be sure.

Scott

From: Flanders, Scott
Sent: Tuesday, March 22, 2011 9:53 AM
To: 'dimitri.lutchenkov@unistarnuclear.com'
Cc: Quinn, Laura; Fetter, Allen; Chokshi, Nilesh
Subject: Dropin

(b)(5)

Scott

>>> This e-mail and any attachments are
confidential, may contain legal,
professional or other privileged information,
and are intended solely for the
addressee. If you are not the intended
recipient, do not use the information
in this e-mail in any way, delete this e-mail
and notify the sender. CEG-IP2

From: [Zalcman, Barry](#)
To: [Cook, Christopher](#)
Cc: [Flanders, Scott](#)
Subject: RE: Geoscience and assessment of existing power plants ... and potential new reactor sites
Date: Tuesday, March 22, 2011 9:12:05 AM

Every BC is entitled to a project. Be happy that your project is one of too much attention to detail and not the other.

From: Cook, Christopher
Sent: Friday, March 18, 2011 10:58 AM
To: Flanders, Scott; Zalcman, Barry
Subject: Fw: Geoscience and assessment of existing power plants ... and potential new reactor sites
Importance: High

Sigh...

Chris

Sent from U.S. NRC BlackBerry

(b)(6)

From: [Jasinski, Robert](#)
To: [Lauron, Carolyn](#)
Cc: [Chokshi, Niles](#); [Flanders, Scott](#)
Subject: ACTION: Update of Info Digest Material Due 3/22
Date: Tuesday, March 22, 2011 5:29:49 AM
Importance: High

Carolyn:

Please provide me with your changes by noon today, both changes made in the file location provided and a hard copy of what the changes were. We need to share them with the Front

Office. Thanks.

From: Rosales-Cooper, Cindy
Sent: Monday, March 21, 2011 3:15 PM
To: Jasinski, Robert
Cc: Usilton, William; King, Shannon; Williams, Donna
Subject: RE: ACTION: Update of Info Digest Material Due 3/22

Bob,
The Front Office has no updates.

We would like to see the updates provided by the other Divisions.

Thanks
Cindy

From: Jasinski, Robert
Sent: Monday, March 21, 2011 11:59 AM
To: Lauron, Carolyn; Williams, Donna; Rosales-Cooper, Cindy; Rivera-Varona, Aida; Erwin, Kenneth
Cc: King, Shannon; McGovern, Denise; Araguas, Christian; Clark, Theresa
Subject: ACTION: Update of Info Digest Material Due 3/22
Importance: High

Dear Colleagues:

With regard to the attached green ticket on updating the agency's Info Digest, please be reminded that any changes (*including charts, graphs, etc*)

need to be made to the existing Info Digest file by noon tomorrow (Tuesday, March 22). File Location is under Special Instructions on the EDATS page. Here's the liink:

<http://portal.nrc.gov/edo/staff/CPI/Shared%20Documents/Forms.AllItems.aspx>

Once all changes are completed, please notify William Usilton, Shannon King and me that they have been made in a full and accurate manner.

To date, *we have received notification from Christian (ARP), Theresa (DSRA), and Denise McGovern (DE).*

Please contact Shannon or me if you have any inquiries. Look forward to your notification tomorrow.

As always, many thanks. Regards, Bob.

From: Rivera-Varona, Aida
To: NRO Division Directors; NRO Deputy Division Directors; NRO TA; Sprogeris, Patricia; Dixon-Herrity, Jennifer; Johnson, Michael; Holahan, Gary
Cc: Matthews, David; Madden, Patrick; Akstulewicz, Frank; Erwin, Kenneth; Schum, Constance; DNRLCAL Resource; DSERCAL Resource; Clark, Theresa; Shuaibi, Mohammed; Rosales-Cooper, Cindy; Karas, Rebecca; Bergman, Thomas; Lombard, Mark; Flanders, Scott; McGovern, Denise; Coffin, Stephanie; Ader, Charles; Segala, John; Bailey, Kenneth; (b)(6)
Subject: Program Meeting
Attachments: Program Meeting Agenda 3-22-11.docx

When: Tuesday, March 22, 2011 2:00 PM-4:00 PM (GMT-05:00) Eastern Time (US & Canada).
Where: T-6A1

Note: The GMT offset above does not reflect daylight saving time adjustments.

~~*~*~*~*~*~*~*~*

Attached is the agenda for tomorrow's program meeting.
Just a friendly reminder that the meeting tomorrow is for Division Directors and Deputies only.

Agenda:

2:00 – 4:00 pm - Pre-retreat Discussion for Session 2: Organizational Structure (T. Bergman)
This meeting is for SES (and actors) only.

Please see the HYPERLINK "http://epm.nrc.gov/Support/nro_prog_meeting/default.aspx" Program Meeting SharePoint site for agenda information.

Thanks!
Aida

AGENDA

SES Retreat Session 2 Discussion

March 22, 2011

2:00 p.m. – 4:00 p.m.

T-6A1

Attendees: SES and invited others

Please read: Provided background material

Purpose: Discuss items related to retreat session 2, organizational model

Outcome: Define what is on and off the table for session 2

Agreement and common understanding of decision criteria

Process:

2:00 p.m. – 2:10 p.m.	Introduction Session Leader Facilitator	<i>Charlie Ader</i> <i>Ken Bailey</i>
2:10 p.m. – 2:20 p.m.	Brainstorm Add to List	<i>All</i>
2:20 p.m. – 3:20 p.m.	Discuss On/ Off the Table List	<i>All</i>
3:20 p.m. – 3:40 p.m.	Agree on Decision Criteria	<i>All</i>
3:40 p.m. – 3:50 p.m.	Next Steps	<i>All</i>
3:50 p.m. – 4:00 p.m.	Summary of Agreements Reached And Action Items	

Notes:

From: [Sandra Gonzalez](#)
To: [Flanders, Scott](#)
Subject: Small Modular Reactors Event: Building a New SMR Industry
Date: Tuesday, March 22, 2011 6:06:44 PM



This unique, multi-national event will provide unparalleled insight into:

- Government support for SMR commercialization
- Commercialization of all leading SMR designs
- Military, utility and other customer perspectives
- Developing an SMR supply chain
- Finance and investment outlook

Come hear the perspectives of manufacturers, financiers, customers and reactor developers!

Three Great Events in One:

Advanced SMR Technology Symposium

Building the Value Chain for Commercializing Small Modular Reactors 2011

Licensing Small Modular Reactors Workshop

EVENT SCHEDULE

Symposium: Advanced SMR Technology
Monday, March 28, 2011 8:00 am- 5:00 pm

Summit: Building the Value Chain for Commercializing Small Modular Reactors 2011
Tuesday, March 29, 2011 7:00 am- 5:45 pm and
Wednesday, March 30, 2011 7:00 am- 4:00 pm

Workshop: Licensing Small Modular Reactors
Thursday, March 31, 2011 8:00 am- 5:00 pm

The "yes" button below will begin the registration process.

The "no" button will decline the invitation and discontinue further announcements regarding this event.

Where Almas Temple Club
1315 K Street, Washington, DC 20005

FEE [View Tuition Details](#)

[More Event Information](#)

[View Event Agenda](#)

Please respond by clicking one of the buttons below



Having trouble with the link? Simply copy and paste the entire address listed below into your web browser:
<http://guest.cvent.com/d/HbBCyczwYkm3kusccTF1pg/znlt/P1/1Q?>

If you no longer want to receive emails from Infocast please click the link below.
[Opt-Out](#)



From: [Dell Federal Government](#)
To: [Flanders, Scott](#)
Subject: Don't forget to stop by Dell's booth at GovSec
Date: Tuesday, March 22, 2011 10:21:52 AM

[Click here if you are having difficulty viewing this email.](#)



Get the technology solutions you need at GovSec to fulfill your missions



Join us at the Government Security Conference and Exposition, the foremost authority on securing the nation, on March 29-31st in Washington D.C.

Dell will be at booth #1015 to demonstrate our latest solutions for DISCC, Digital Forensics, Rugged Mobility, mobile phones, new Latitudes/Laptops, Enterprise products and services.

Please join us on March 30th at 2:15-2:50pm for Dell's speaker on Cybersecurity in the Cyber Theater.

Discover how Dell technology and tailored solutions can help you perform your work more efficiently than ever. We hope to see you there.



Government Security Conference & Expo
March 29-31, 2011
Washington, D.C.

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From: [PKWARE, Inc.](#)
To: [Flanders, Scott](#)
Subject: Ensure FIPS Compliance
Date: Tuesday, March 22, 2011 7:46:41 AM



Dear Scott,

Security is an inherent part of information technology.

With minimal tolerance for data compromise, it is critical for government agencies to ensure data is protected at all times, even when it travels outside your organization.



The PKWARE Solution is the *only* system that provides complete data container portability for managing, moving, storing and securing data across the extended enterprise, internally and externally, from the mainframe to the desktop and into the Cloud.

Download the whitepaper, *Secure Government Computing*, to learn about the standards for data encryption as outlined by the NIST and learn how to determine if your agency is in compliance with FIPS 140-2.

As a benefit to you, the PKWARE Solution meets data protection standards for Federal Government computing, addressing FIPS 140, FIPS 201 and FDCC requirements. Ensure your software is in FIPS compliance and conforming to best practices.

Sincerely,

The PKWARE Team

www.pkware.com



If you no longer wish to receive these emails, click on the following link: [Unsubscribe](#)

From: [Ragan Communications](#)
To: [Flanders, Scott](#)
Subject: Transform your work atmosphere with better communication
Date: Tuesday, March 22, 2011 12:01:41 PM



Tweet, talk or text: How to effectively communicate in a high-tech world

Wednesday, April 20, 2011 • 2 - 3:15 p.m. Central Standard Time

- Is your inbox full of one-word e-mails?
- Do people call you for something that can be quickly answered in a text?
- Can you use advice on the do's and don'ts of social networking on the job?

Manage Better and Senior Facilitator for BRODY Professional Development Amy Glass have teamed up to bring you the webinar to improve your workplace interaction and get your point across.

Good communication gets things done at work! Join us for this event on Wednesday, April 20, 2011 at 2:00 p.m. CST and you will:

- Understand your own communication style
- Discover how to get better results from e-mail
- Explore the nuances of social networking "netiquette"
- Rediscover the etiquette of, and best uses for, phone, email and texting
- And more!

Register Today!



REGISTER NOW

Phone registrations, please call 800.493.4867 and mention code TEPN.

Unable to attend the webinar on April 20, 2011 at 2 p.m. Central?

No problem!

[Order a multimedia CD recording of this event.](#)

(The CD includes all presentation handouts.)

What's a manageBetter.biz webinar?

A manageBetter.biz webinar is a 75-minute real-time audio presentation (presented over the phone) combined with a simultaneous, visual presentation on the web. The 60-minute presentation is followed by a 15-minute live Q&A with the speaker.

Remove yourself from future email here

Ragan Communications, Inc. | 111 E. Wacker Dr. | Ste. 500 | Chicago, IL 60601 | USA |
cservice@ragan.com
This message was sent to scf@nrc.gov

From: ODriscoll, James
Sent: Tuesday, March 22, 2011 8:19 PM
To: Jackson, Christopher; Carneal, Jason; McKirgan, John
Subject: RE: Reference to RG in Section 6.4 - followup action from Chapter Day.

Jason/Chris,
I'm ok with this change.
Jim

From: Jackson, Christopher
Sent: Monday, March 21, 2011 11:49 AM
To: Carneal, Jason; ODriscoll, James; McKirgan, John
Subject: RE: Reference to RG in Section 6.4 - followup action from Chapter Day.

Jason,

I have reviewed the guidance and I offer the following revision. Can you see if Bob agrees?

CJ

From: Carneal, Jason
Sent: Monday, March 21, 2011 2:33 PM
To: ODriscoll, James; Jackson, Christopher
Subject: Reference to RG in Section 6.4 - followup action from Chapter Day.

Chris and Jim:

The one follow-on for SPCV from Friday's Chapter Day was providing the correct RG to reference in the following paragraph:

Type of Pressurization System and CRE Zone

(b)(5)

(b)(5)

Michelle will be giving input on her two actions from the meeting sometime today.

Thanks,

Jason

JASON CARNEAL
PROJECT MANAGER
U.S. NUCLEAR REGULATORY COMMISSION
NRO/DNRL/NARP (T-6J4)
301-415-3813

-----Original Message-----

From: Ashley, Clinton

Sent: Tuesday, March 22, 2011 6:47 PM

To: Jackson, Christopher

Subject: RE: US APWR and debris allocation

See attached

-----Original Message-----

From: Jackson, Christopher

Sent: Tuesday, March 22, 2011 11:39 AM

To: Ashley, Clinton

Subject: RE: US APWR and debris allocation

Do know if we have a firm time and date for the meeting?

-----Original Message-----

From: Ashley, Clinton

Sent: Tuesday, March 22, 2011 11:14 AM

To: Jackson, Christopher

Subject: RE: US APWR and debris allocation

Chris thanks for the feedback.

I agree with adding the clarifying statement.

I also appreciate the discussion on defense in depth and expectations regarding the overall plant versus SSC's.

Clint

-----Original Message-----

From: Jackson, Christopher

Sent: Tuesday, March 22, 2011 4:22 AM

To: Ashley, Clinton

Subject: RE: US APWR and debris allocation

Great summary and not too lengthy.

Only a few minor comments.

(b)(5)

CJ

-----Original Message-----

From: Ashley, Clinton

Sent: Monday, March 21, 2011 8:07 PM

To: Jackson, Christopher

Subject: US APWR and debris allocation

(b)(5)

At the end, I propose to address the below discussion in an RAI as follows:

(b)(5)

Clint
x2016

(b)(5)

(b)(5)

(b)(5)

From: NRO ARP ARB1 2 Cal Resource
To: RES_DSA_Calendar Resource; Reckley, William; Mayfield, Michael; Uhle, Jennifer; Gibson, Kathy; Valentin, Andrea; Rubin, Stuart; Zaki, Tarek; Basu, Sudhamay; Carlson, Donald; Scott, Michael; NRO Division Directors; Norato, Michael; Coffin, Stephanie; Magruder, Stewart; Ray, Neil
Cc: Kelly, Joseph; Coe, Doug; Lui, Christiana; Case, Michael; Richards, Stuart; Gavrilas, Mirela; Coyne, Kevin; Bergman, Thomas
Subject: Canceled: Weekly RES/NRO Advanced Reactor Meeting/Conference Call
Importance: High

When: Wednesday, March 23, 2011 3:30 PM-4:30 PM (GMT-05:00) Eastern Time (US & Canada).
Where: T7A01

Note: The GMT offset above does not reflect daylight saving time adjustments.

~~*~*~*~*~*~*~*~*

In view of conflicting schedules and the NRO All-Hands meeting this Wed. we are cancelling this week's meeting.

Good afternoon,

All NRO Staff wishing to attend this video-teleconference with RES, please be advised that this week's meeting will be held in T7A01. I have invited all Division Directors to attend if they would like. Please forward to any others who may be interested.

From: ACAA Resource
To: [Abdullahi, Zena](#); [Abraham, Susan](#); [Adkison, Carol](#); [Agneu, Terry](#); [Albert, Ronald](#); [Alexander, Cheryl](#); [Allen, Linda](#); [Anderson, Shaun](#); [Archer, Randy](#); [Armstrong, Garry](#); [Augustus, Reginald](#); [Ayres, Annette](#); [Bailey, Kenneth](#); [Balarabe, Sarah](#); [Barnes, Anthony](#); [Barnes, Robin](#); [Barnett, Nina](#); [Beckford, Kaydian](#); [Bell, Marvin](#); [Bell, Ralph](#); [Bellinger, Alesha](#); [Benton, Laray](#); [Bethea, Rhonda](#); [Bloomer, Tamara](#); [Blount, Tom](#); [Bolding, Virginia](#); [BowdenBerry, Elva](#); [Bowman, Cassandra](#); [Boyd, Lena](#); [Boyer, Rachel](#); [Bright, Richard](#); [Brown, Eva](#); [Brown, Milton](#); [Brown, Terrise](#); [Brown, Theron](#); [Brydson, Ava](#); [Bumpass, Sheila](#); [Burkhalter, Cornelia](#); [Burnette, Danielle](#); [Burton, Tasheena](#); [Burton, William](#); [Bush, Tyasha](#); [Bush-Goddard, Stephanie](#); [Butler, Rhonda](#); [Byrd, Calvin](#); [Campbell, Lillie](#); [Cannady, Ashley](#); [Carter, Ted](#); [Champ, Billie](#); [Champion, Bryan](#); [Champion, Tanva](#); [Claggett, Lauren](#); [Clark, Phyllis](#); [Cloyd, SherVerne](#); [Coates, Anissa](#); [Coates, Carlotta](#); [Coleman, Nicole](#); [Collins, Chiquita](#); [Compton, Makeeka](#); [Conti, Tony](#); [Cook, Bonita](#); [Cooper, Kiona](#); [Cooper, LaTova](#); [Cornelius, David](#); [Cotton, Karen](#); [Courts, Tonya](#); [Crawford, Carrie](#); [Cross-Prather, Peggy](#); [Crutchfield, Shirley](#); [Cunanan, Davida](#); [Currie, Bruce](#); [Curry, Jeanette](#); [Davis, Chon](#); [Davis, Gwendolyn](#); [Davis, Mildred](#); [DeBose, Michelle](#); [Deeds, Erin](#); [Dekle, Cynthia](#); [Donnell, Tremaine](#); [Dorfman, Joel](#); [Dorm, Paula](#); [Dorsey, Cynthia](#); [Downey, Steven](#); [Dozier, Tamsen](#); [DuBose, Andree](#); [Duvigneaud, Dylanne](#); [Edmonds, Shavon](#); [Edwards, Denise](#); [Ellis, Twana](#); [Etheridge, Peggy](#); [Evans, Jonathan](#); [Fetter, Allen](#); [Fields, Leslie](#); [Fields, Tiffany](#); [Flanders, Scott](#); [Fleming, Kreslyon](#); [Fletcher, Michele](#); [Floyd, Daphene](#); [Foggie, Kirk](#); [Ford, Tanya](#); [Fortune Grasty, Tojuana](#); [Franklin, Carmen](#); [Garland, Stephanie](#); [Gorham, Tajuan](#); [Govan, Tekia](#); [Graham, Thorne](#); [Graves, Herman](#); [Gray, Anita](#); [Green, Matthew](#); [Green, Rodneshia](#); [Greene, LaTosha](#); [Greene, Natasha](#); [GreenJr, Noble](#); [Grimes, Charemagne](#); [Hardy, Ray](#); [Harris, Natasha](#); [Hatchett, Gregory](#); [Hawkins, Sarenee](#); [Hayes, Mahdi](#); [Heath, Maurice](#); [Heck, James](#); [Hemphill, Khadijah](#); [Henderson, Mable](#); [Hester, Janice](#); [Hicks, Angelisa](#); [Higginbotham, Tina](#); [Hill, Kendra](#); [Holmes, Beverly](#); [Holston, Coleda](#); [Hood, Tanya](#); [Hopkins, Ogbonna](#); [Horne, Ronnie](#); [Isaac, Patrick](#); [Jackson, Deborah](#); [Jackson, Kia](#); [Jackson, Rahsean](#); [Jacobs-Baynard, Elizabeth](#); [Jamerson, Kellee](#); [Jennifer, Phyllis](#); [Jenkins, Barbara](#); [Jenkins, Ronaldo](#); [Jessie, Janelle](#); [Johnson, Dante](#); [Johnson, Joanne](#); [Johnson, Kevin](#); [Johnson, Michael](#); [Johnson, Sandra](#); [Jones, Andrea](#); [Jones, Henry](#); [Jones, Kevin](#); [Jones, Kimberly](#); [Jones, Rosalyn](#); [Jones, Wanda](#); [Jordan, Natreon](#); [Kelley, Corenthis](#); [Khanna, Meena](#); [King, Beverly](#); [King, Ikeda](#); [Kinney, Penelope](#); [Knox-Davin, Edna](#); [Larkins, John](#); [Lee, Brian](#); [Lewis, Antoinette](#); [Lewis, Doris](#); [Lindsay, Haile](#); [Longmire, Pamela](#); [Mahdi, Deborah](#); [Majeed, Fair](#); [Marshall, Michael](#); [Marshall, Shawn](#); [Martin, Kamishan](#); [Martin, Shannan](#); [Maupin, Cardelia](#); [McCravy, Cheryl](#); [McIntosh, Angela](#); [McKelvin, Sheila](#); [McKenzie, Linda](#); [McKoy Moore, Lamiece](#); [Mensah, Tanya](#); [Miles, Brenda](#); [Mitchell, Linda](#); [Mitchell, Reggie](#); [Montgomery, Shandeth](#); [Moon, Tarsha](#); [Moore, Johari](#); [Moore, Tiffany](#); [Morgan, Nadiyah](#); [MorganButler, Kimyata](#); [Morton, Wendell](#); [Moses, Kay](#); [Mott, Kenneth](#); [Murdock, Darrell](#); [Murphy, Jerome](#); [Negrin, Darlene](#); [Nesmith, Sandra](#); [Newell, Brian](#); [Newell, Karenina](#); [Newman, Tonya](#); [Nqbea, Evangeline](#); [Obodoako, Aloysius](#); [Opara, Stella](#); [Ortiz, Laverne](#); [Paige, Jason](#); [Penny, Melissa](#); [Perkins, Leslie](#); [Perry, Jamila](#); [Peterson, Gordon](#); [Powell, Marlon](#); [Powell, Tamara](#); [Pulliam, Timothy](#); [Purdie, Deonna](#); [Ray, Neil](#); [Redden, Adrienne](#); [Rice, Avanna](#); [Richardson, Jerry](#); [Ricketts, Paul](#); [Roach, Edward](#); [Robbins, Emily](#); [Roberts, Beverly](#); [Roberts, Darrell](#); [Robinson, Debra](#); [Robinson, Edward](#); [Robinson, Gary](#); [Robinson, Rasmey](#); [Rodgers, Mary](#); [Ross, Robin](#); [Rowley, Jonathan](#); [Sahle, Solomon](#); [Sanchez, Chanel](#); [Sanders, Serita](#); [Scales, Kerby](#); [Simms, Dannette](#); [Simms, Sophonia](#); [Sims, Carolyn](#); [Singleton, Melana](#); [Smith, Cathy](#); [Smith, Shawn](#); [Smith, Tuwanda](#); [Smvire-Saleem, Celeste](#); [Somerville, Glenda](#); [Somerville, Joseph](#); [Spaulding, Deirdre](#); [Stanfield, Richard](#); [Stevens, Mackenzie](#); [Stewart, Fredonia](#); [Stewart, Sharon](#); [Stokes, Tracey](#); [Stubbs, Angelo](#); [Suber, Gregory](#); [Sutton, Mallecia](#); [Sweat, Tarico](#); [Sykes, Marvin](#); [Tadesse, Rebecca](#); [Talley, Sandra](#); [Tate, Travis](#); [Taylor, Sherrie](#); [Terry, Tomeka](#); [Thaggard, Mark](#); [Thomas, Brian](#); [Thomas, Loretta](#); [Thomas, Vaughn](#); [Thompson, Jacqueline](#); [Thurston, Carl](#); [Thweatt \(ADM\), JoAnne](#); [Tope, Celestia](#); [Trowell, Tina](#); [Valentin, Andrea](#); [Wade, Tony](#); [Walker, Dwight](#); [Walker, Harold](#); [Walker, Jacquan](#); [Walker-Smith, Antoinette](#); [Walls, Carol](#); [Warren, Brenett](#); [Washington, Dorothea](#); [Way, Ralph](#); [West, Garmon](#); [Wharton, Raynard](#); [Wheatley, Wanda](#); [White, Duane](#); [White, Jason](#); [Whitt, Emarsha](#); [Wilkins, Lynnea](#); [Williams, Anthony](#); [Williams, Barbara](#); [Williams, Evelyn](#); [Williams, Gerald](#); [Williams, Kevin](#); [Williams, Monique](#); [Williams-Johnson, Patrice](#); [Williamson, Alicia](#); [Wimbush, Andrea](#); [Yerokun, Jimi](#); [Young, Mitzl](#); [Zuberi, Sardar](#)
Subject: ACAA All-Employees Meeting
Attachments: [Agenda032311.docx](#)

When: Wednesday, March 23, 2011 12:00 PM-1:00 PM (GMT-05:00) Eastern Time (US & Canada).
Where: T-7A1

Note: The GMT offset above does not reflect daylight saving time adjustments.

~~*~*~*~*~*~*~*~*

~REMINDER~

The next ACAA All-Employees meeting is scheduled for Wednesday, March 23rd from 12 noon – 1:00 pm in T-7A1. The meeting agenda is attached and you are welcome to bring your lunch. We hope you are able to attend!

NEW LOCATION

The ACAA All-Employees meetings are now being held in room T-7A1.

ACAA All-Employees Meeting
Wednesday, March 23, 2011
12:00pm – 1:00pm
Room T-7A1

(This meeting will be video-conferenced to the regional offices)

AGENDA

I. **Welcome/Introduction**

II. **Presentation – “Resume Writing”**

Presenter: Dafna Silberfeld, HR Specialist

III. **Staff Comments/Concerns/Feedback**

IV. **Upcoming Events & Reminders**

March (National Women’s History Month)

25 Maryland Day
29-30 Leadership Orientation Course, Office of Human Resources, Karmen Baretich
30 ACAA Happy Hour/Celebration for Debbie Jackson [Dave and Busters @ 5:30pm – 8:00pm]

April (Records and Information Management Month)

1 April Fool’s Day
15 Deadline for filing income taxes
Deadline for deposits for EWRA European Cruise
17 Palm Sunday
19 Passover
Patriots’ Day
20 Quad Cities Exercise
22 Good Friday
Earth Day
24 Easter

V. **SBCR Remarks**

[If you know of someone not receiving emails from ACAA and would like to, please email us at ACAA.Resource@nrc.gov to have their name added to our distribution list.]

(This is our recurring bridge line and passcode for use throughout the year.)

Bridge Line: 1-800-619-8711

Passcode: (b)(6)

From: Williams, Donna on behalf of Johnson, Michael
To: NRO Distribution
Subject: NRO All Hands meeting

When: Wednesday, March 23, 2011 2:00 PM-4:00 PM (GMT-05:00) Eastern Time (US & Canada).
Where: Marriott North Bethesda

Note: The GMT offset above does not reflect daylight saving time adjustments.

~~*~*~*~*~*~*~*~*

Agenda:

Mike Johnson remarks

Overview of significant technical issues
Digital I&C - DE
Modifying the Risk Informed Regulatory Guidance for New Reactors – DSRA
Environmental Issues - DSER

Commissioner Apostolakis remarks

EEO Advisory Committee – APAAC

From: NRO ARP ARB1 2 Cal Resource
To: RES DSA Calendar Resource; Reckley, William; Mayfield, Michael; Uhle, Jennifer; Gibson, Kathy; Valentin, Andrea; Rubin, Stuart; Zaki, Tarek; Basu, Sudhamay; Carlson, Donald; Scott, Michael; NRO Division Directors; Norato, Michael; Coffin, Stephanie; Magruder, Stewart; Ray, Neil
Cc: Kelly, Joseph; Coe, Doug; Lui, Christiana; Case, Michael; Richards, Stuart; Gavrilas, Mirela; Coyne, Kevin; Bergman, Thomas
Subject: Weekly RES/NRO Advanced Reactor Meeting/Conference Call

When: Wednesday, March 23, 2011 3:30 PM-4:30 PM (GMT-05:00) Eastern Time (US & Canada).
Where: T7A01

Note: The GMT offset above does not reflect daylight saving time adjustments.

~~*~*~*~*~*~*~*~*

In view of conflicting schedules and the NRO All-Hands meeting this Wed. we are cancelling this week's meeting.

Good afternoon,

All NRO Staff wishing to attend this video-conference with RES, please be advised that this week's meeting will be held in T7A01. I have invited all Division Directors to attend if they would like. Please forward to any others who may be interested.

From: [Cook, Christopher](#)
To: [Flanders, Scott](#); [Munson, Clifford](#); [Chokshi, Niles](#)
Subject: FYI: Weijun to present at today's All hands
Date: Wednesday, March 23, 2011 8:21:26 AM

For awareness. Weijun has been asked by DCIP to talk thru a 3 minute video showing a time-lapse images/video of the Vogtle excavation. Weijun and I got the request yesterday afternoon.

Chris

From: Beardsley, James
Sent: Wednesday, March 23, 2011 8:03 AM
To: Wang, Weijun
Cc: Cook, Christopher
Subject: RE: All hands meeting - request for DCIP help

Weijun,

I think the files it too big, but I have the DVD sitting on my desk.

Jim Beardsley
Chief, Construction Inspection Program Branch (CIPB)
U.S. Nuclear Regulatory Commission
Office of New Reactors
Division of Construction, Inspection, & Operational Programs
Office: T-7D49
MS: T-7D24
W: (301) 415-5998
C: (b)(6)

From: Wang, Weijun
Sent: Wednesday, March 23, 2011 7:17 AM
To: Beardsley, James
Cc: Cook, Christopher
Subject: RE: All hands meeting - request for DCIP help

Jim:

Yes, I can explain what was and is happening since the beginning of the excavation at the Vogtle site. It will help if you could forward me the video (if the file is too big, then I can go to your office to get the DVD). Thanks.

Weijun

(301)415-1175

From: Beardsley, James
Sent: Tuesday, March 22, 2011 1:00 PM
To: Beardsley, James; Wang, Weijun
Cc: Cook, Christopher
Subject: RE: All hands meeting - request for DCIP help

I have a copy of the DVD if you want to take a look.

Jim Beardsley
Chief, Construction Inspection Program Branch (CIPB)
U.S. Nuclear Regulatory Commission
Office of New Reactors
Division of Construction, Inspection, & Operational Programs
Office: T-7D49
MS: T-7D24
W: (301) 415-5998
C: [REDACTED] (b)(6)

From: Beardsley, James
Sent: Tuesday, March 22, 2011 12:33 PM
To: Wang, Weijun
Cc: Cook, Christopher
Subject: RE: All hands meeting - request for DCIP help

Weijun,

As I stated in the email below, Mike Johnson would like to show a time lapsed video of the Vogtle construction site at the All Hands Meeting tomorrow. It starts with the clearing of the trees and goes through the excavation and refilling of the safety related areas. My thought is that I would introduce the video and describe the initial portion. When it gets into the excavation and then the safety fill of the construction areas, you could take over and explain what is happening. The video runs around three minutes.

Jim Beardsley
Chief, Construction Inspection Program Branch (CIPB)
U.S. Nuclear Regulatory Commission
Office of New Reactors
Division of Construction, Inspection, & Operational Programs
Office: T-7D49
MS: T-7D24
W: (301) 415-5998
C: [REDACTED] (b)(6)

From: Cook, Christopher
Sent: Tuesday, March 22, 2011 12:05 PM
To: Beardsley, James; Wang, Weijun
Cc: Karas, Rebecca
Subject: RE: All hands meeting - request for DCIP help

Yes. Jim, Weijun is the right person to coordinate with.

Chris

From: Karas, Rebecca
Sent: Tuesday, March 22, 2011 11:58 AM
To: Beardsley, James
Cc: Cook, Christopher; Wang, Weijun
Subject: RE: All hands meeting - request for DCIP help

I am thinking that would be Weijun. Please coordinate with Chris Cook.

Rebecca Karas, Chief

Geosciences and Geotechnical Engineering Branch 1
Division of Site and Environmental Reviews
Office of New Reactors
U.S. Nuclear Regulatory Commission
Phone: 301-415-7533
Fax: 301-415-5397

From: Beardsley, James
Sent: Monday, March 21, 2011 8:18 AM
To: Karas, Rebecca
Subject: FW: All hands meeting - request for DCIP help

Rebecca,

I have a favor to ask. In the email below, the NRO Front office asked DCIP to explain a DVD that Vogtle gave the EDO at the All Hands This week. The DVD is a time delayed video for the Vogtle construction site over the past couple years. I can introduce the video, but most of the work they have done is digging and then filling the "holes." I was hoping that one of your folks could explain that part of the process at the All Hands. Aida Rivera has the DVD if you would like to take a look.

Jim Beardsley
Chief, Construction Inspection Program Branch (CIPB)
U.S. Nuclear Regulatory Commission
Office of New Reactors
Division of Construction, Inspection, & Operational Programs
Office: T-7D49
MS: T-7D24
W: (301) 415-5998
C: (b)(6)

From: Rivera-Varona, Aida
Sent: Friday, March 11, 2011 8:49 AM
To: Williams, Donna
Cc: Tappert, John; Beardsley, James
Subject: RE: All hands meeting - request for DCIP help

Donna,

Yes. We can definitely support. If you can provide me with the copy of the video, we will start working on it.

Thanks!
Aida

From: Williams, Donna
Sent: Friday, March 11, 2011 8:37 AM
To: Rivera-Varona, Aida
Cc: Tappert, John
Subject: All hands meeting - request for DCIP help

Aida

During a recent trip to Vogtle, Nathan Sanfilippo was given a dvd of timelapse photos of the Vogtle site construction. Mike would like to show it at the March 23 all hands meeting, to give staff who won't get a chance to get to the site, an understanding of what is happening there. The video is about 4 minutes long. It would be very helpful to have someone who is familiar with the construction activities narrate the video to explain what is happening and point out structures, etc. in the video (i.e., how far they are digging down, explain the backfill process, point out the modular assembly buildings, etc.) . I will give you the dvd ahead of time so that person can view it and prepare some remarks. We plan to do this at the end of the meeting (around 3:55).

Please let me know who is available.

Thanks

Donna

From: Chokshi, Niles
To: Raione, Richard
Cc: Flanders, Scott
Subject: RE: Request for Thursday
Date: Wednesday, March 23, 2011 10:42:02 AM

That's fine, but appoint acting BC today and let affected people know.

From: Raione, Richard
Sent: Wednesday, March 23, 2011 8:08 AM
To: Chokshi, Niles
Subject: Request for Thursday

(b)(5)

Thank you.

Richard Raione, PG, CPG, CGWP
US NRC, Office of New Reactors
Chief, Hydrologic Engineering Branch
301-415-7190
cell: (b)(6)
fax: 301-415-5397
richard.raione@nrc.gov

From: Jackson, Christopher
Sent: Wednesday, March 23, 2011 11:28 AM
To: Hsij, Yi-Hsiung; McKirgan, John; Hayes(NRO), Michelle
Subject: FW: AP1000 Final SE Chapter 6 - Concurrence

Gene,

Can you take a look at this sentence? It was in the ISL mark-up. Can you confirm it is OK?

CJ

(b)(5)

From: McKirgan, John
Sent: Monday, March 21, 2011 8:29 PM
To: Jackson, Christopher; Grady, Anne-Marie
Subject: FW: AP1000 Final SE Chapter 6 - Concurrence

Chris. Anne-Marie,

Can you please review this SE and give me a recommendation for concurrence by 3/25?

PS Michelle has agreed to look at her stuff

Thanks,

John

From: Buckberg, Perry
Sent: Friday, March 18, 2011 11:21 AM
To: Donoghue, Joseph; Terao, David; McKirgan, John
Cc: Hsij, Yi-Hsiung; Budzynski, John; Honcharik, John; Makar, Gregory; Ray, Neil; Downey, Steven; McKenna, Eileen; VanWert, Christopher; Forsaty, Fred; Ford, Tanya; Wagage, Hanry; Drozd, Andrzej
Subject: AP1000 Final SE Chapter 6 - Concurrence

Branch Chiefs,

Please review the attached marked-up version of Chapter 6 and concur/comment in reply by CoB **March 25, 2011**. The attached shows all of the changes made since the Advanced Final SE chapter was issued. In addition, please see the tech editor's [specific comments/questions](#) 1 thru 6 below and address separately in an e-mail to me only if needed.

Both this marked-up version and a clean version of AP1000 Final Safety Evaluation (FSE) draft Chapter 6 has been placed in the [SharePoint](#) (link is below).

(b)(5)

Thanks,

Perry Buckberg

Senior Project Manager
Office of New Reactors
AP1000 Projects Branch
x1383 T-07E31

Specific Comments/Questions

1)

2)

(b)(5)

3)

Study Cases 4 through 10 using larger values of the new resistance parameters

(b)(5)

Please confirm the revised statement covers the authors intent. The proposed edits add the language used in the RAI response.

4)

5)

(b)(5)

6)

Please verify this revision conveys the authors intent. CFRA is not defined in the technical specifications or DCD Section 6.4.

The SharePoint folder (Design Certification Review - AP1000 Design / Project Documents / All AP1000 DCA Documents / Tool 25 FSE Chapters) is:

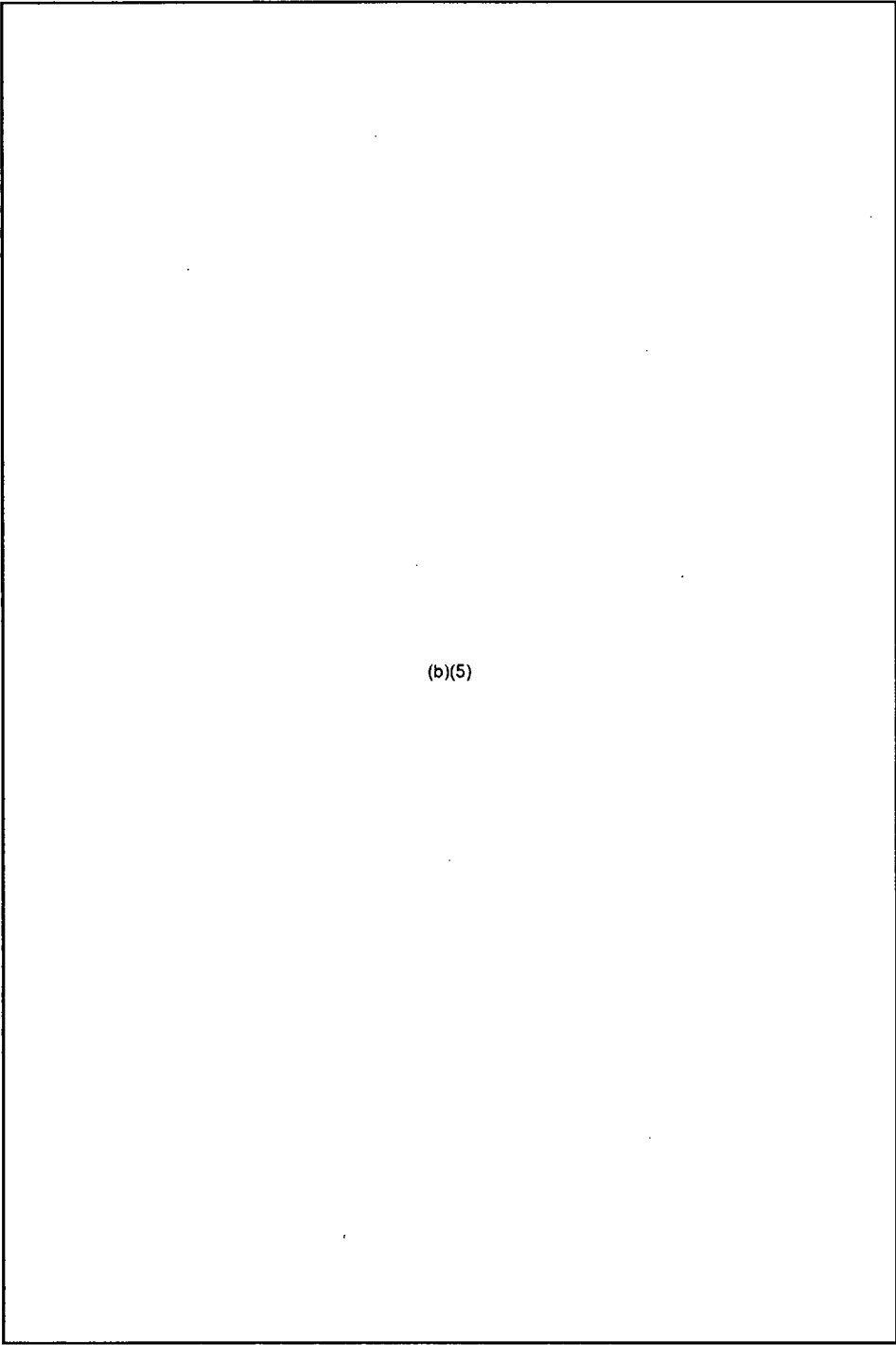
<http://epm.nrc.gov/NRCPWA/Design%20Certification%20Review%20-%20Westinghouse%20AP1000/Project%20Documents/Forms/Default.aspx?RootFolder=%2fNRCPWA%2fDesign%20Certification%20Review%20%2d%20Westinghouse%20AP1000%2fProject%20Documents%2fAll%20AP1000%20DCA%20Documents%2fTool%2025%20%2d%20FSE%20Chapters&FolderCTID=&View=%7bDE1B422C%2dDFCA%2d4B68%2dA34D%2d2EF3460A463A%7d>

- **AP1000 SharePoint** - (Tool 25 - FSE Chapters)
 - Chapters for Concurrence – clean
 - Chapters for Concurrence – mark-ups

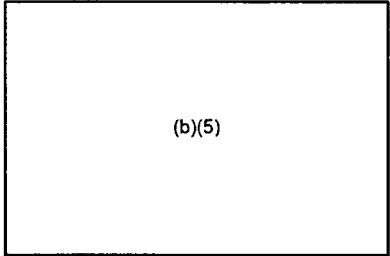
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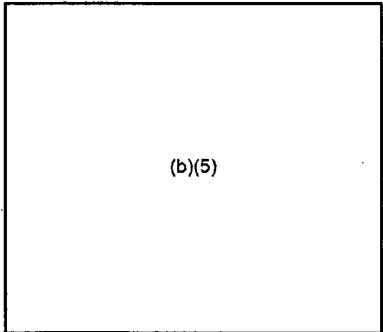
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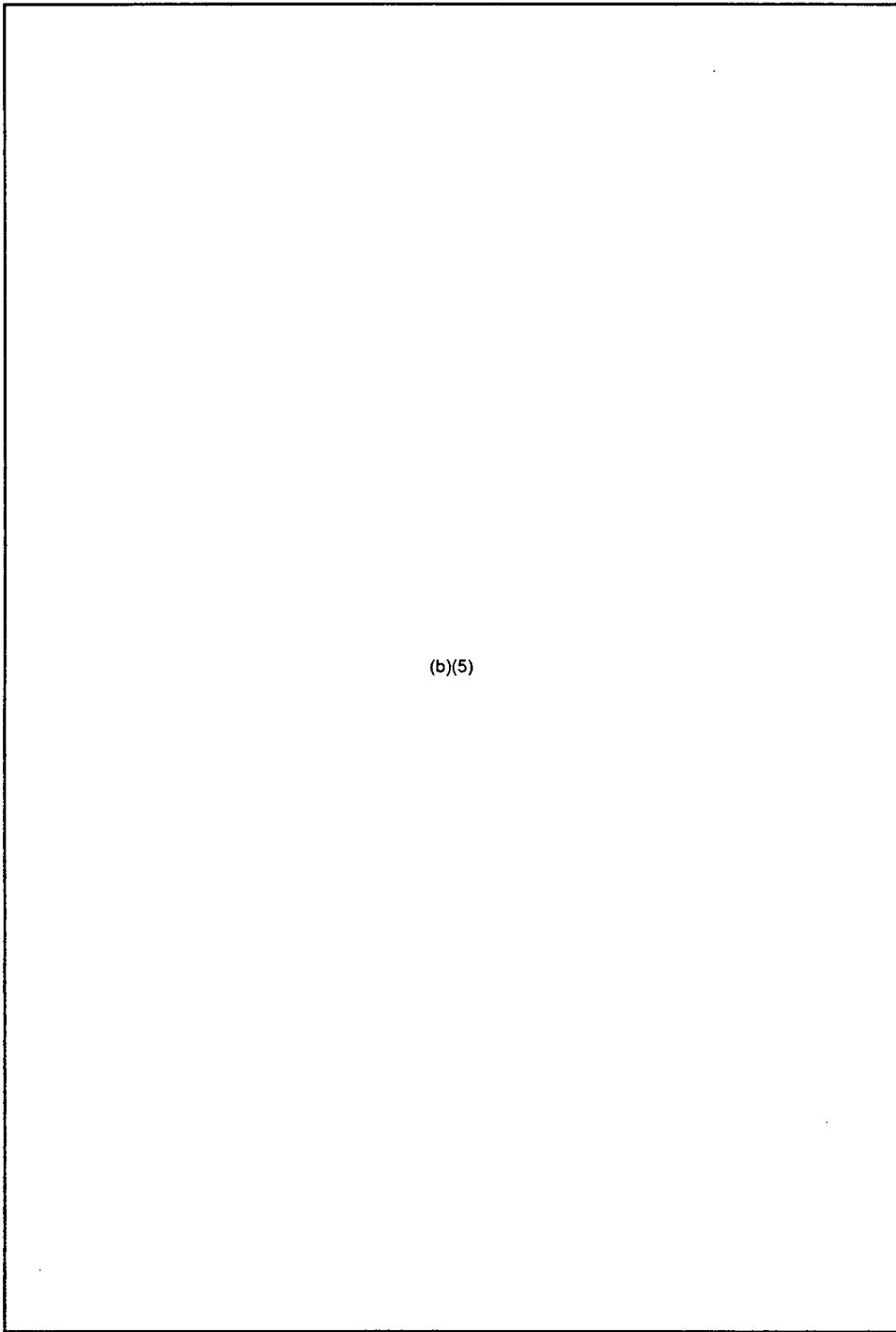
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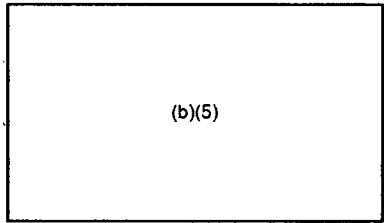
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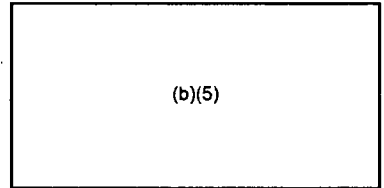
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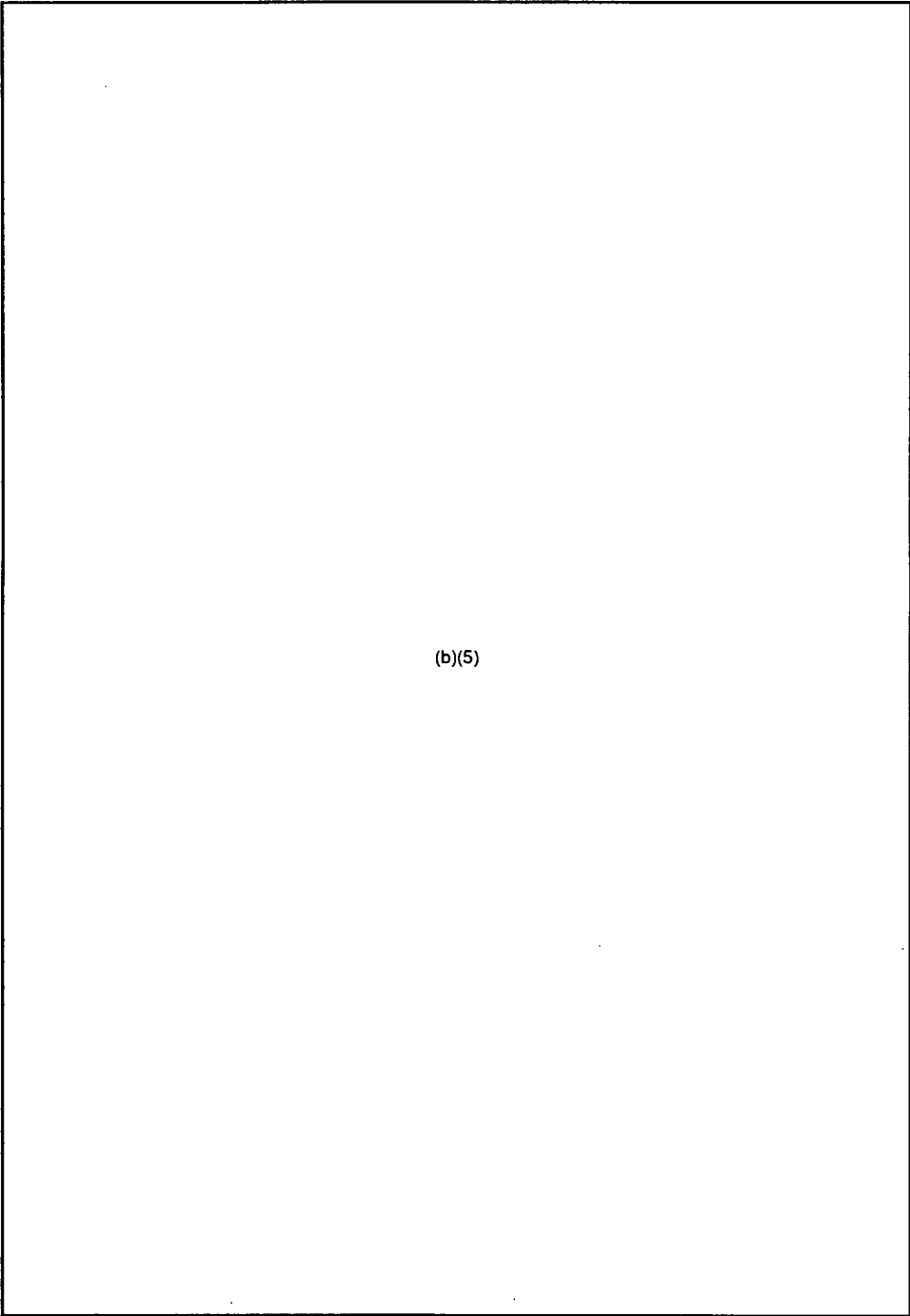
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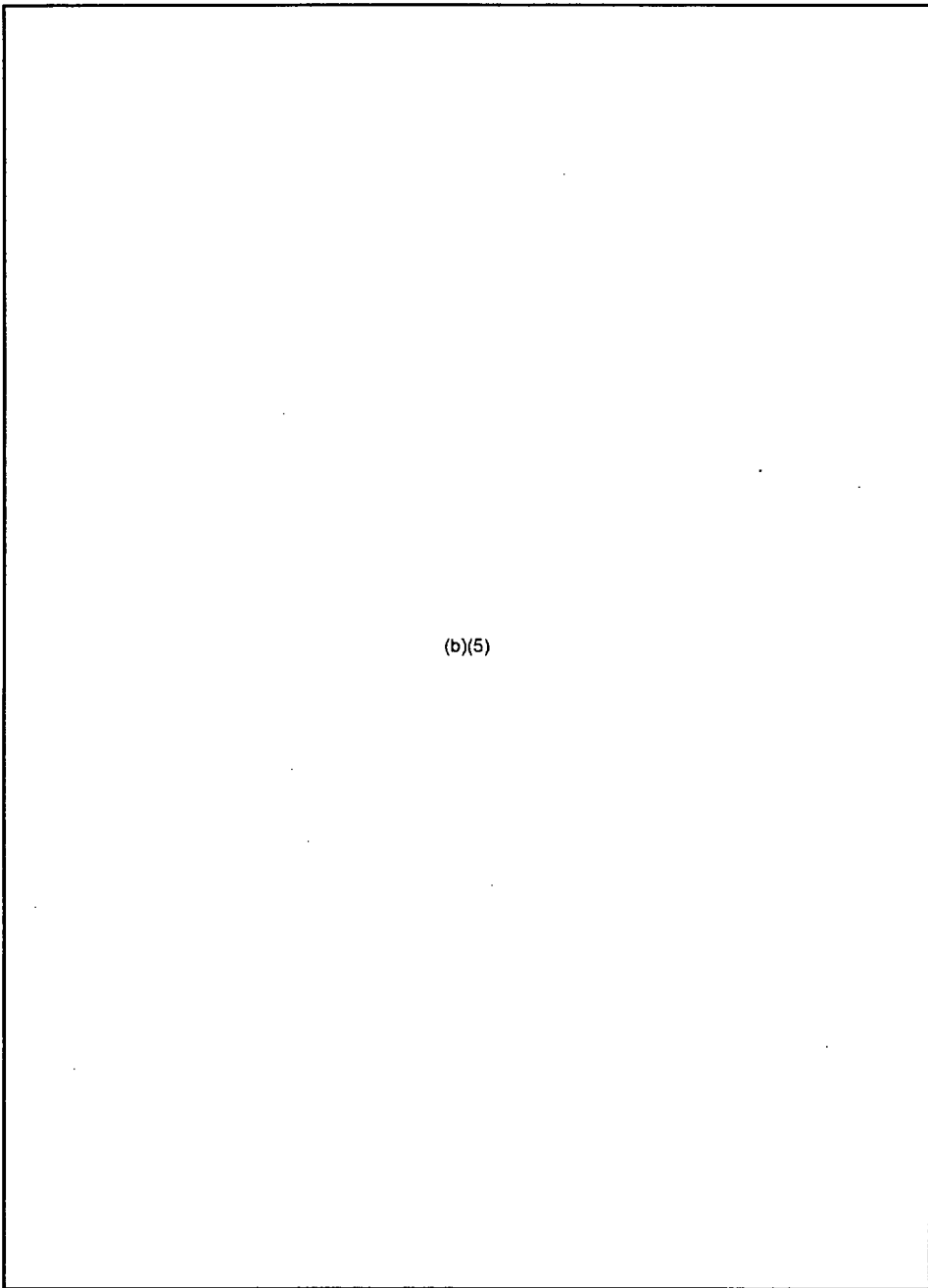


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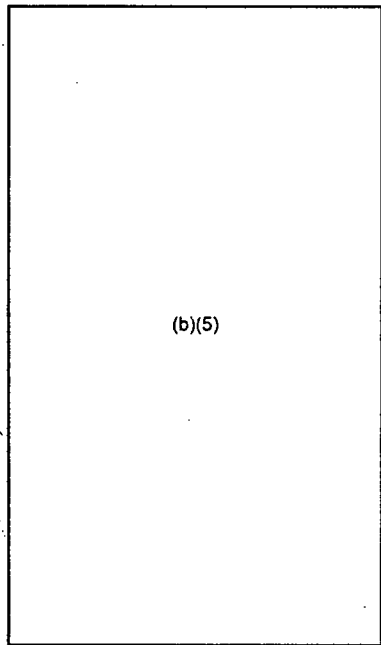
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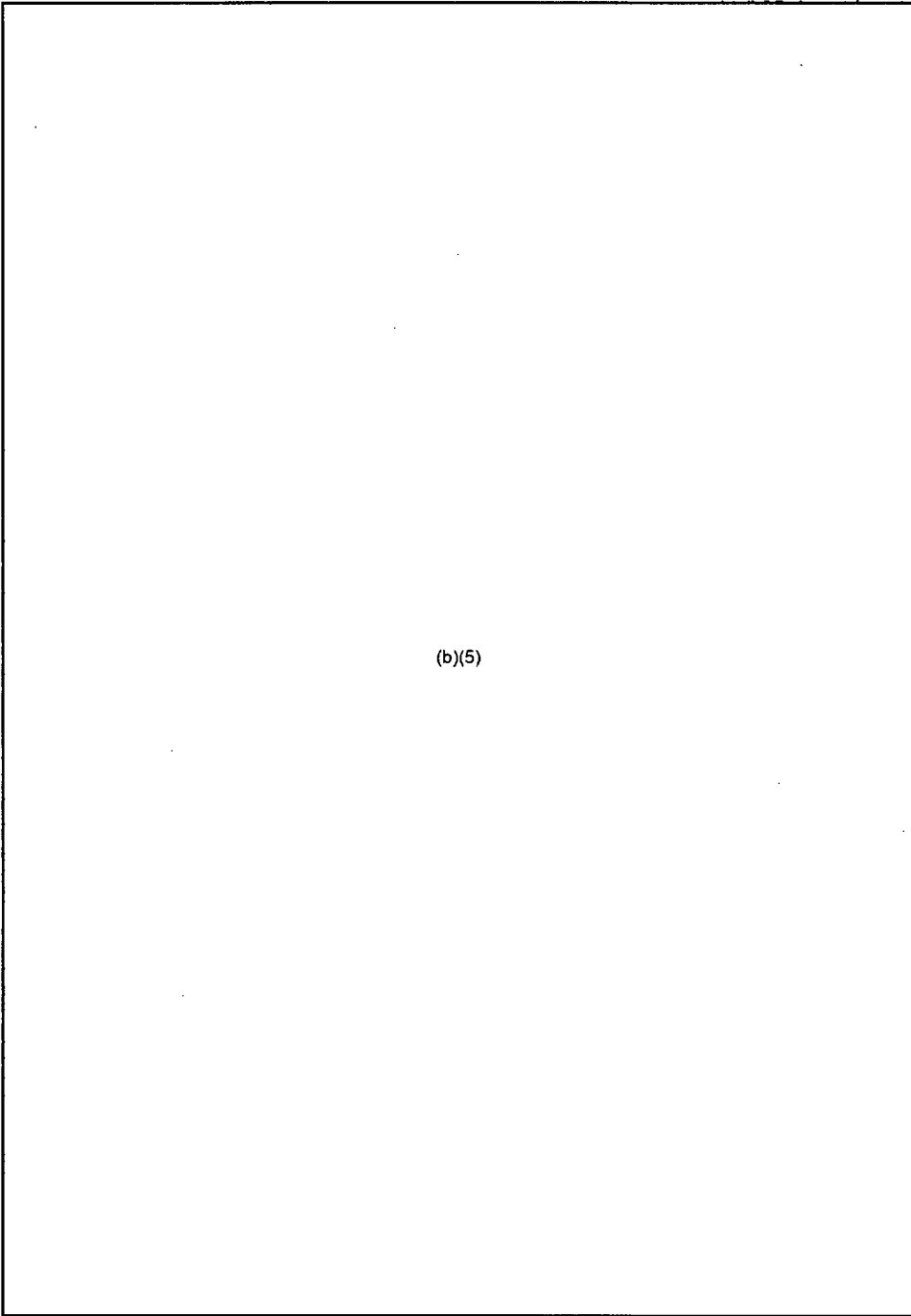
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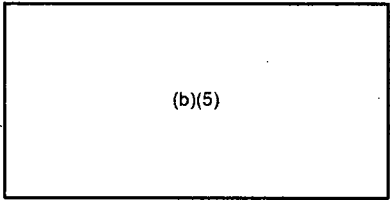
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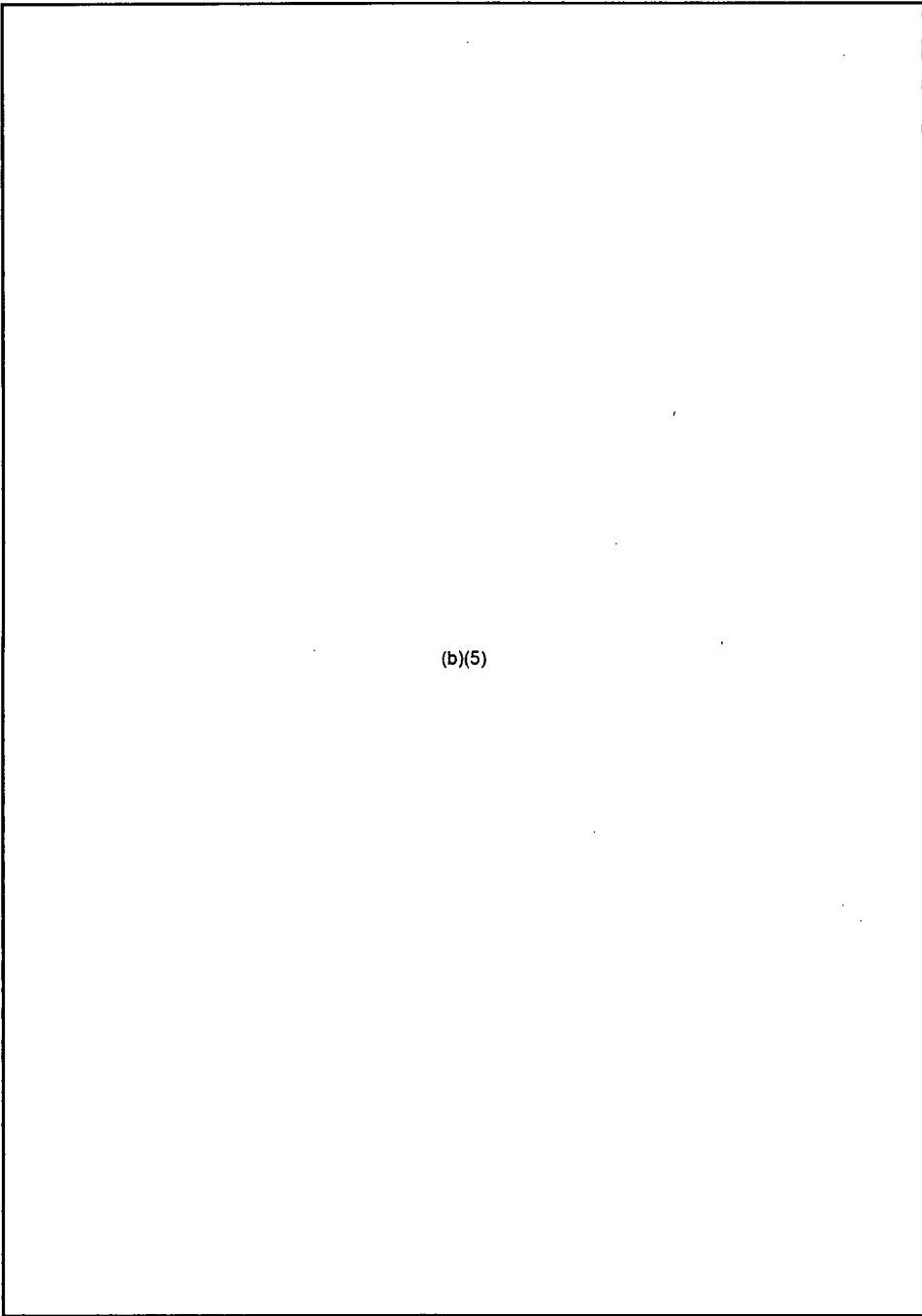
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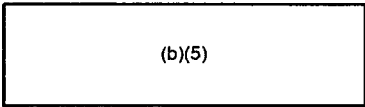
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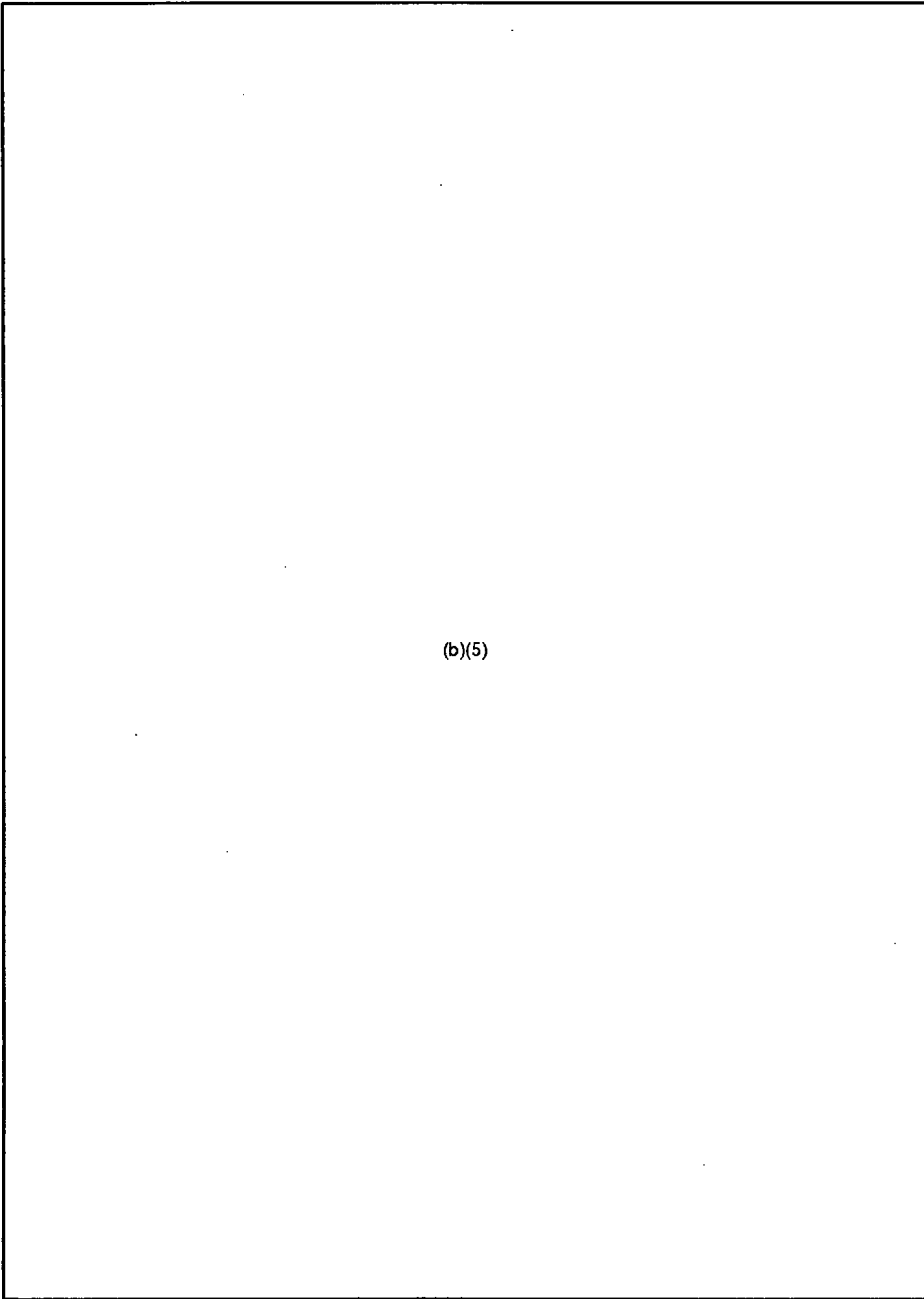
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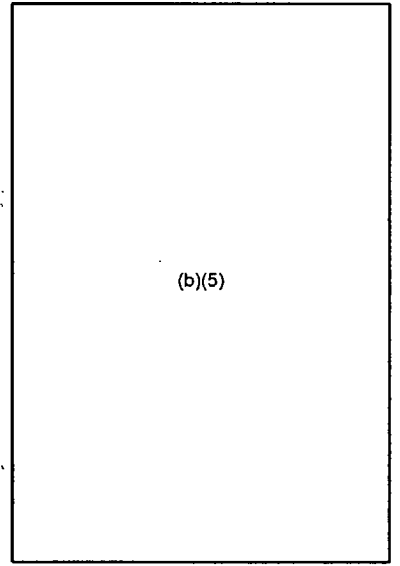
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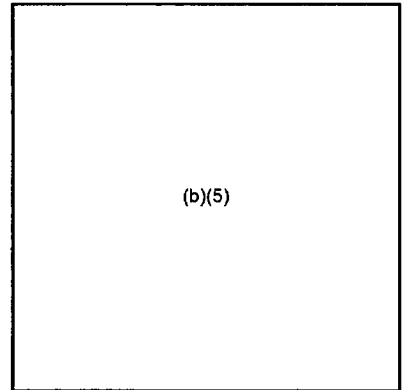
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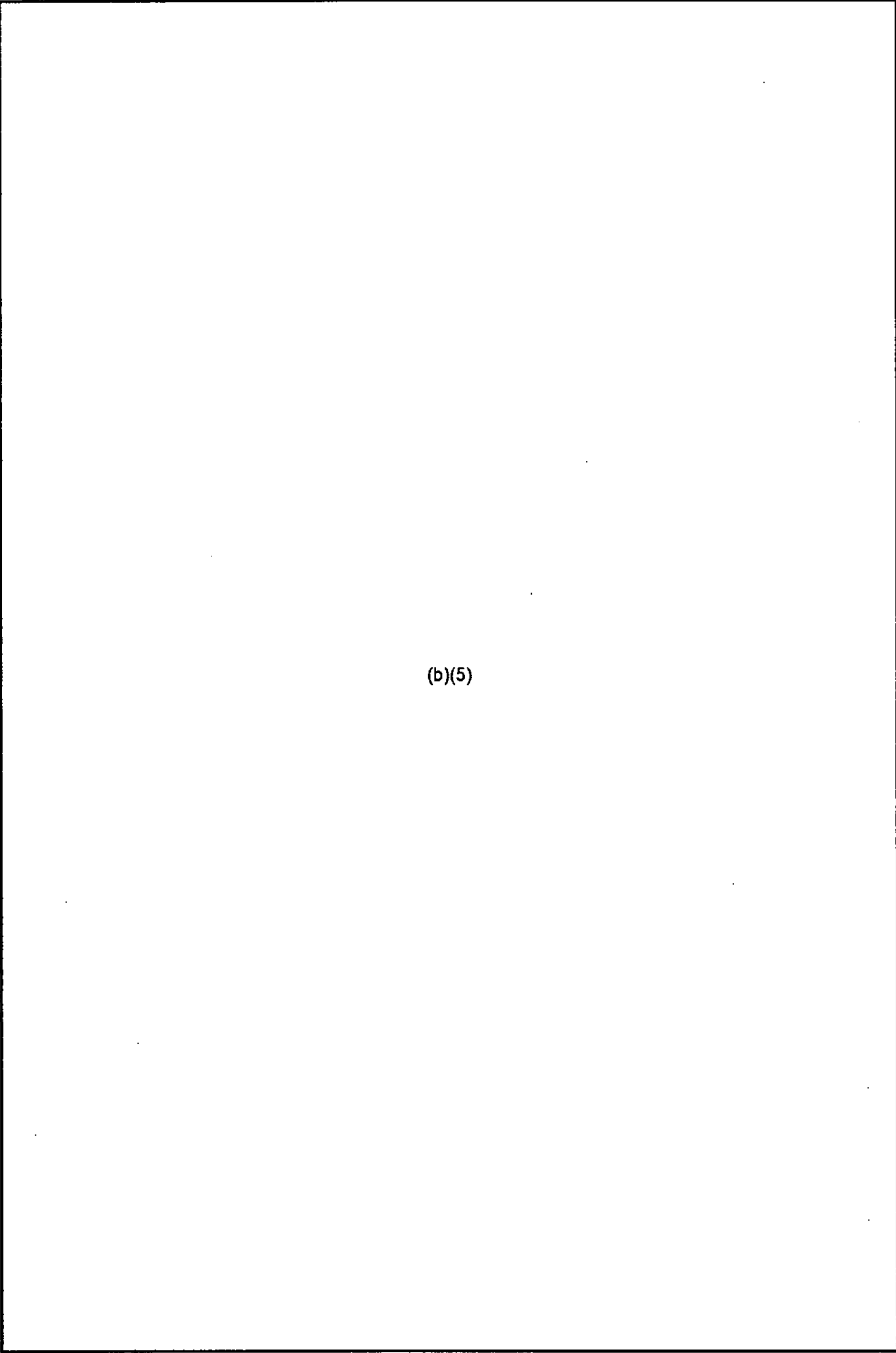
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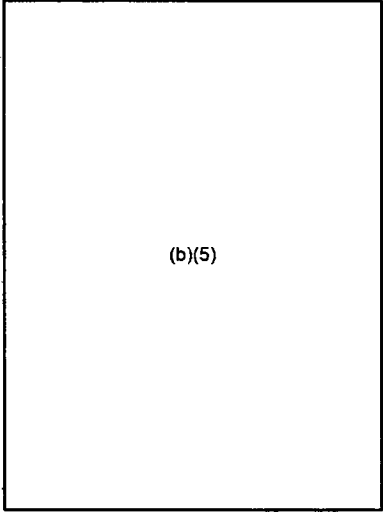
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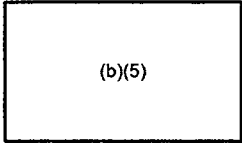
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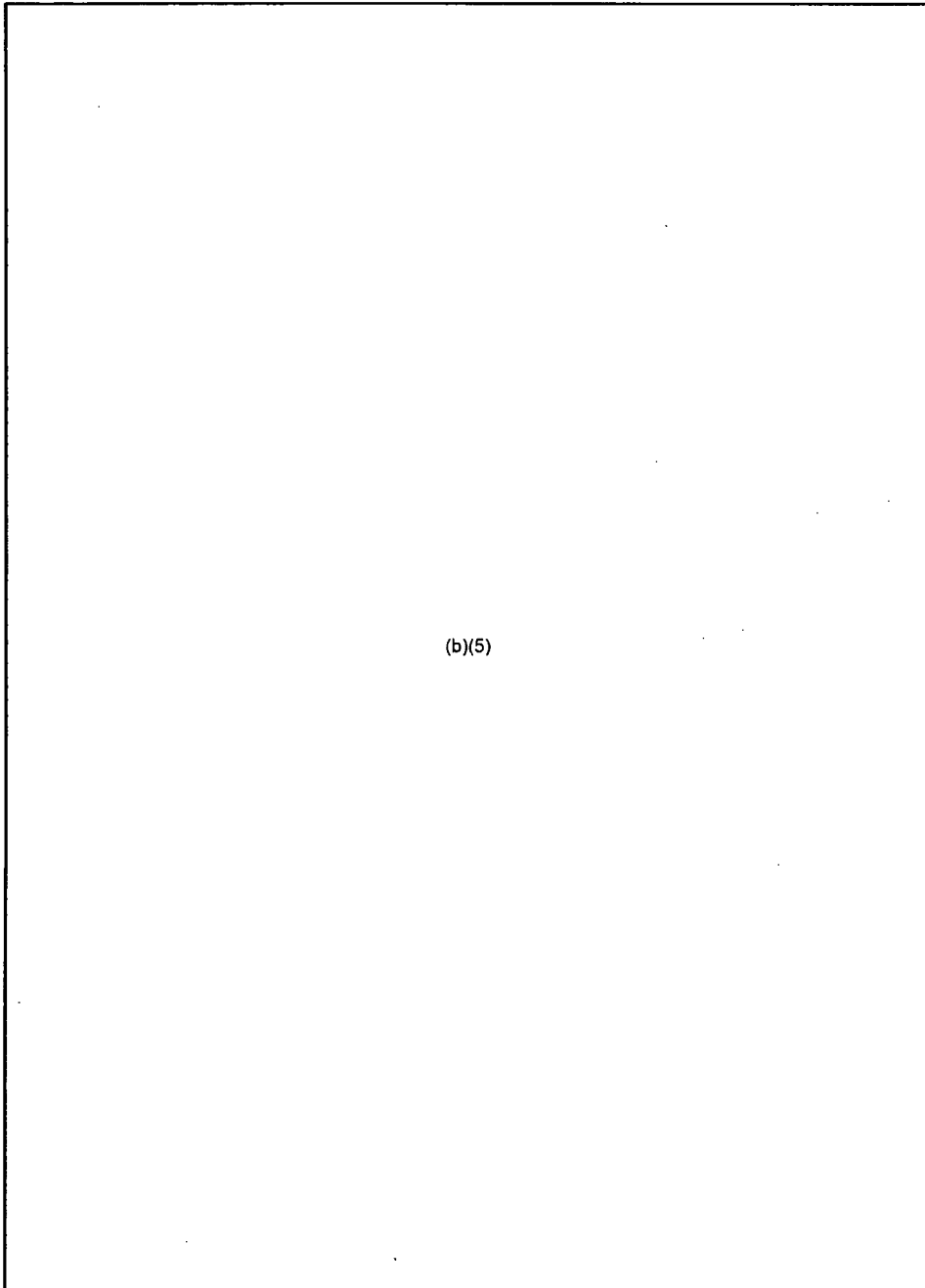
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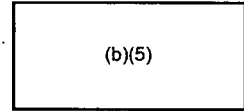
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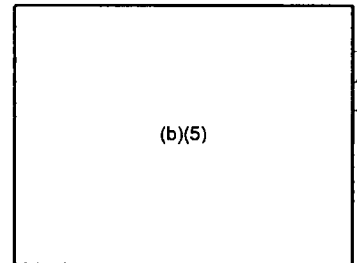
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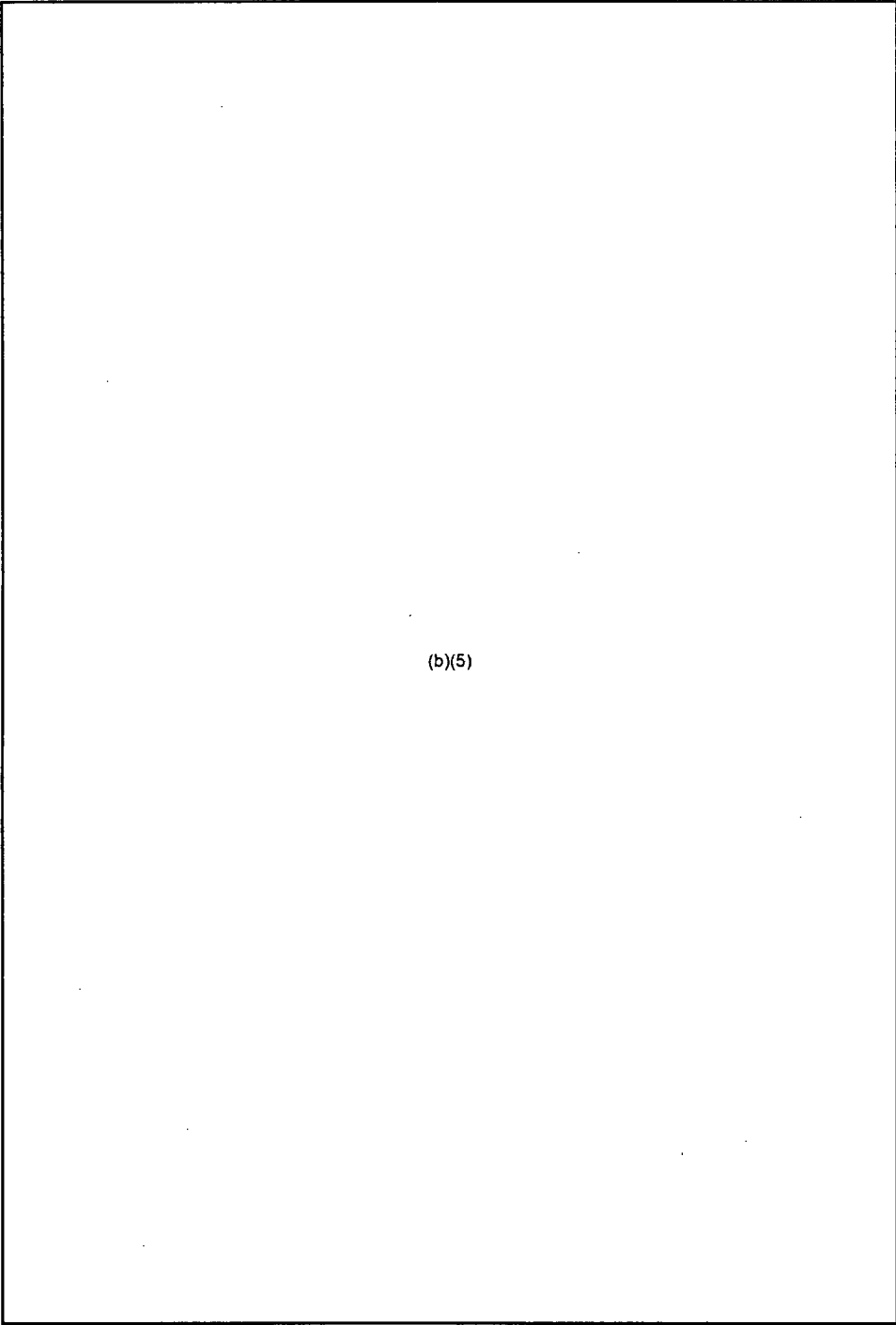
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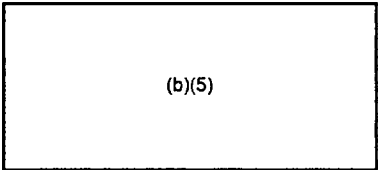
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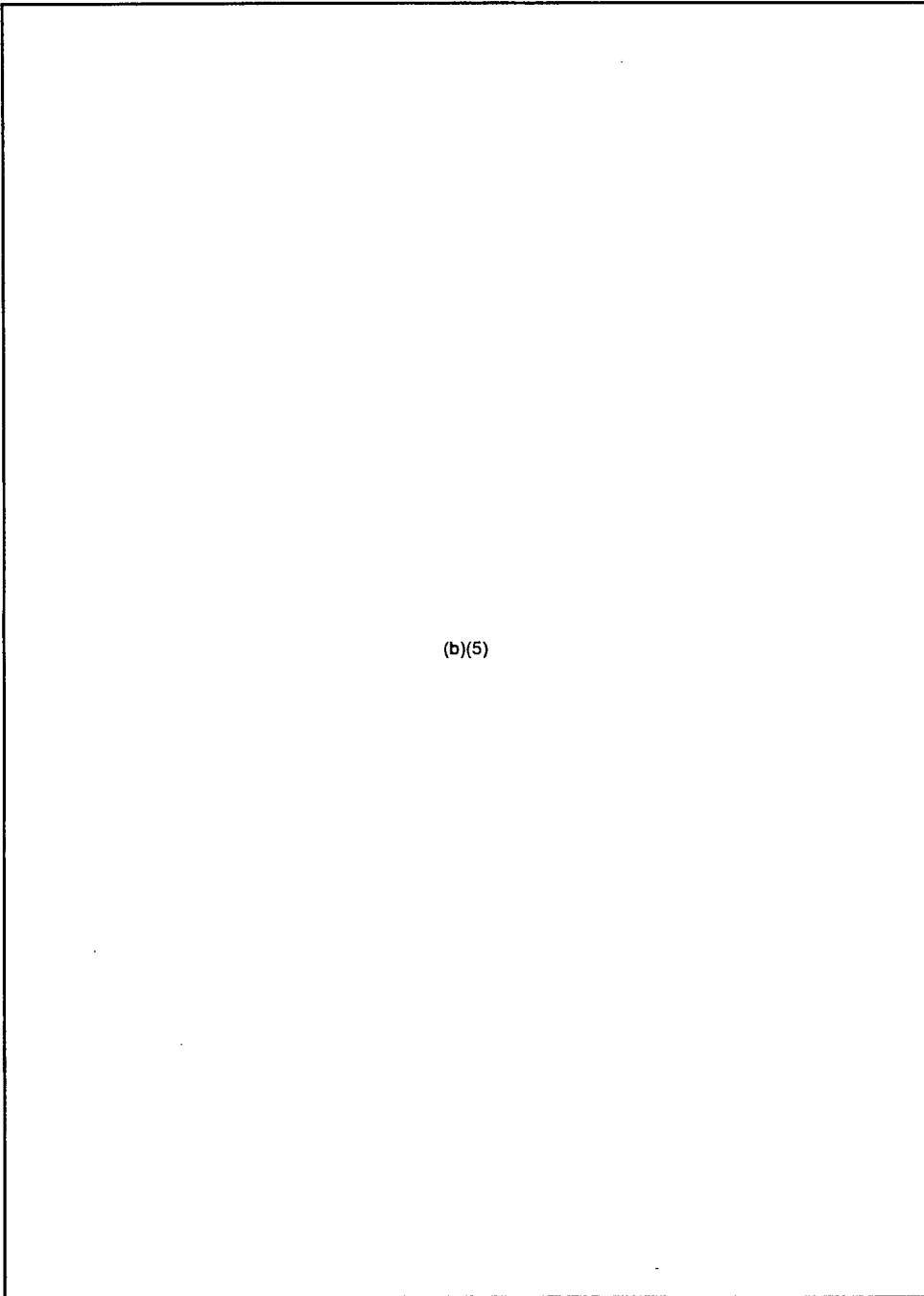
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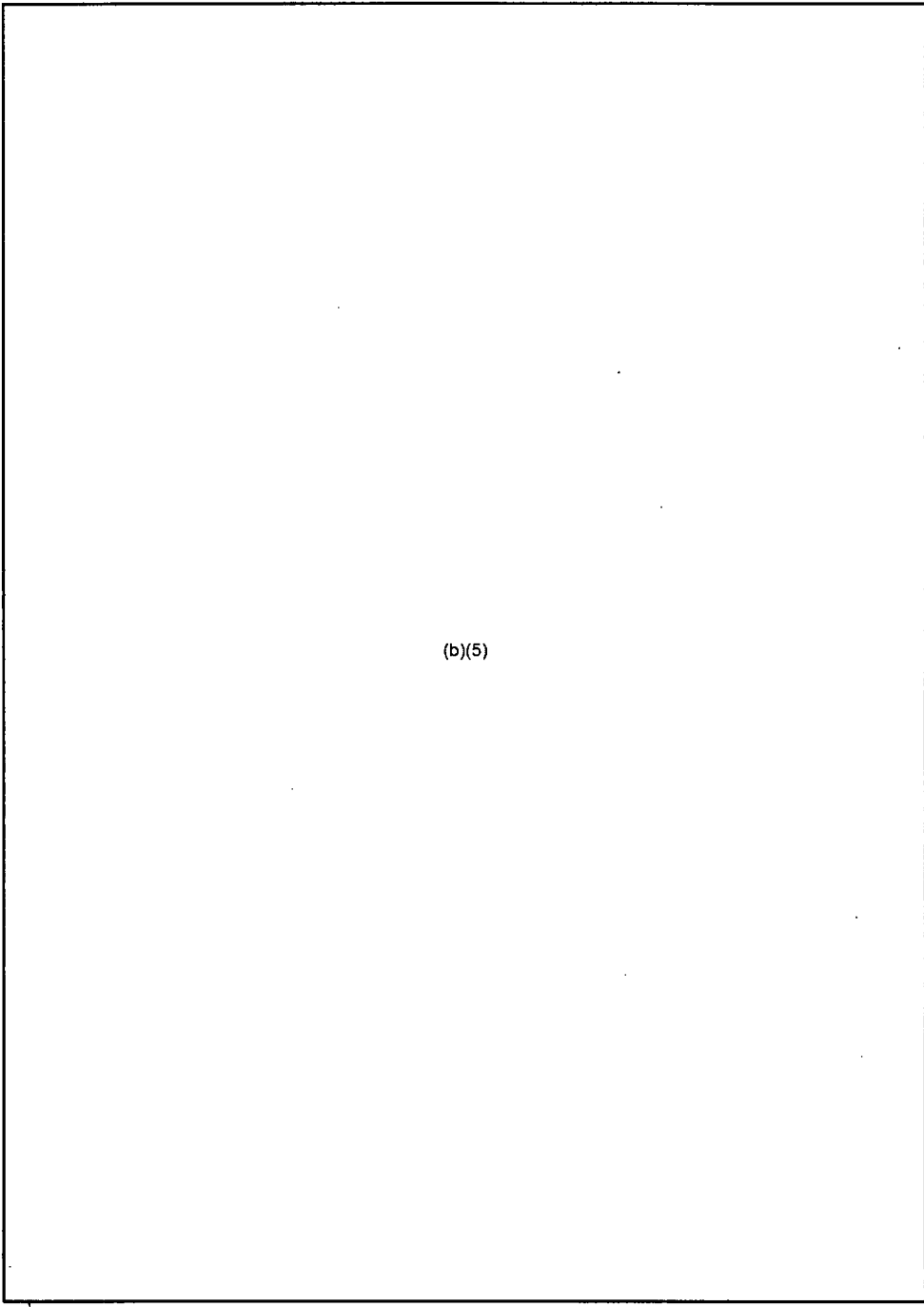
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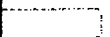
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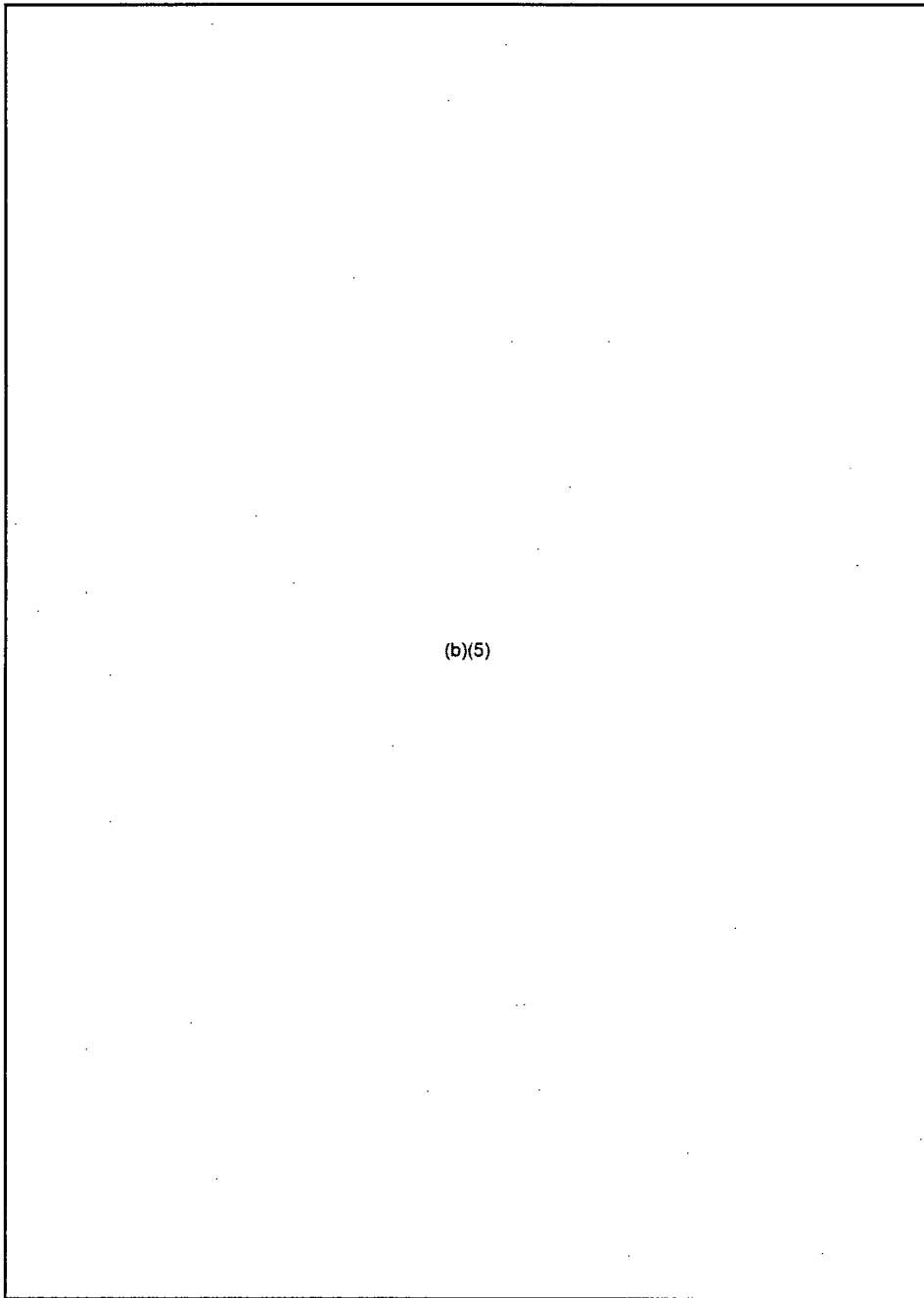


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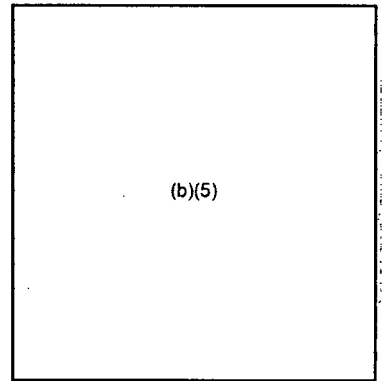
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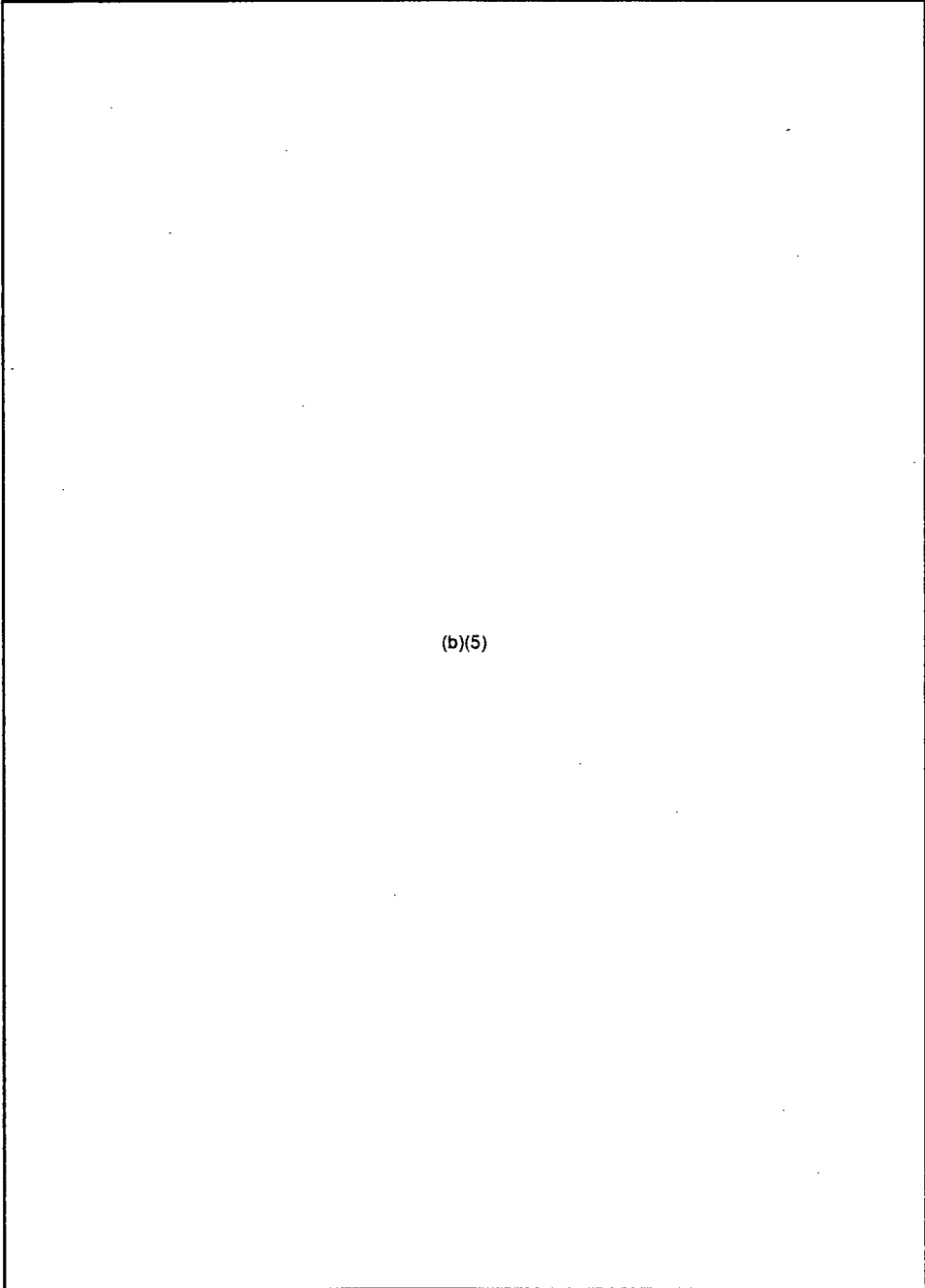
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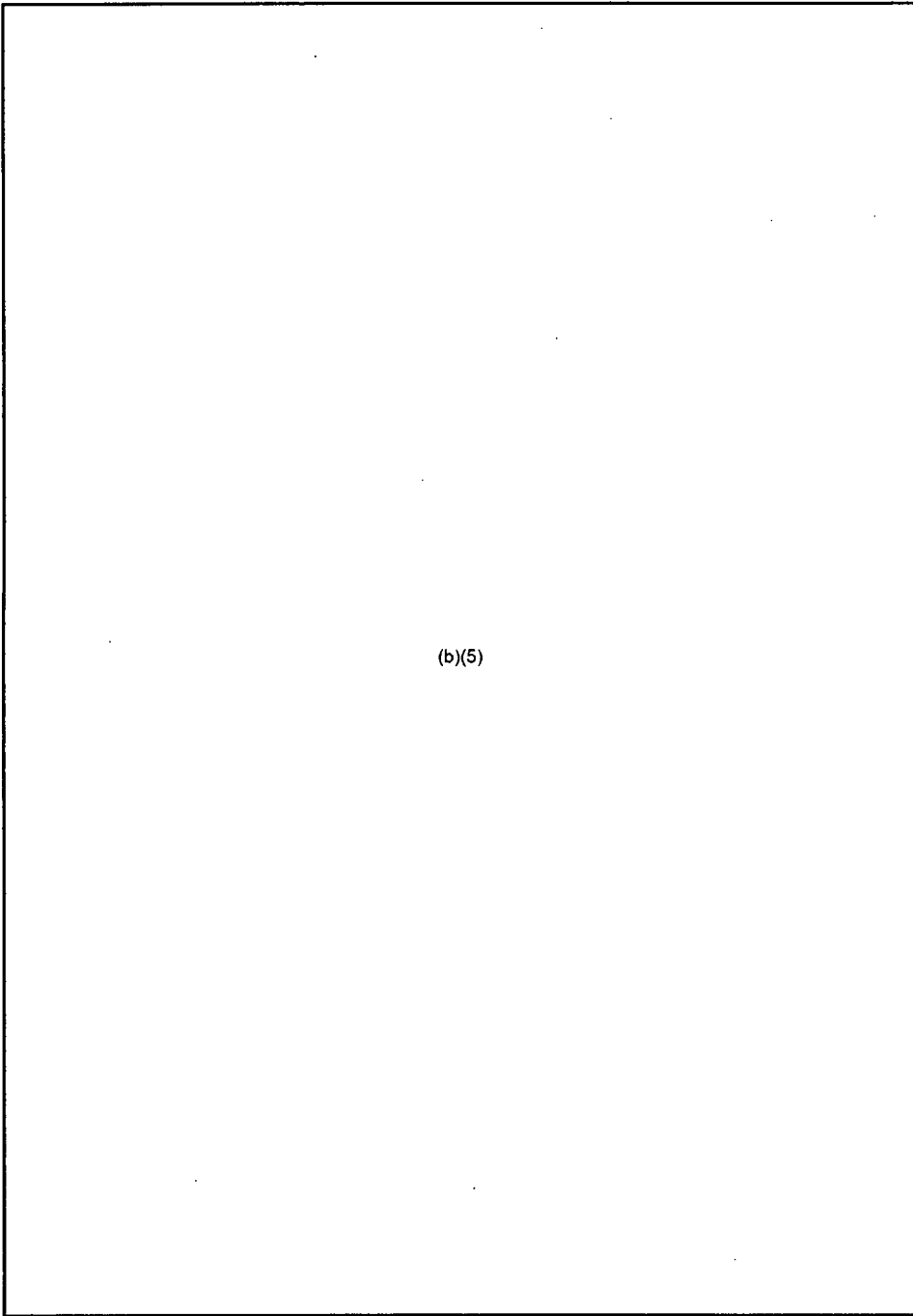
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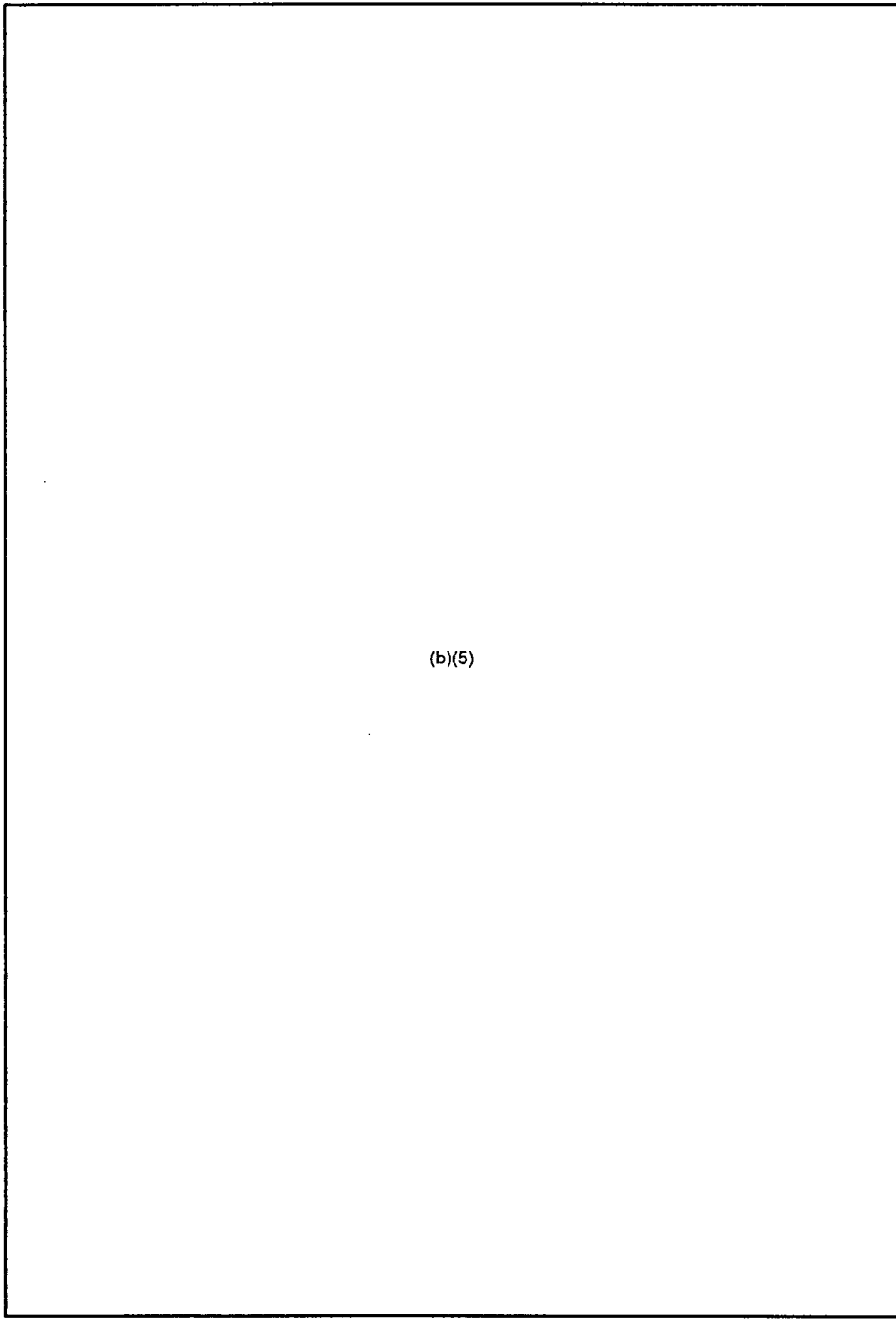
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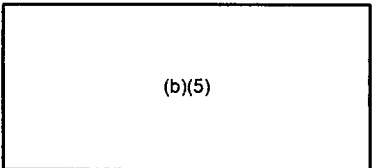
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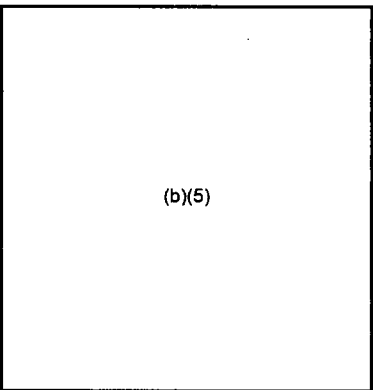
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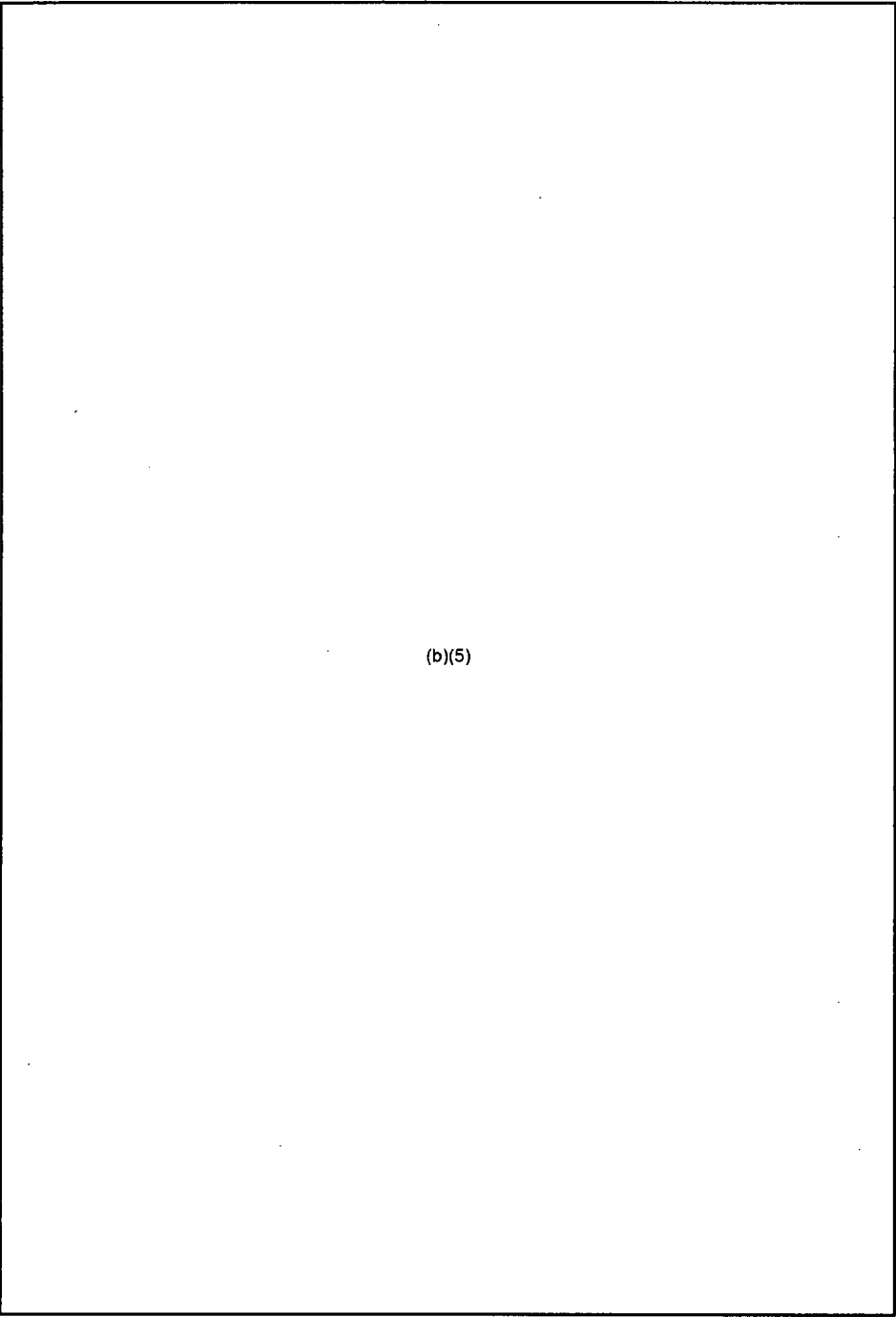
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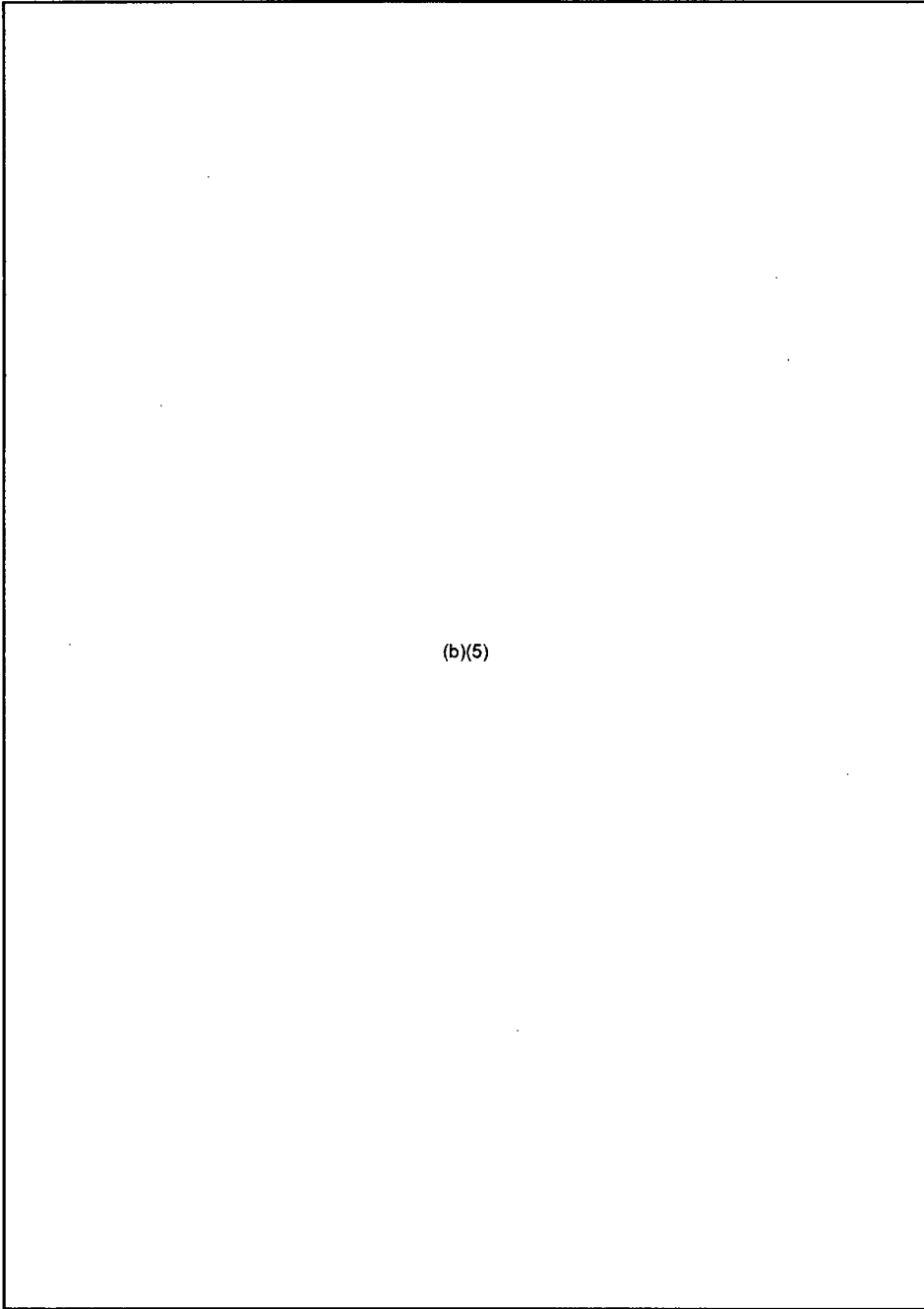


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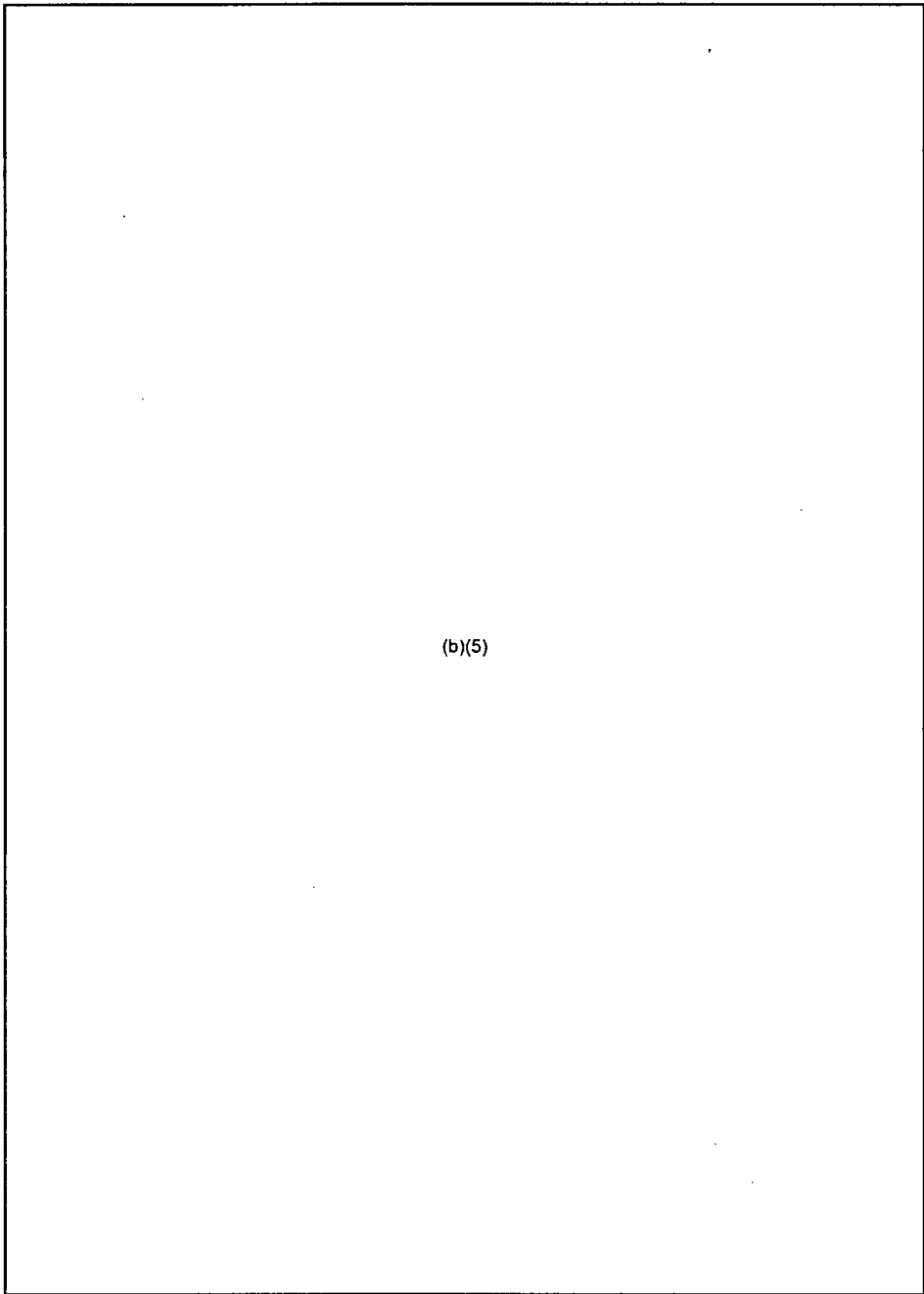


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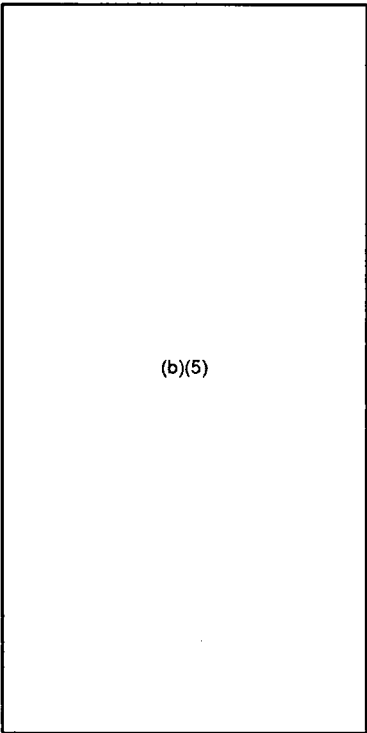
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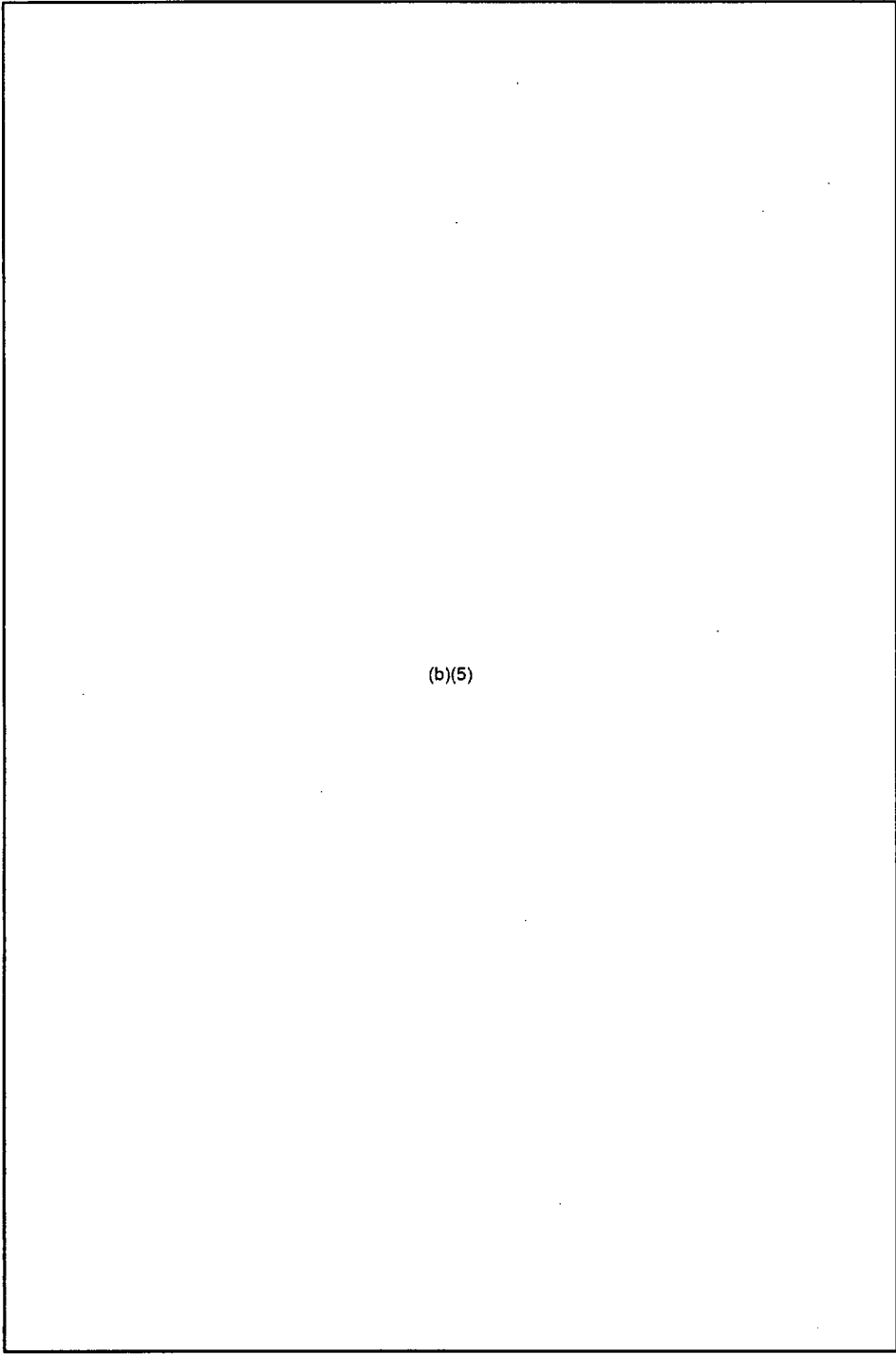
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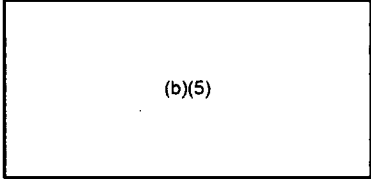
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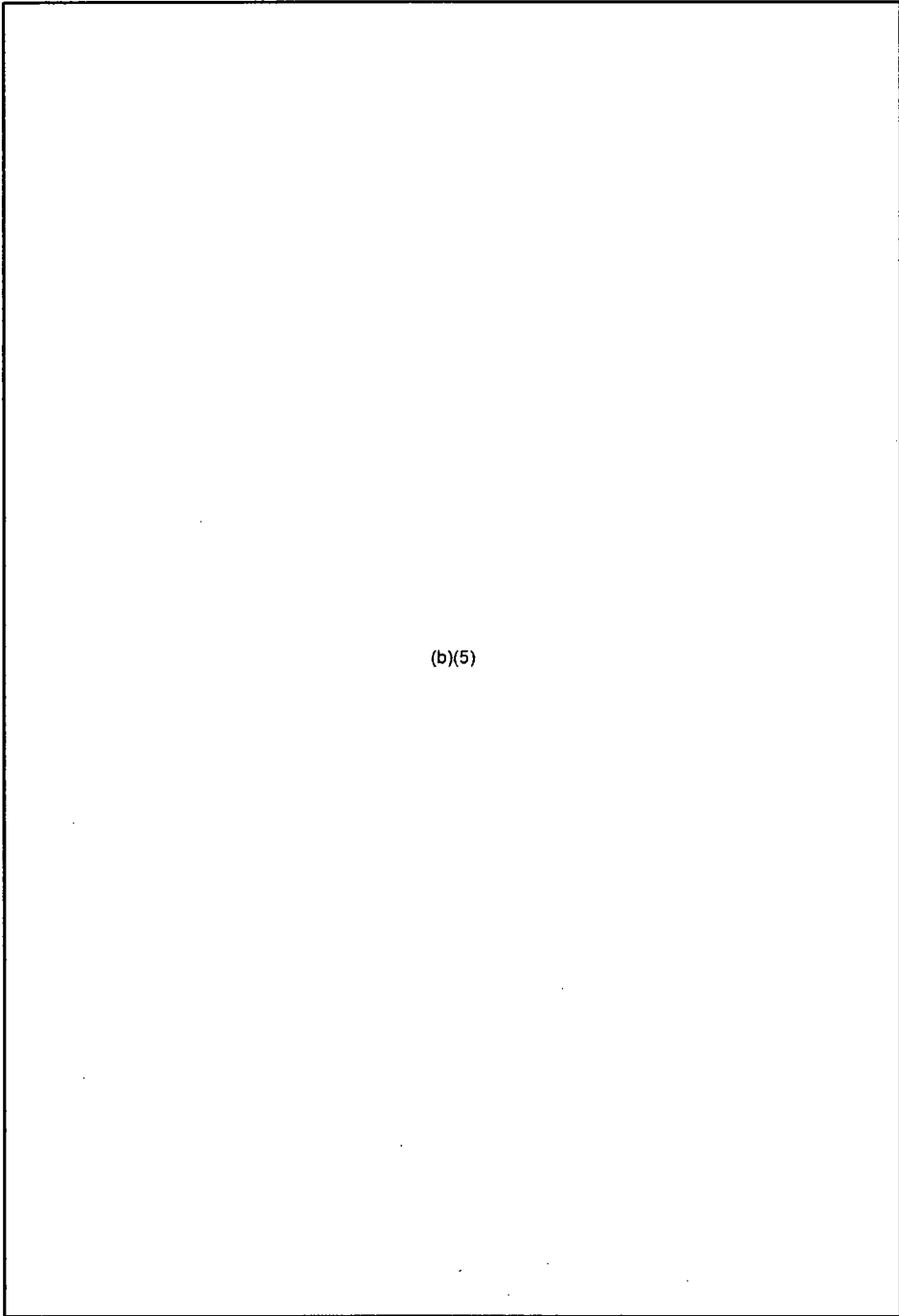
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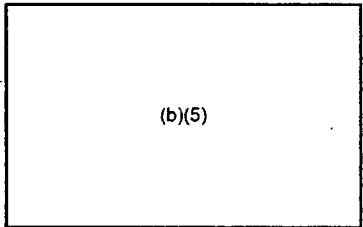
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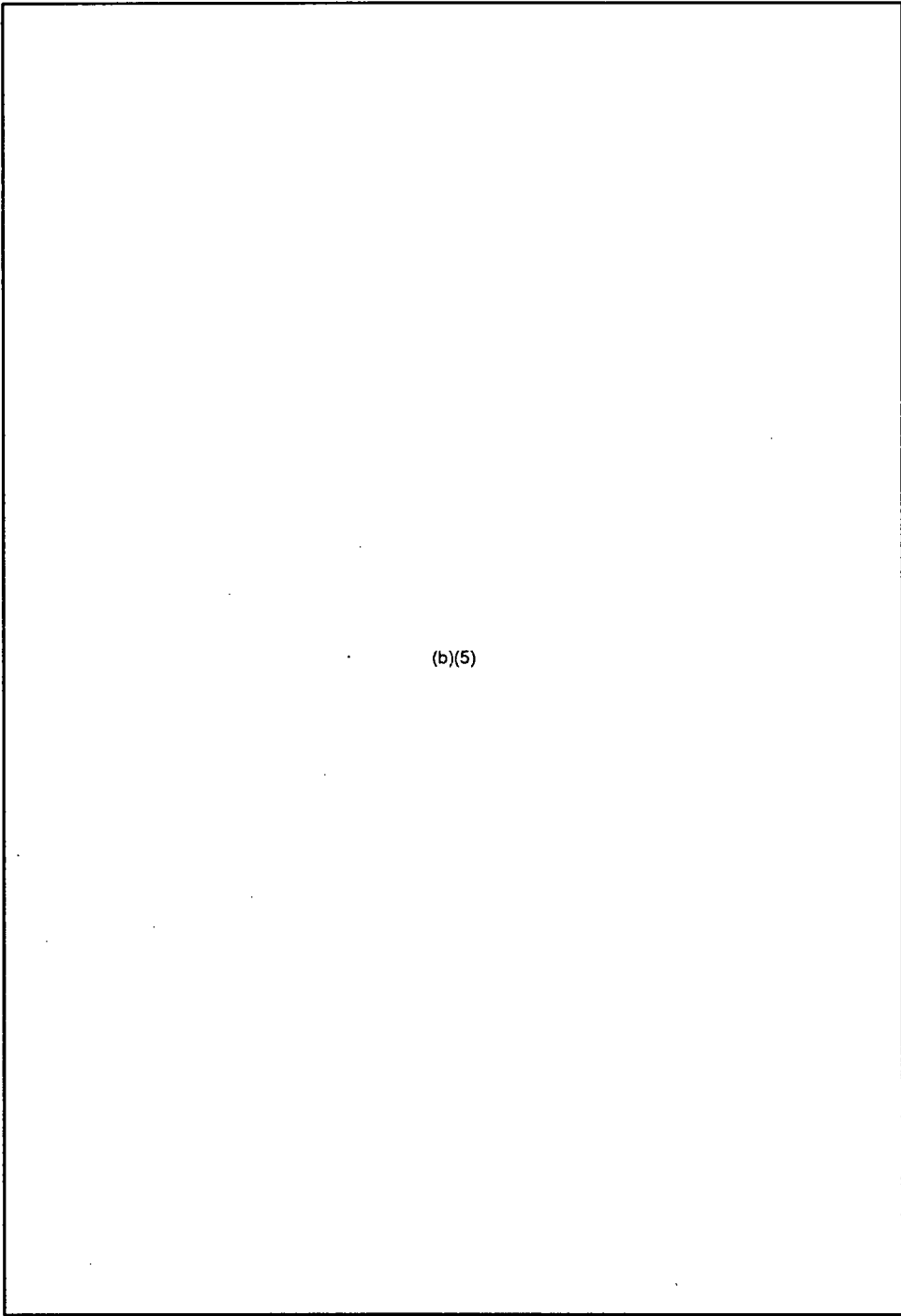
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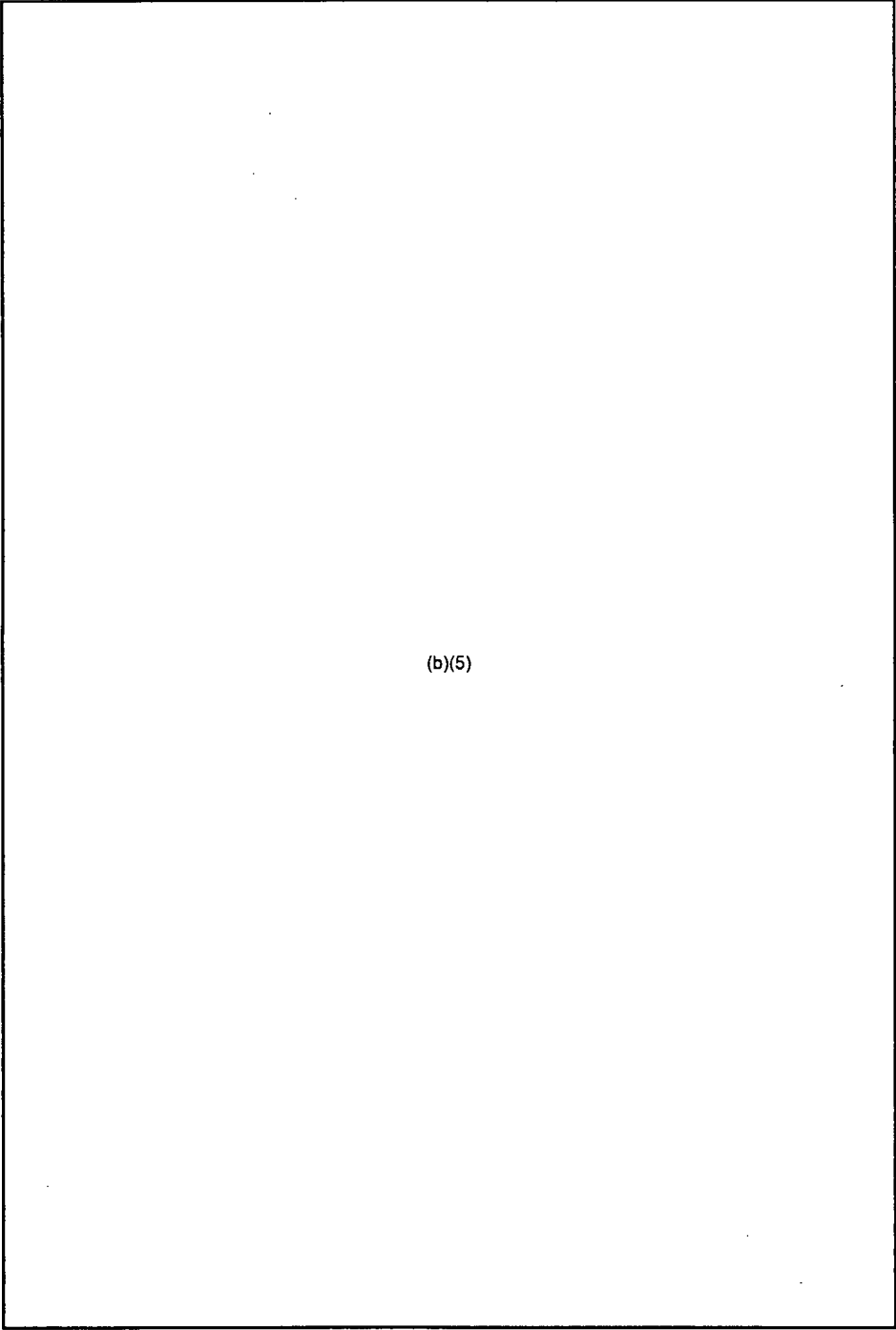
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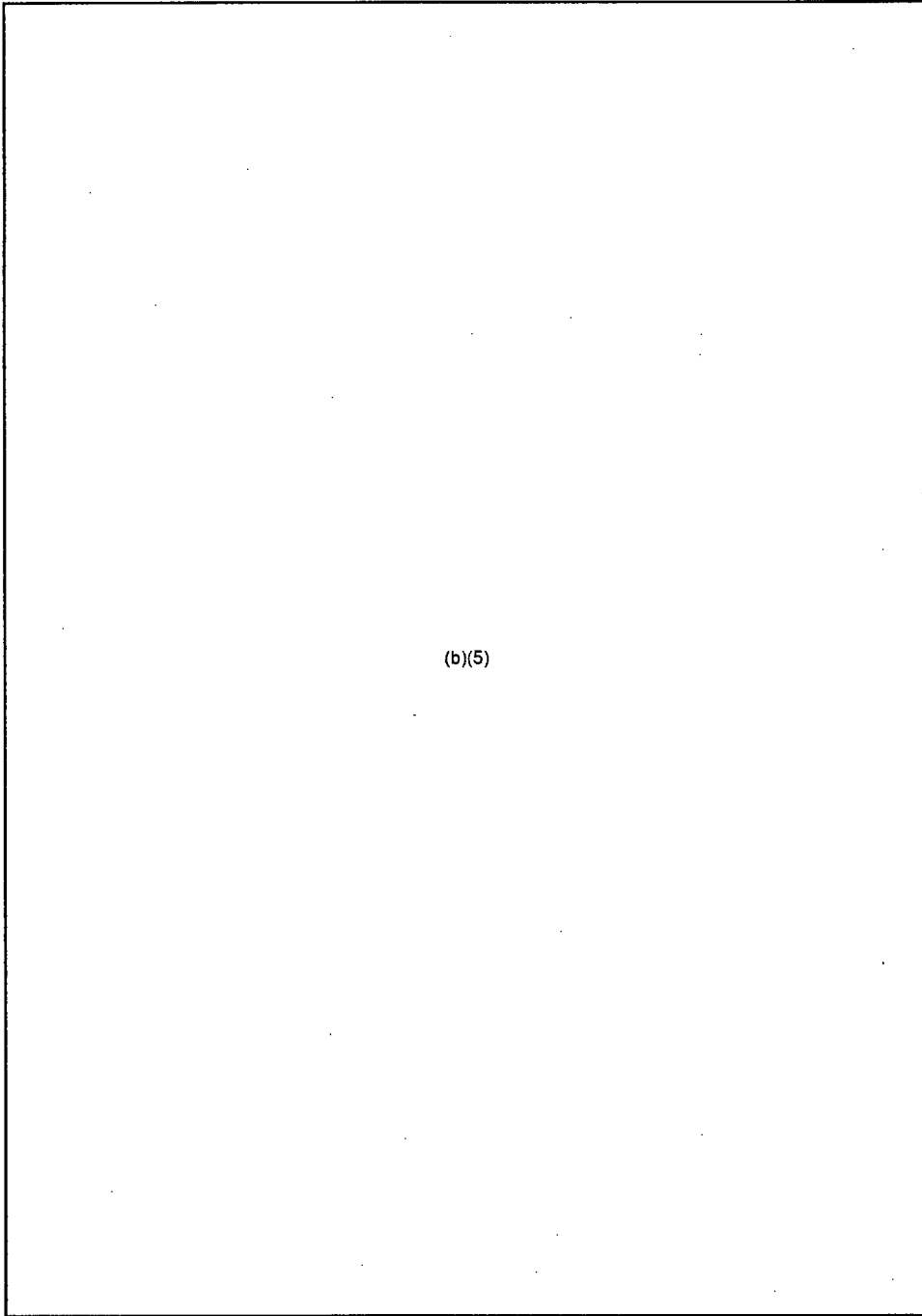
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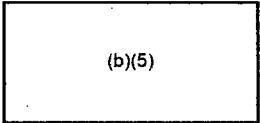
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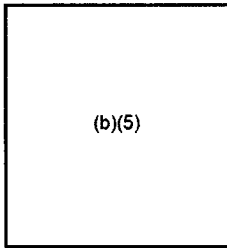
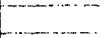
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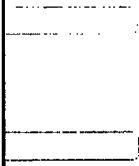
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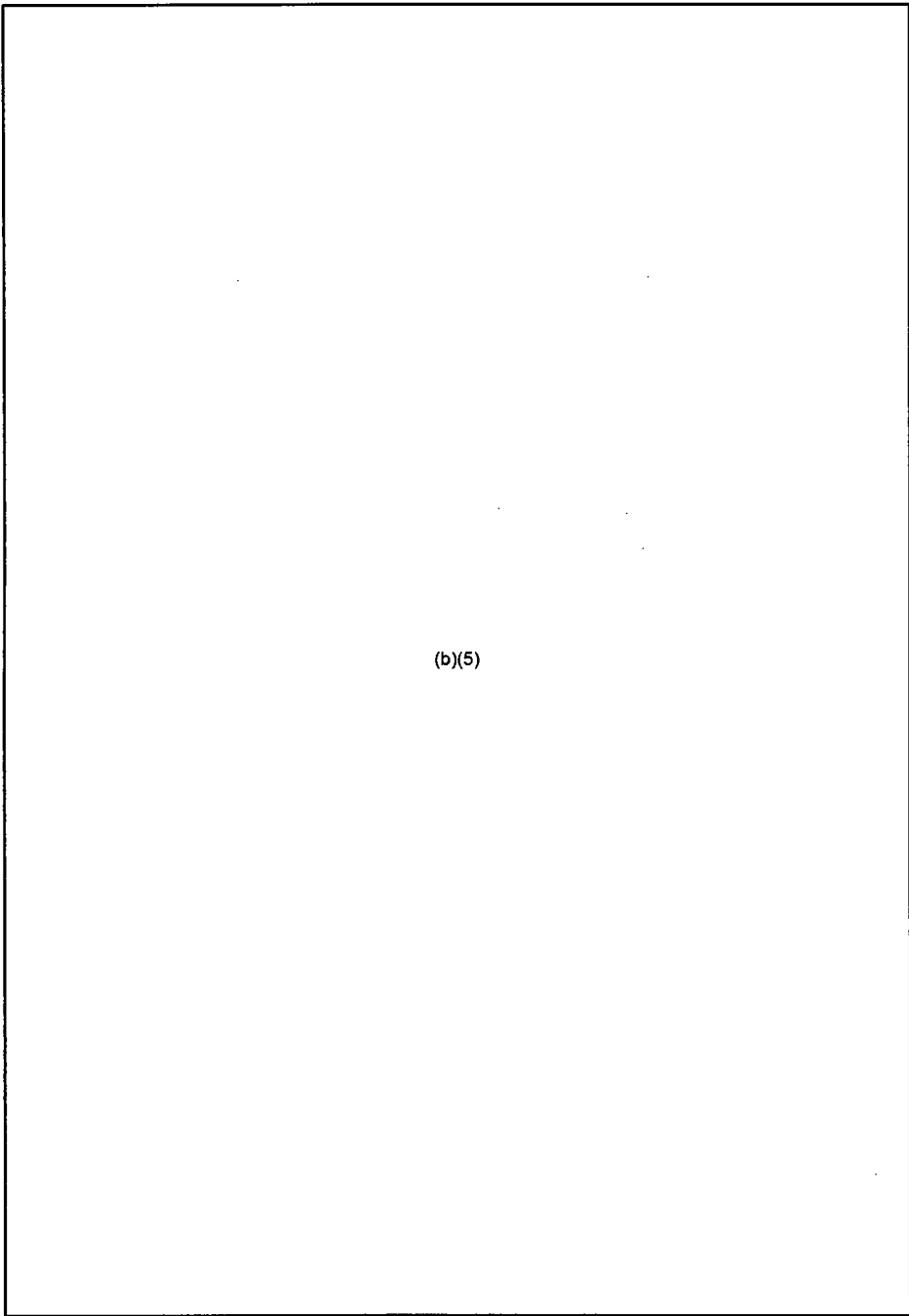


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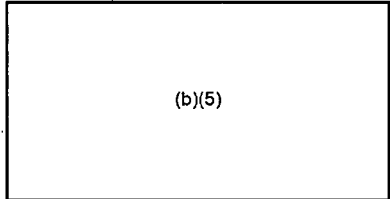




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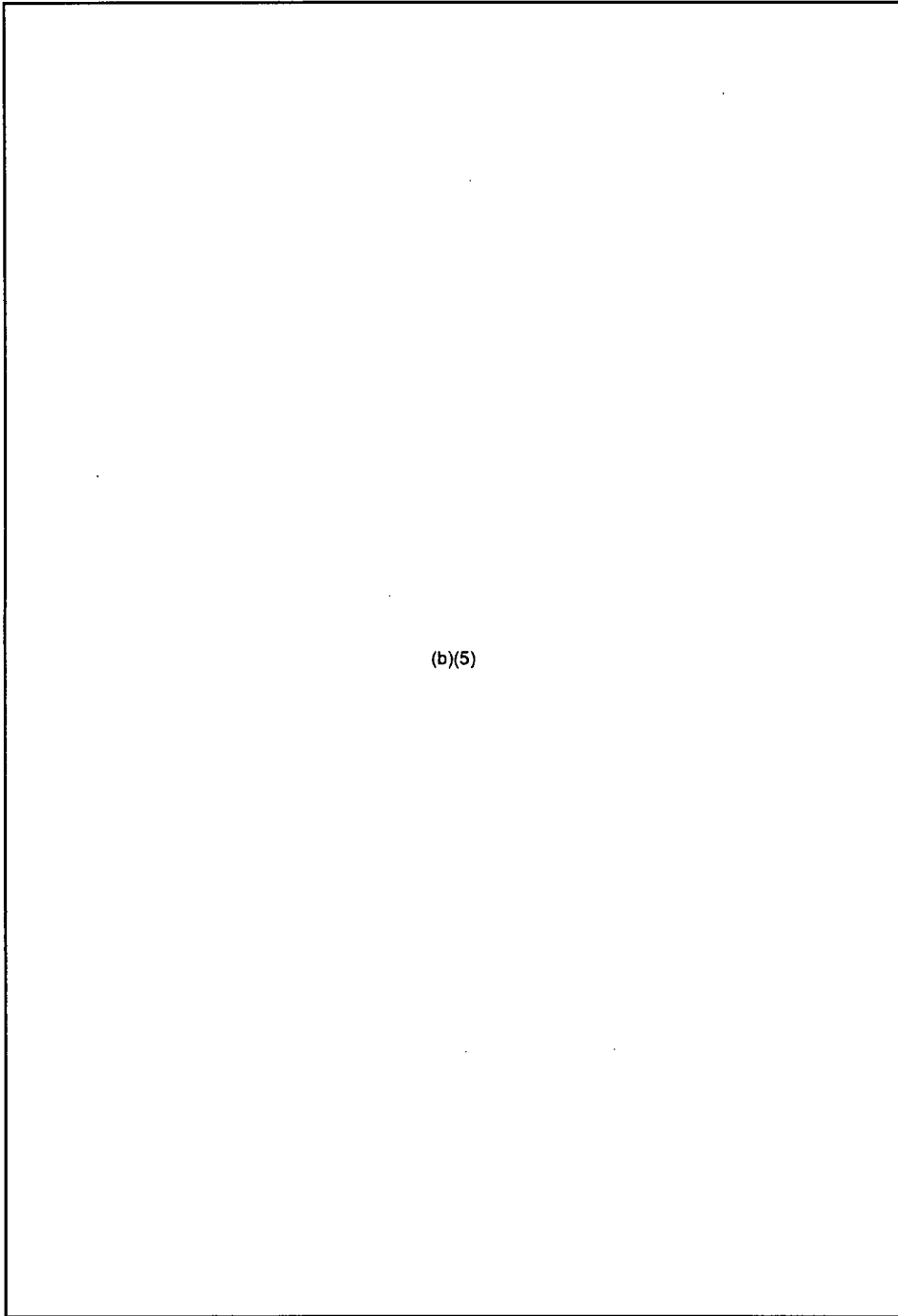


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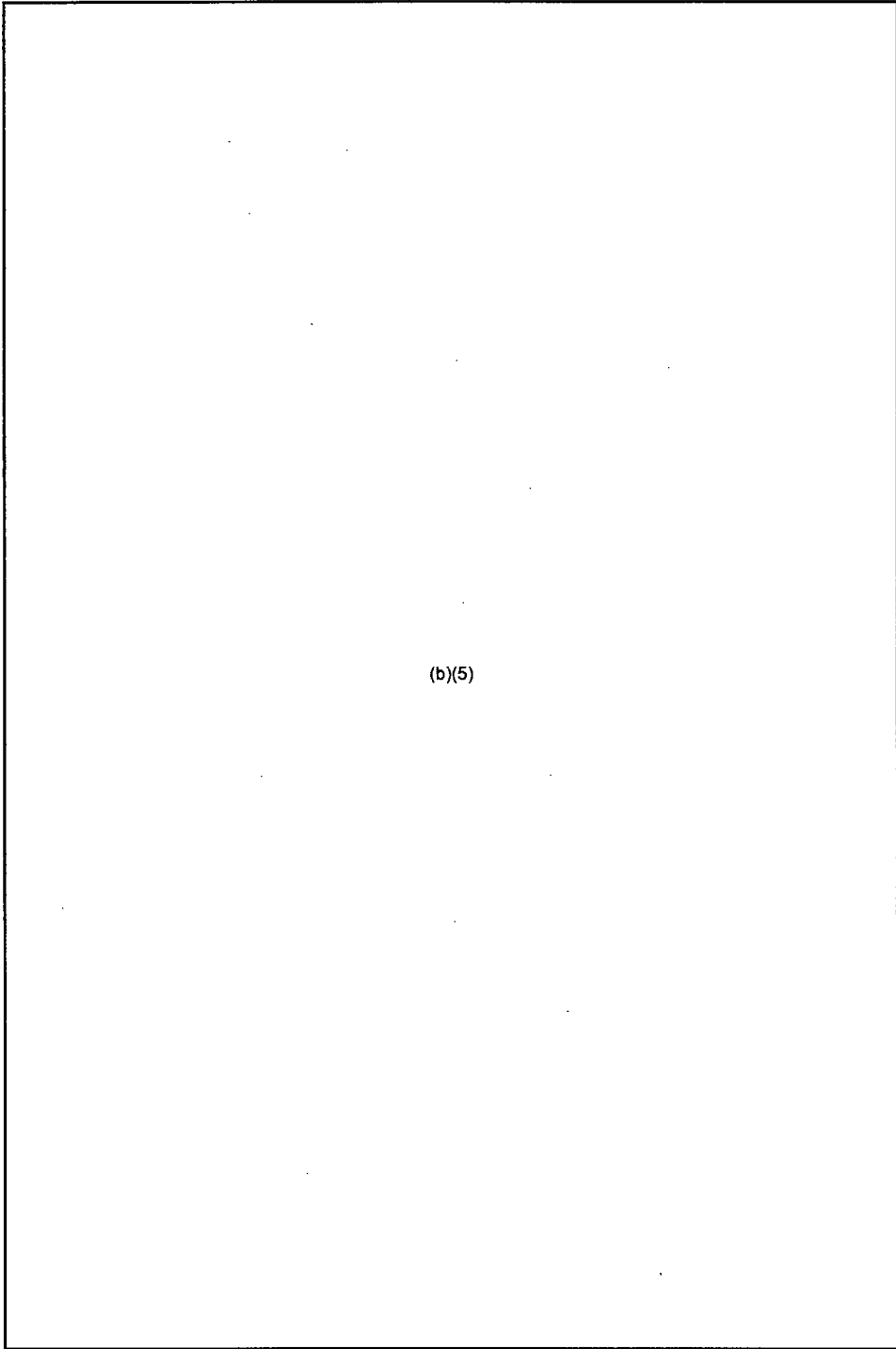
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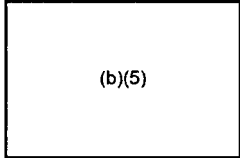
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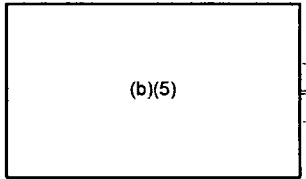
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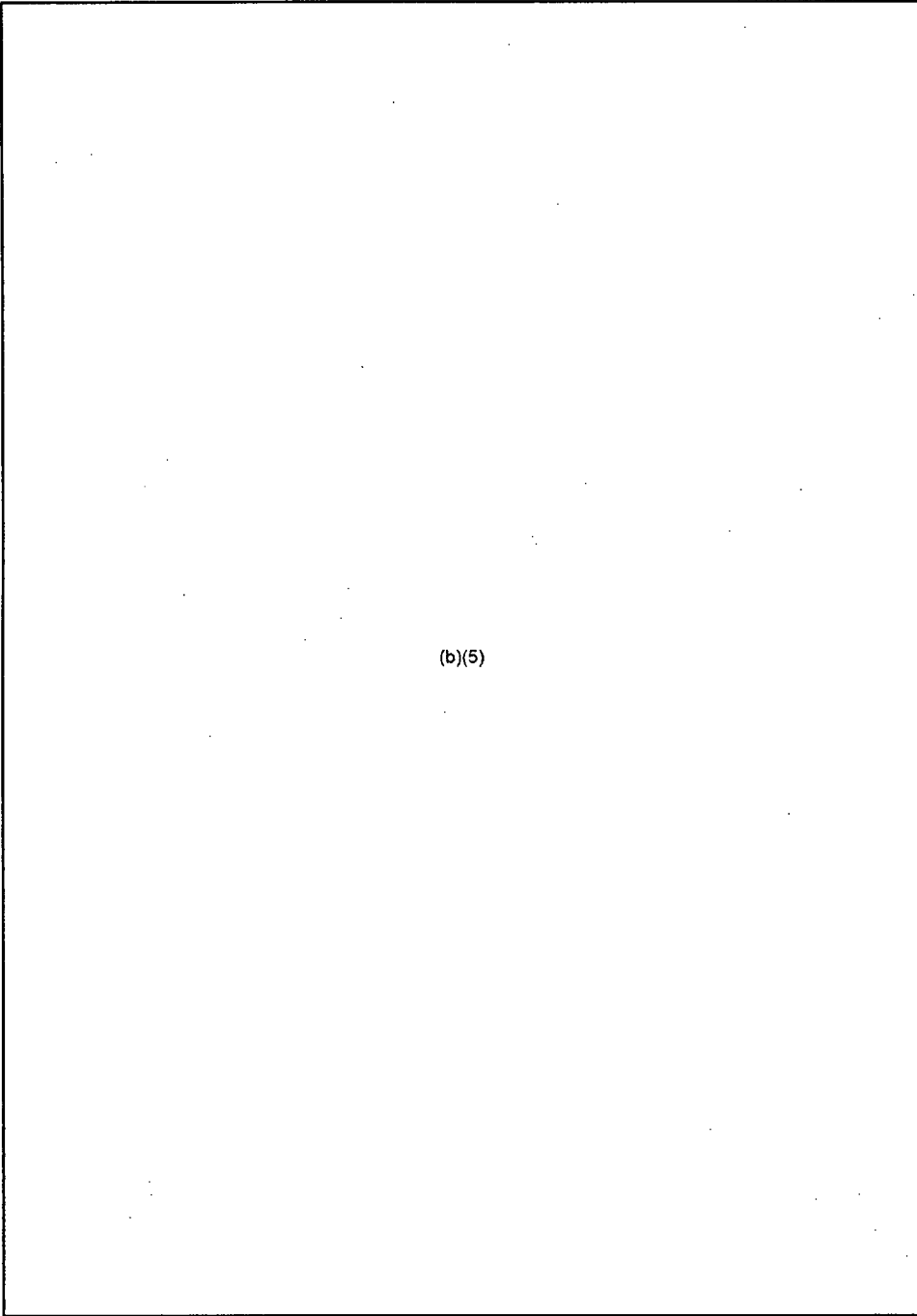
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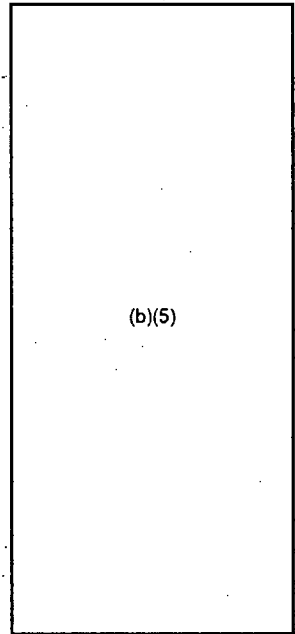
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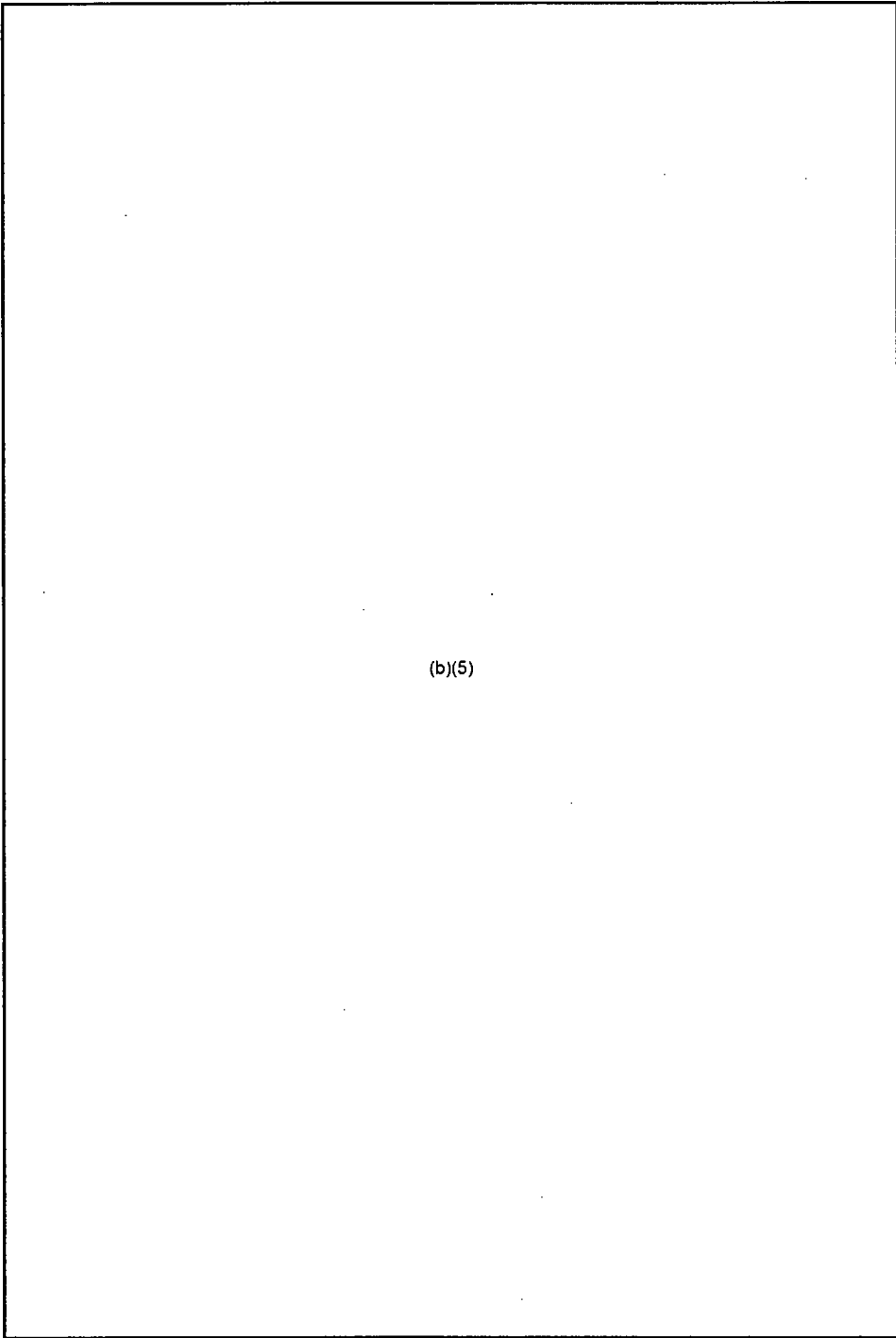


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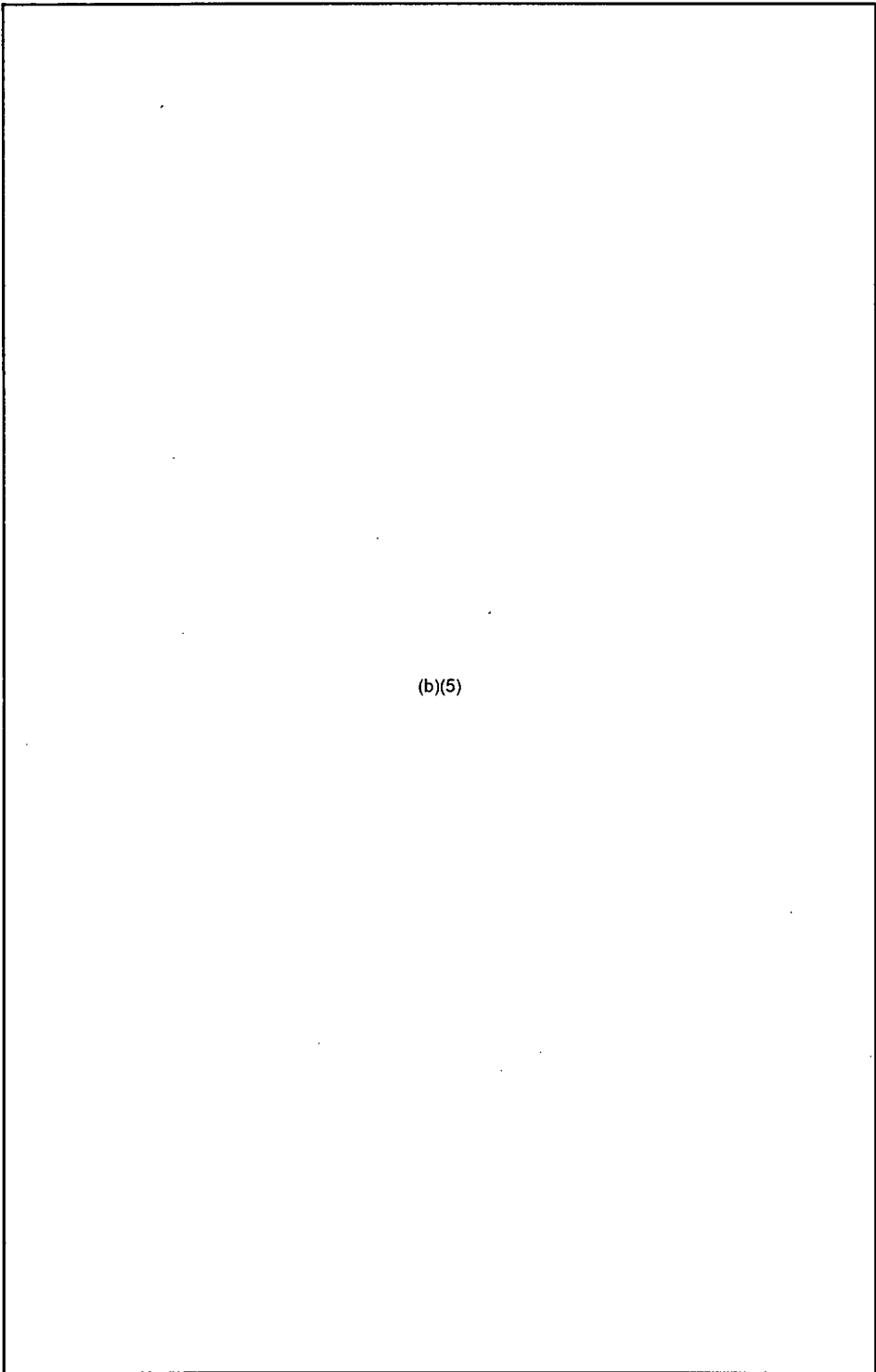


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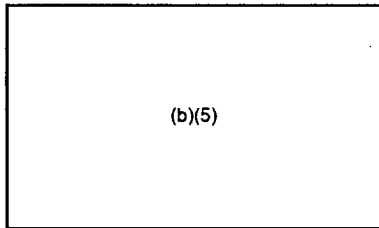
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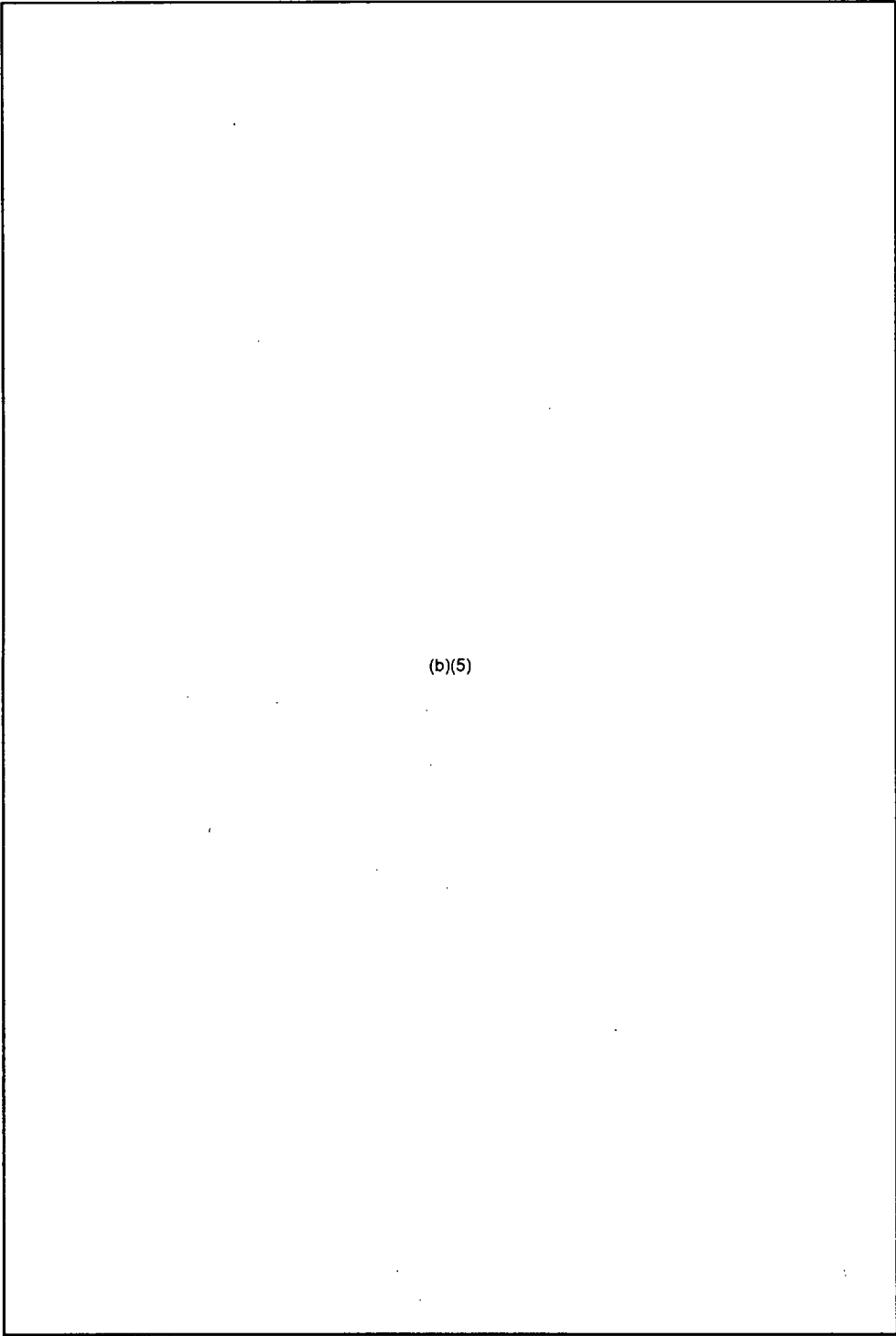
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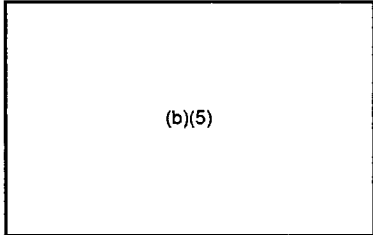
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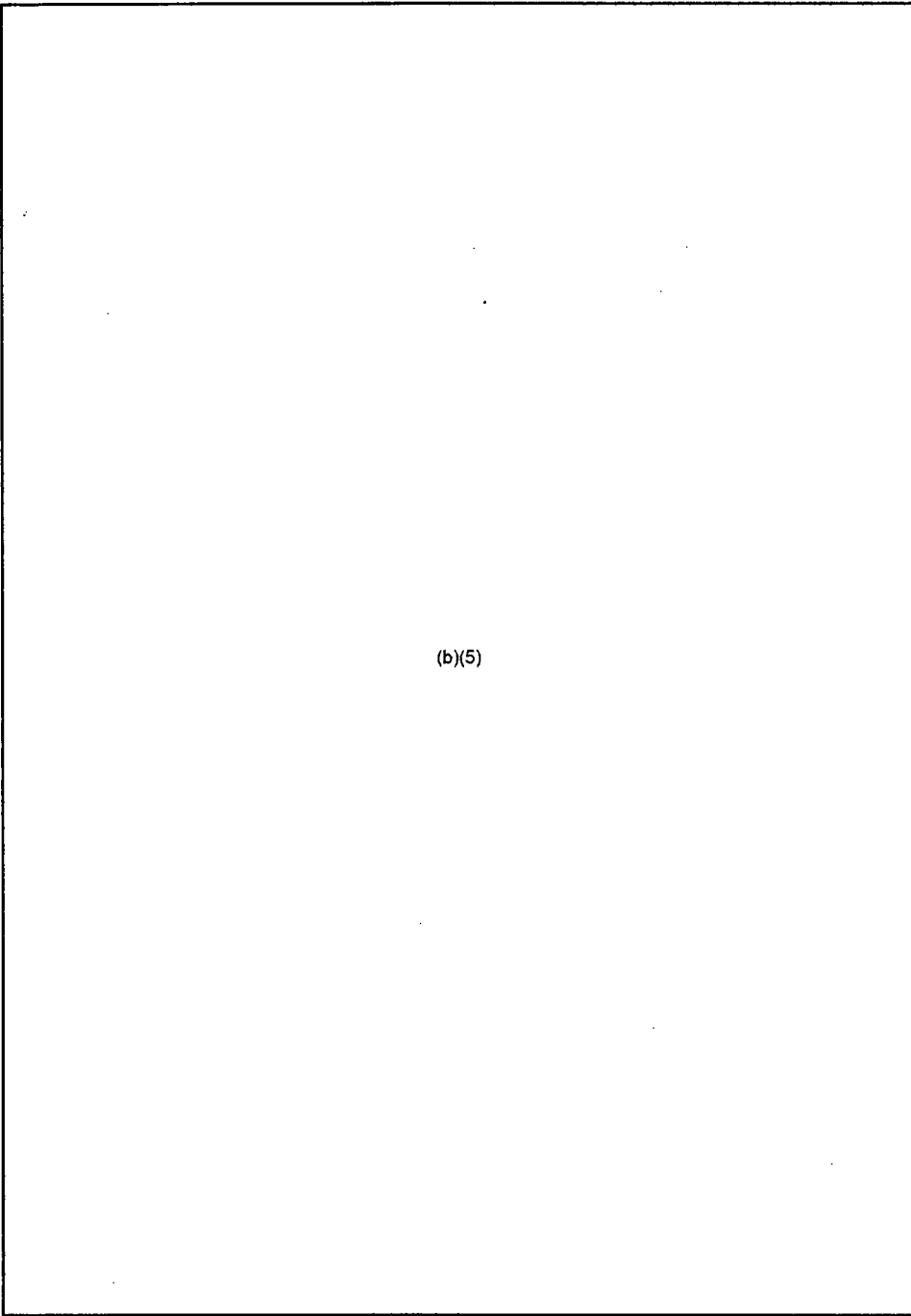
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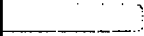


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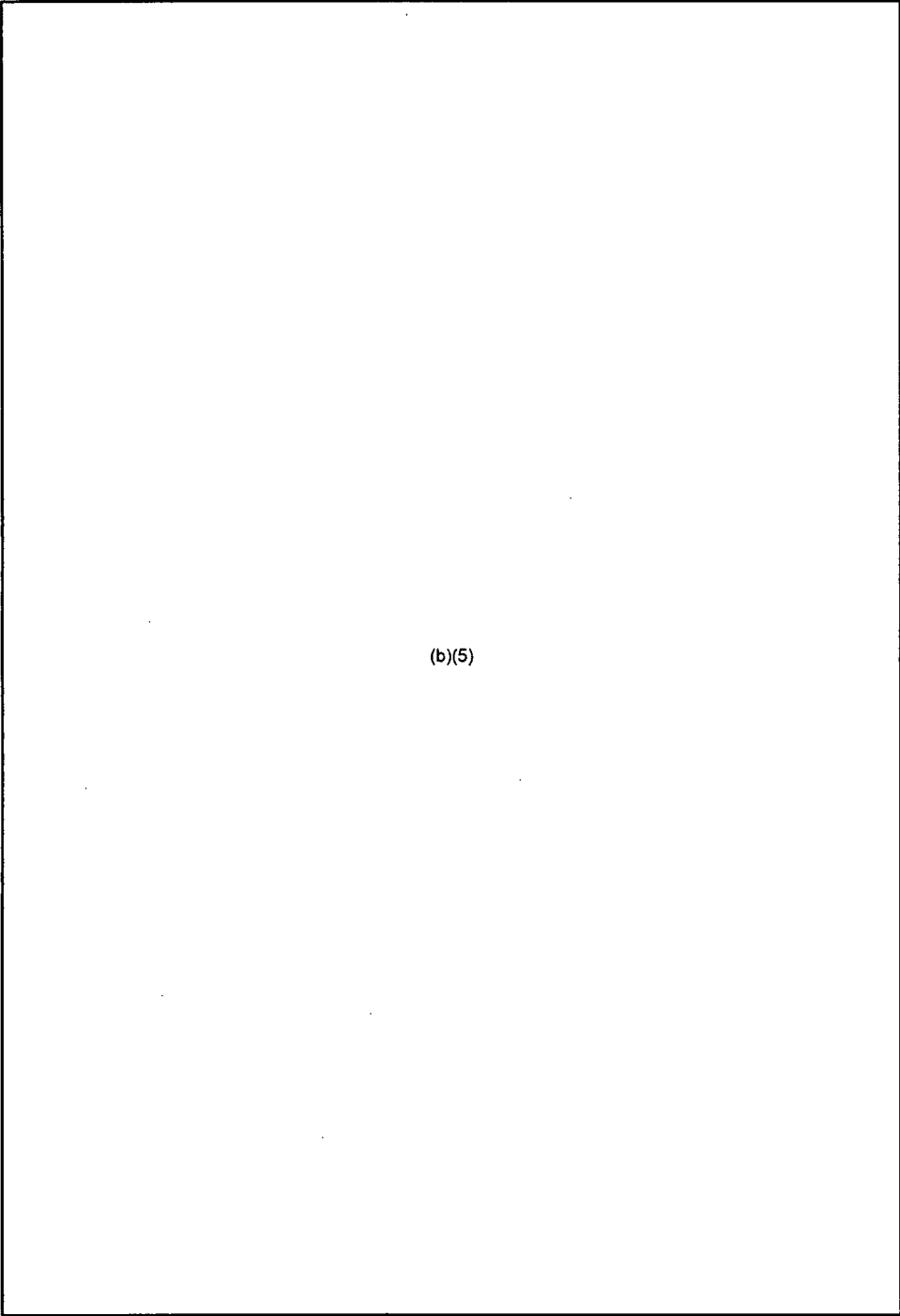


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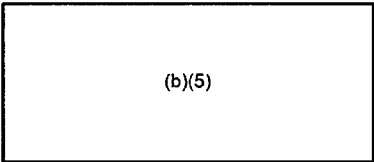
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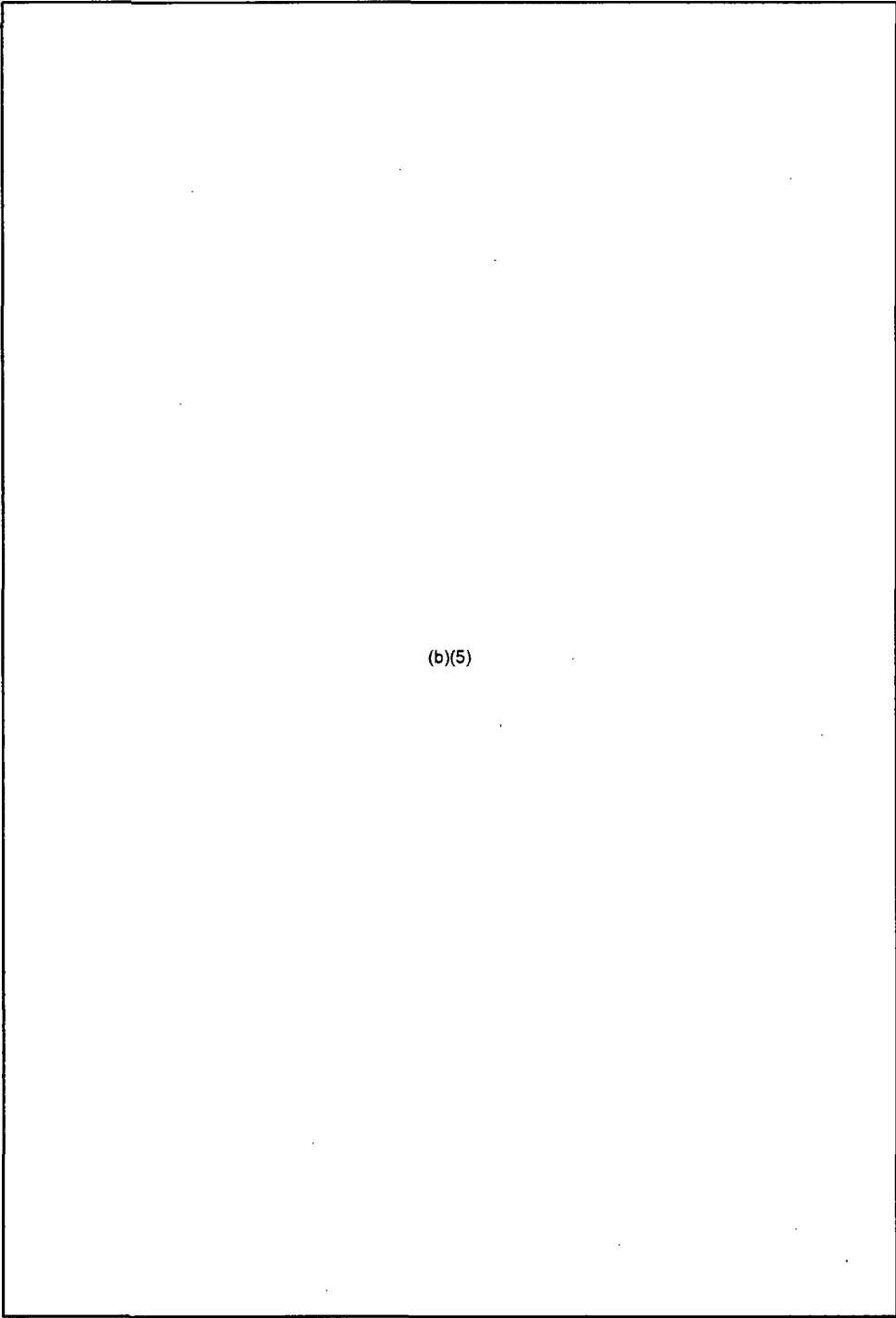
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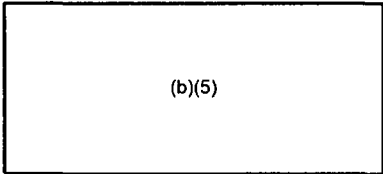
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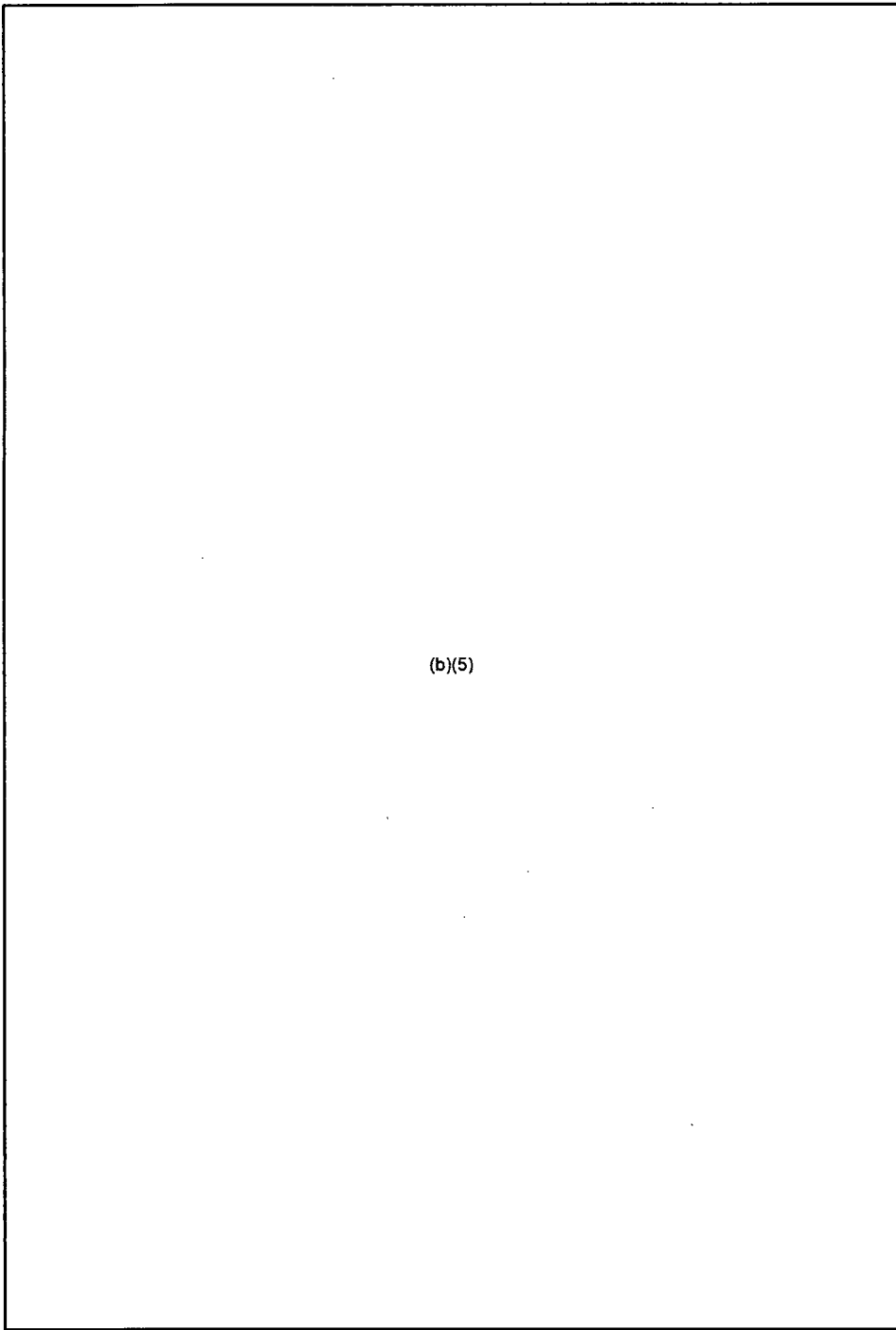
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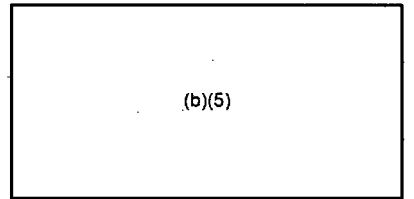
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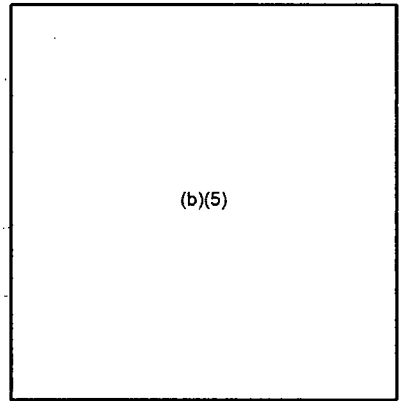
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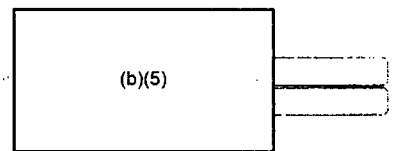
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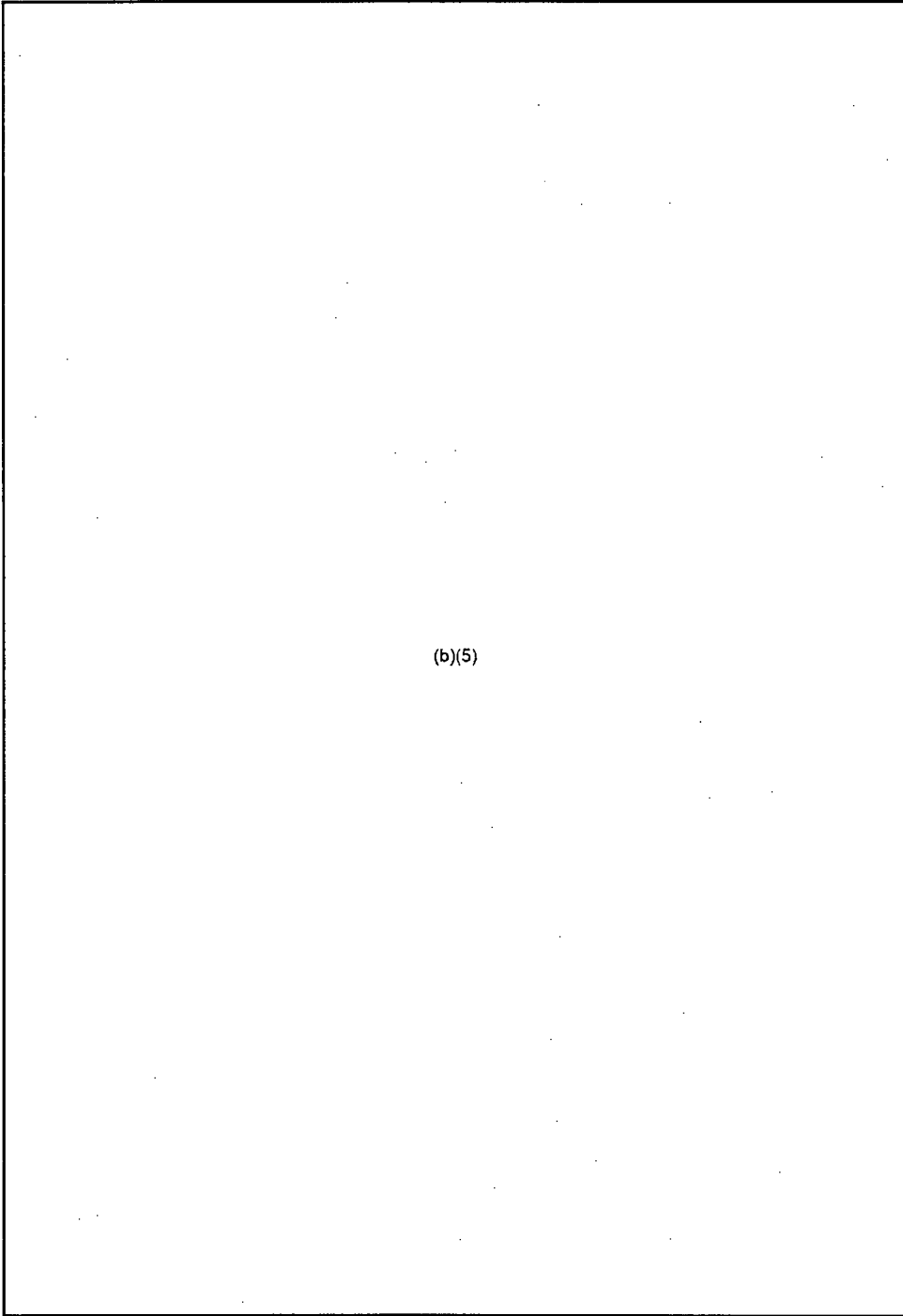
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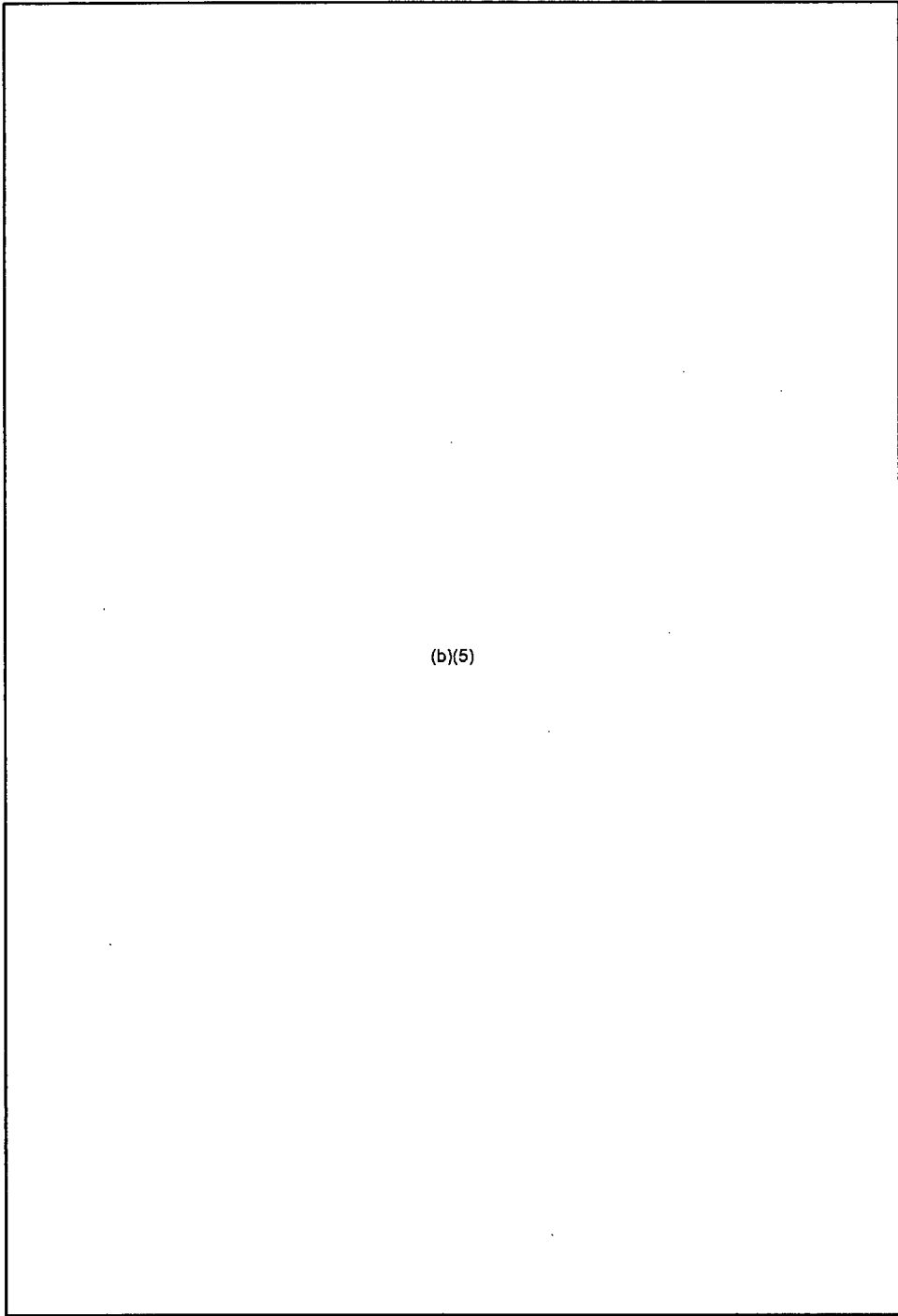
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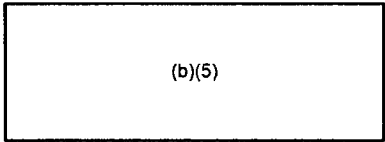
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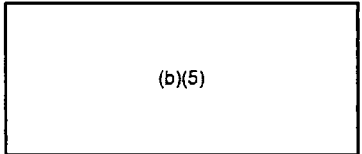
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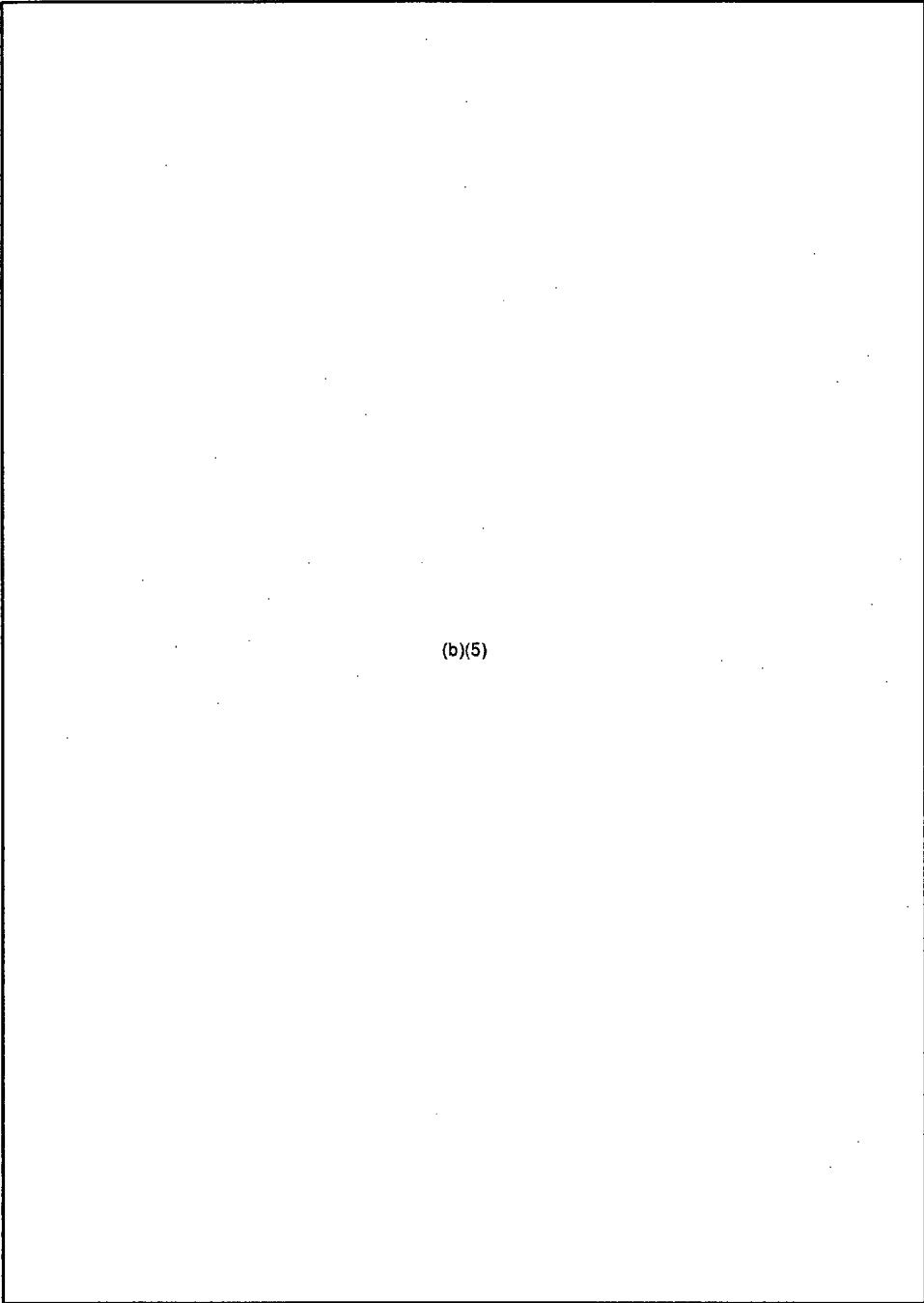
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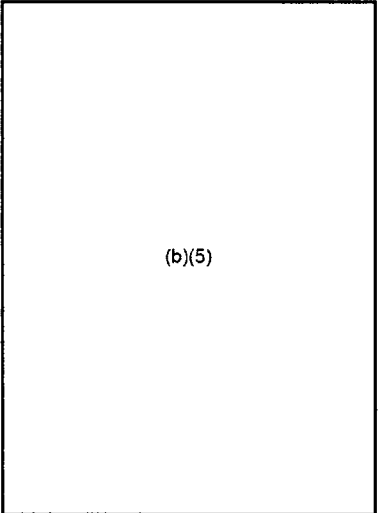
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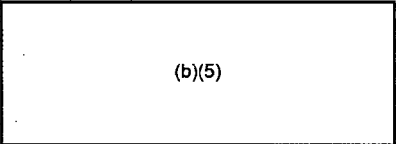
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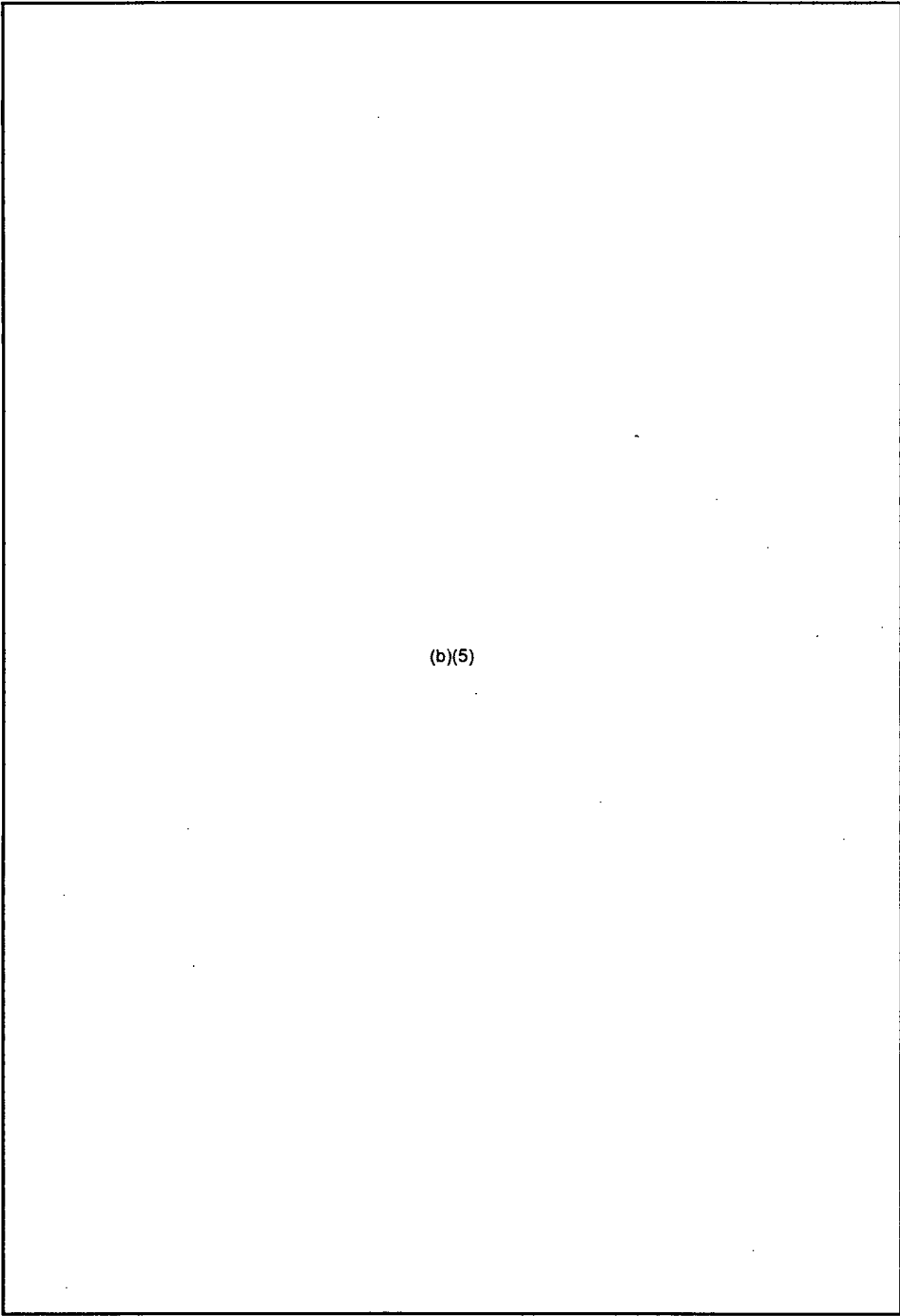
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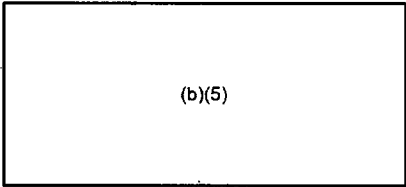
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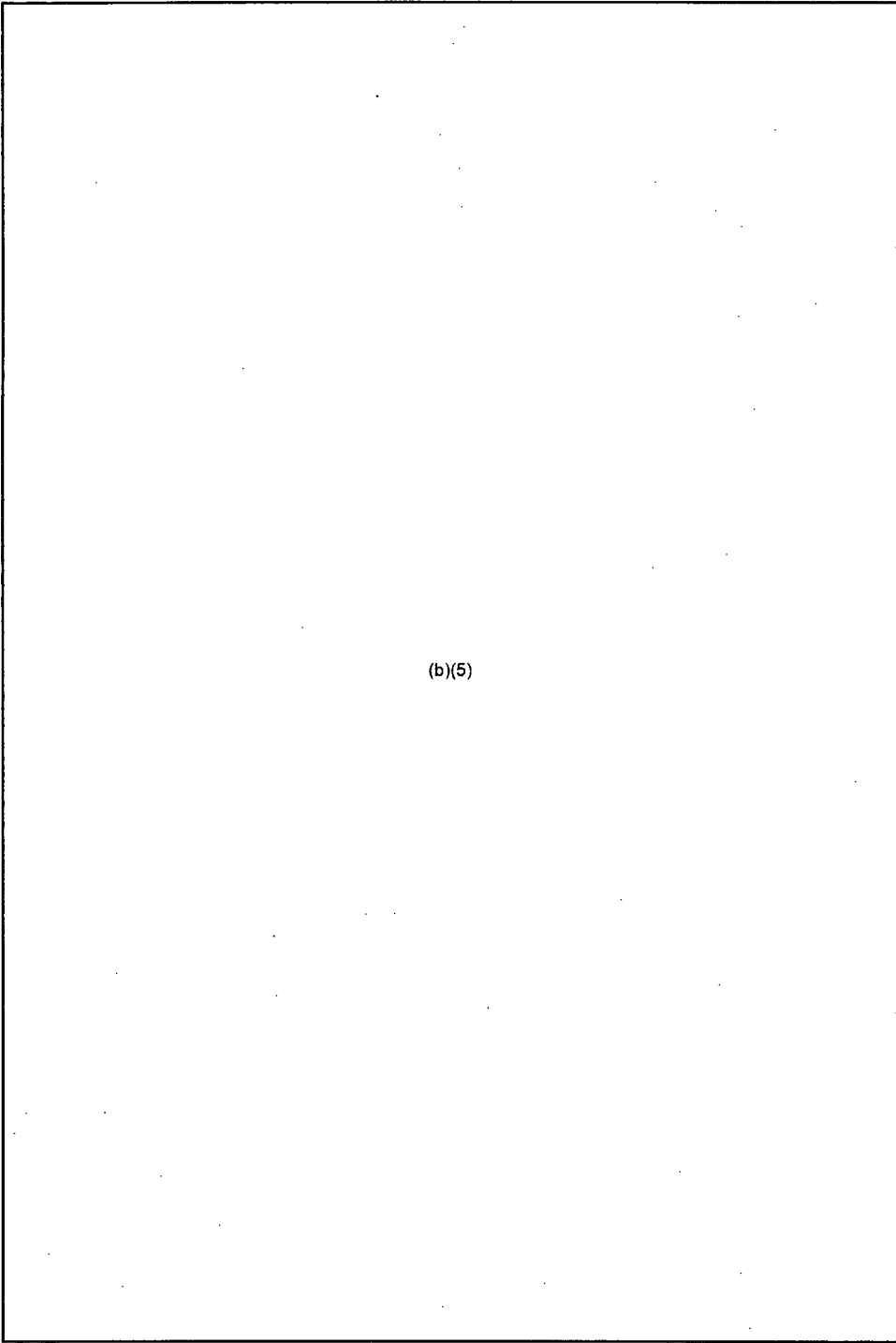


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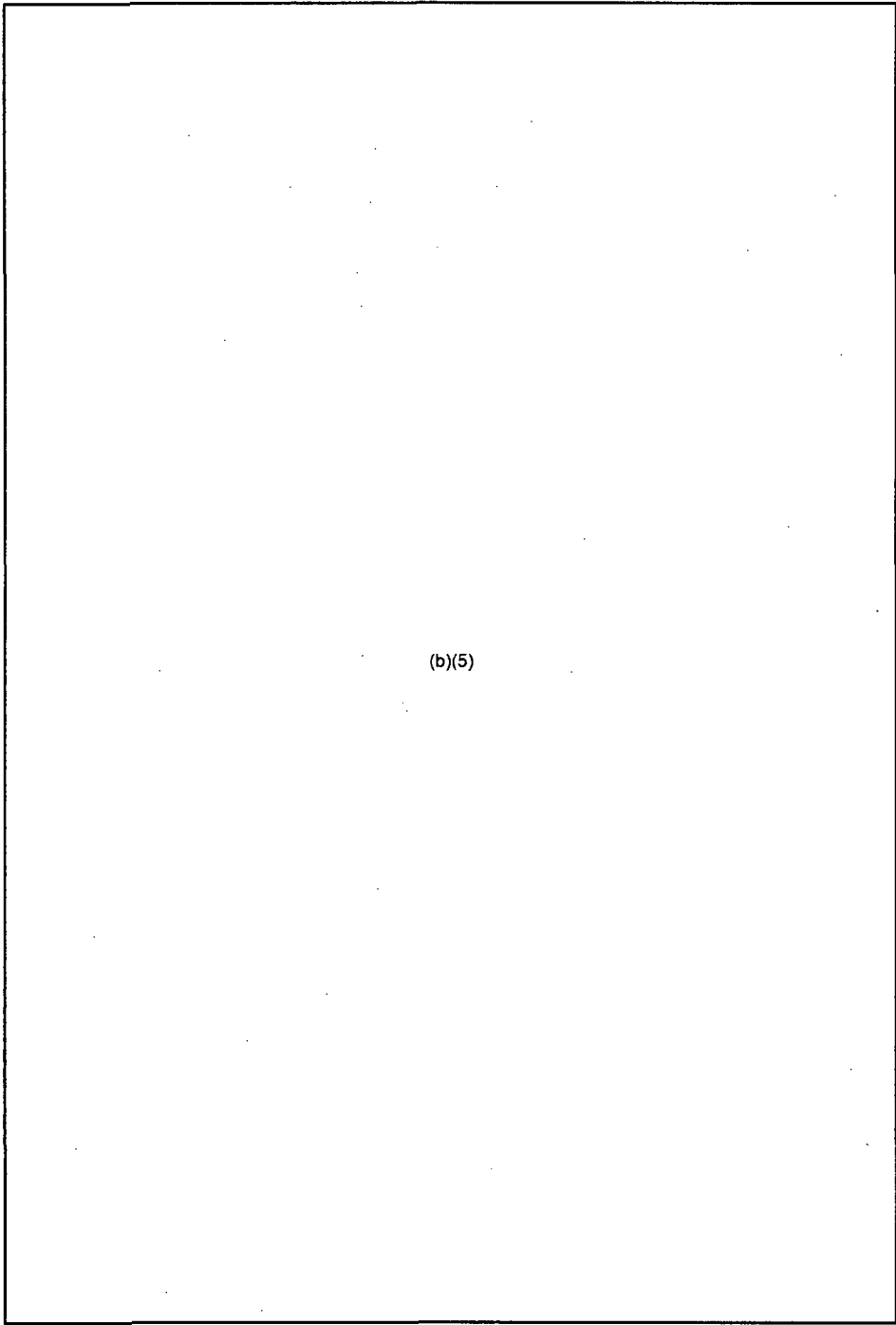


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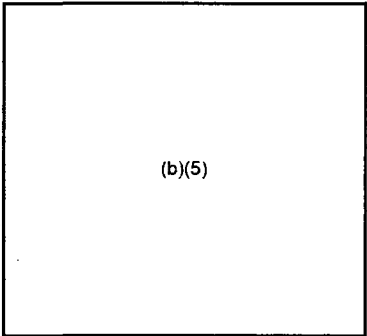
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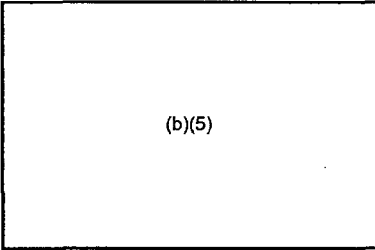
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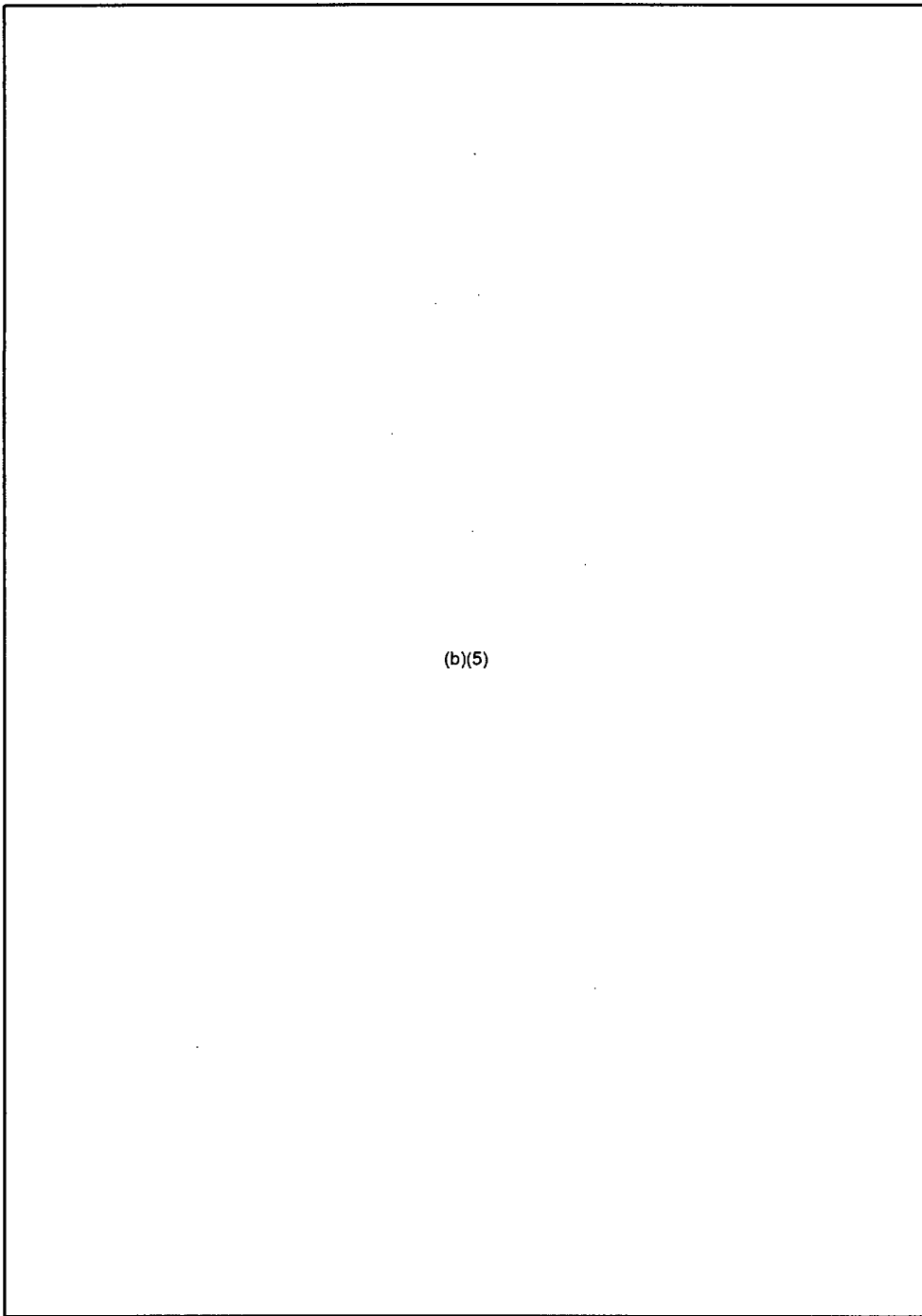
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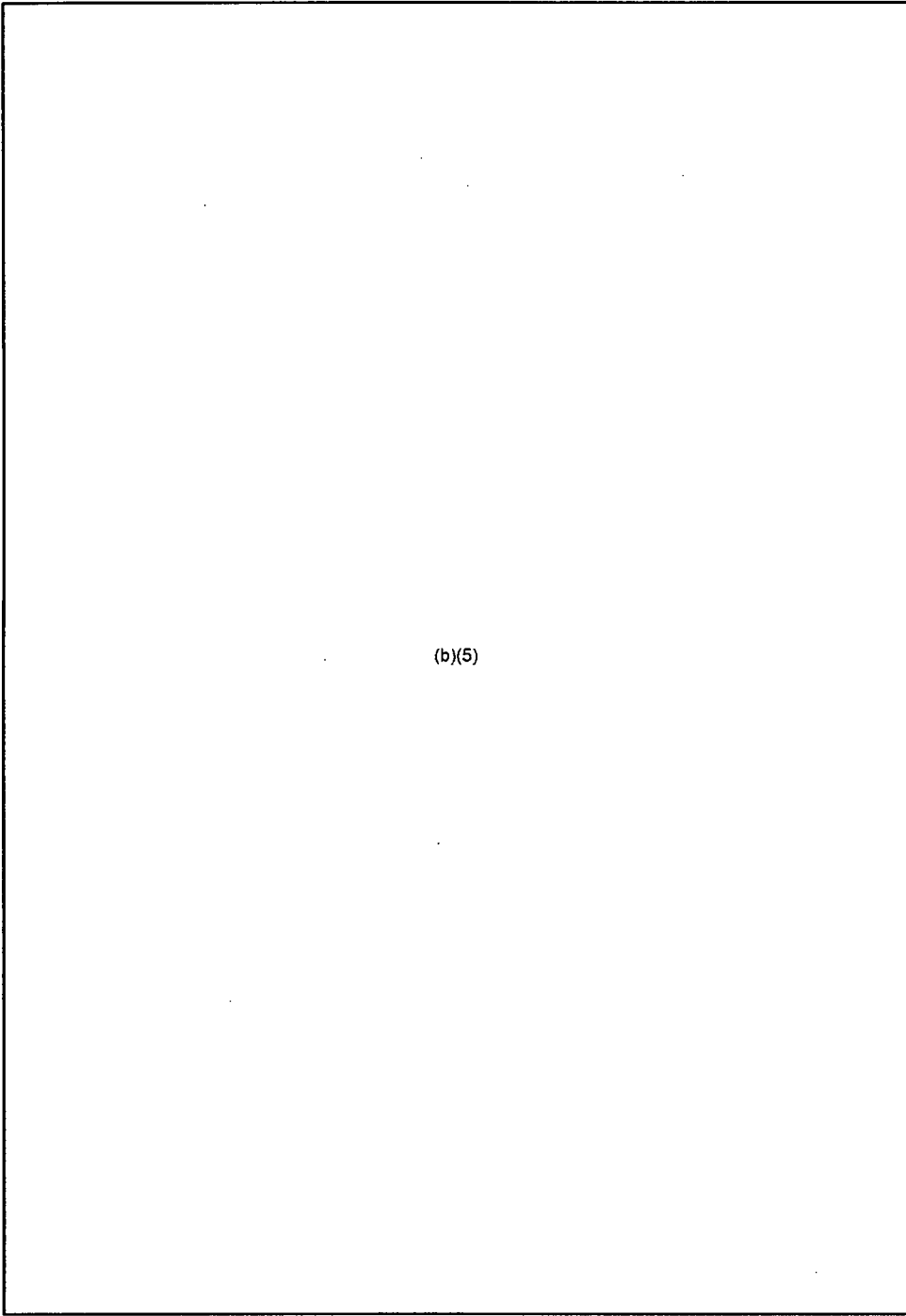


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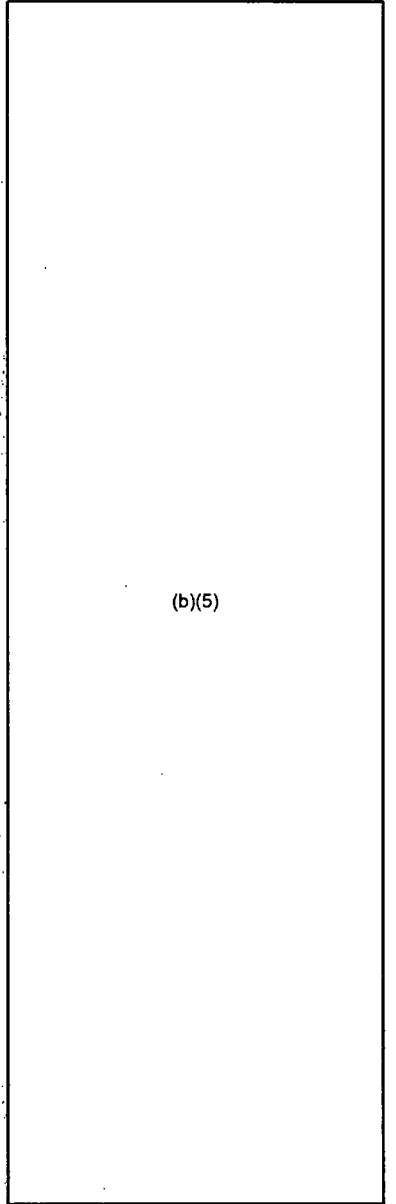


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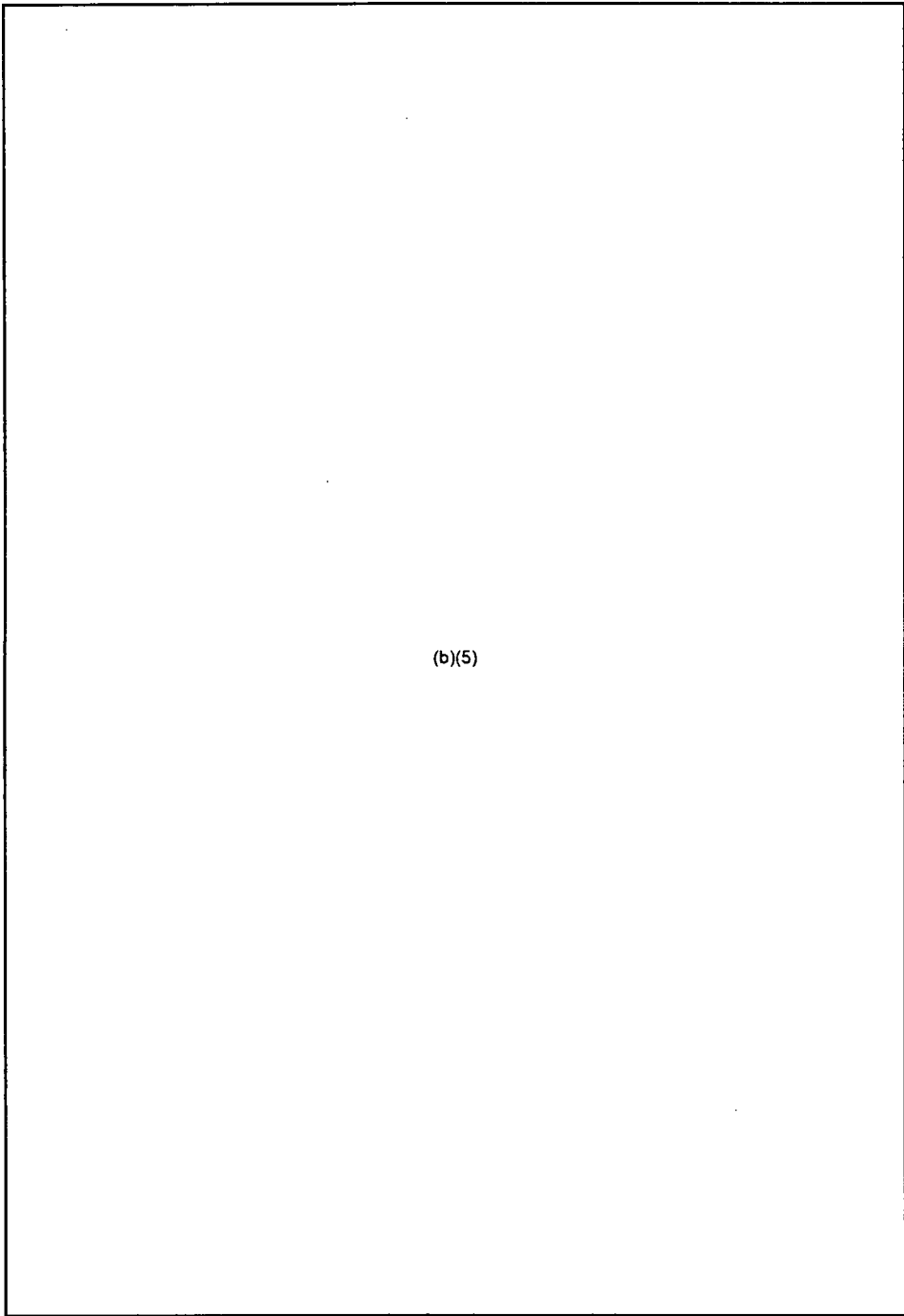
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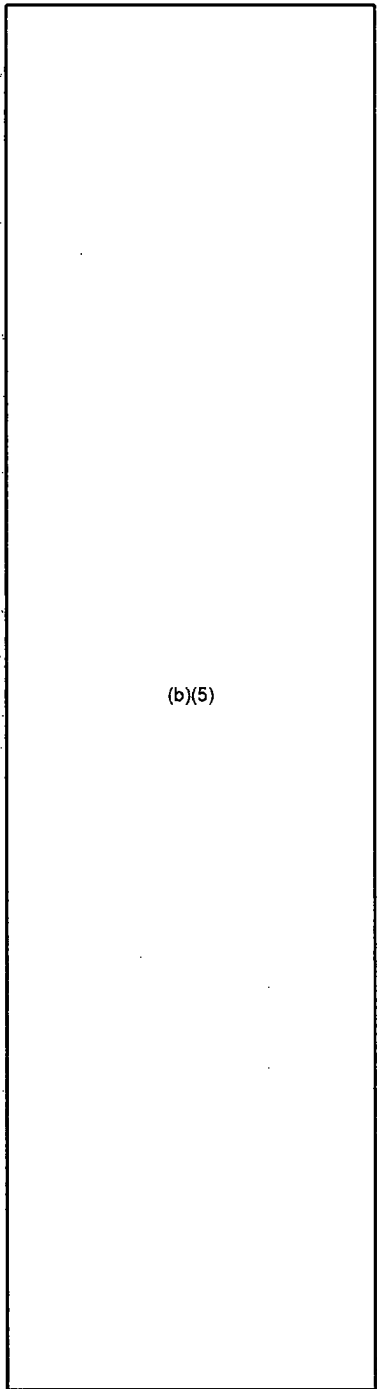
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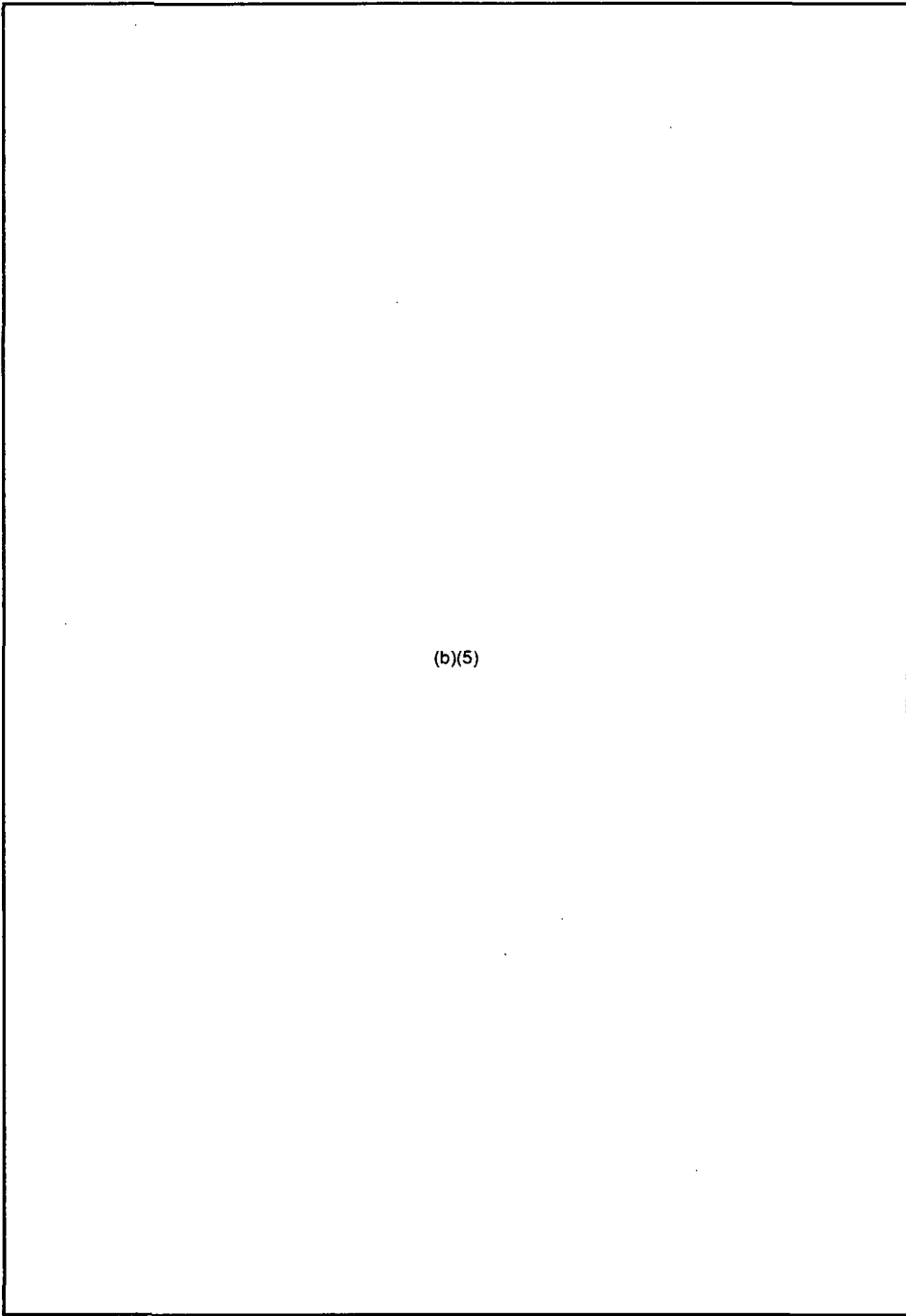
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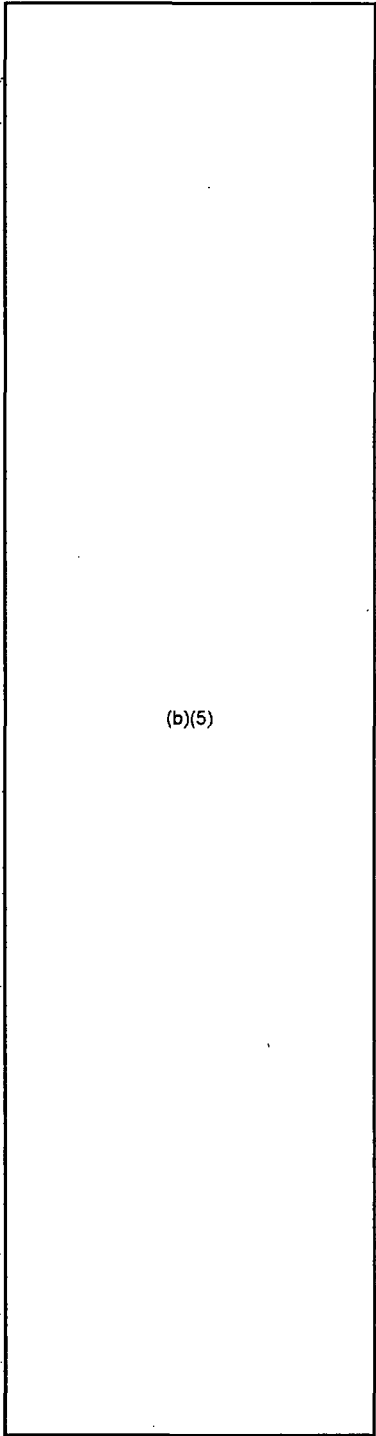
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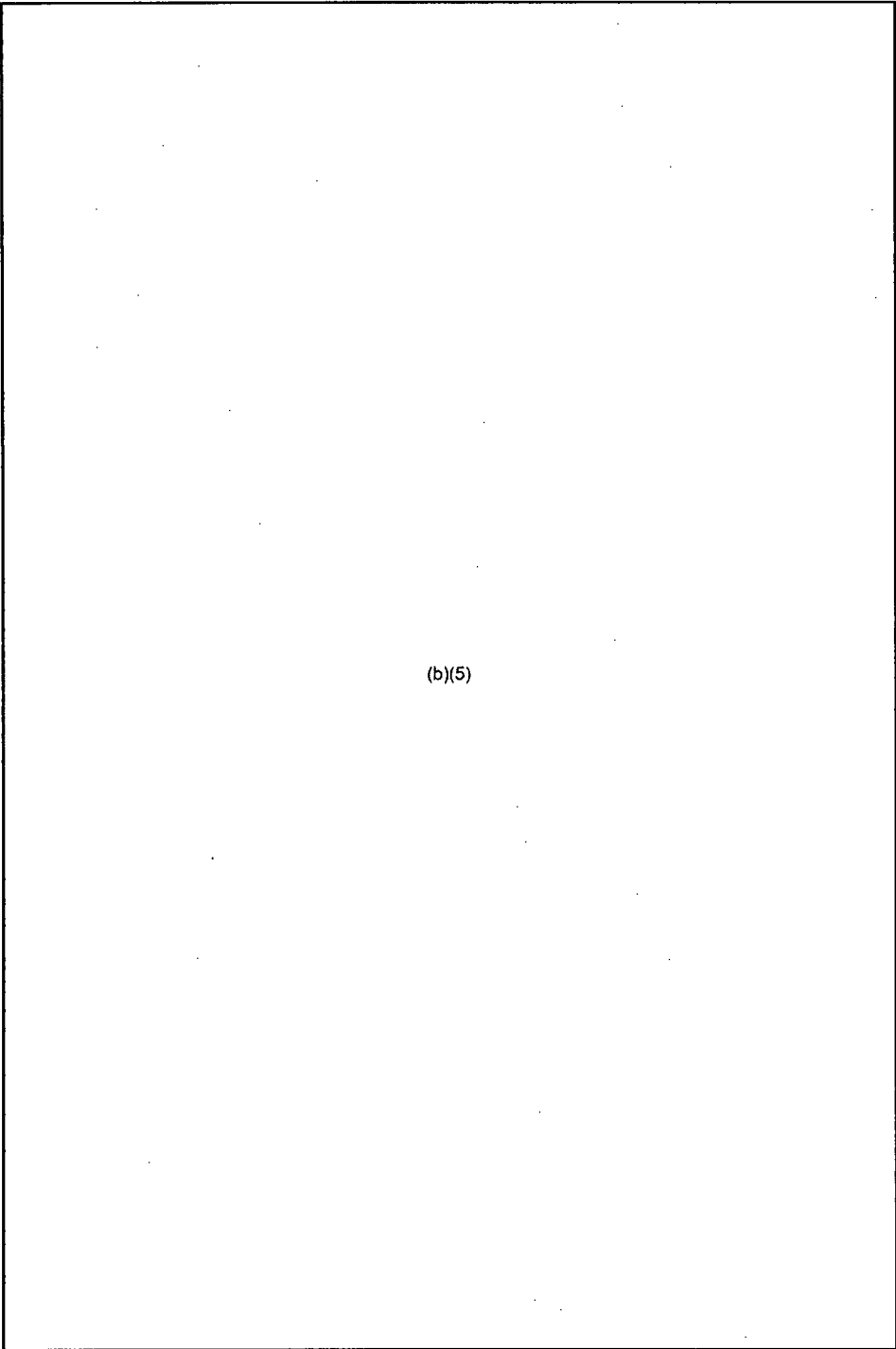
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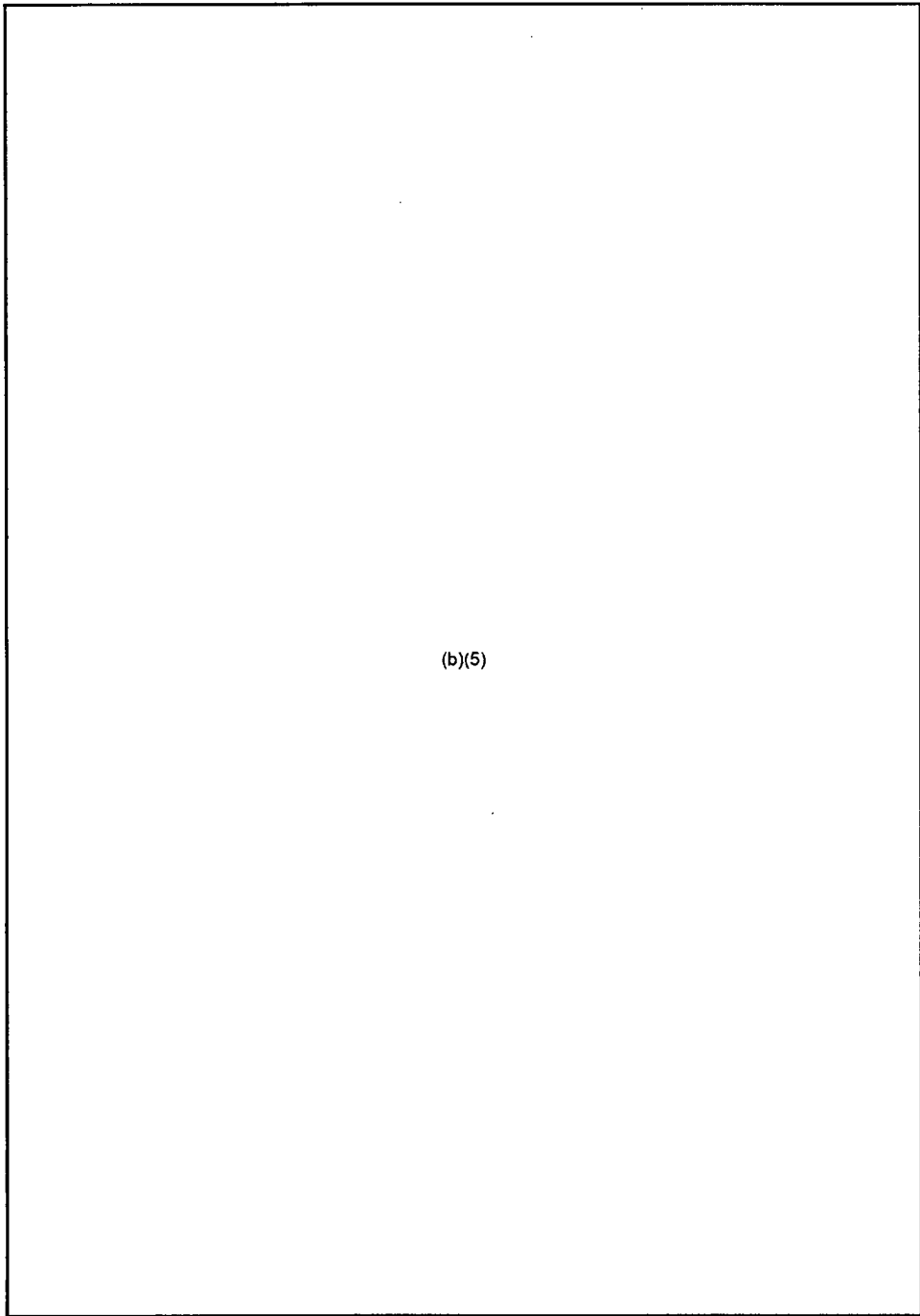
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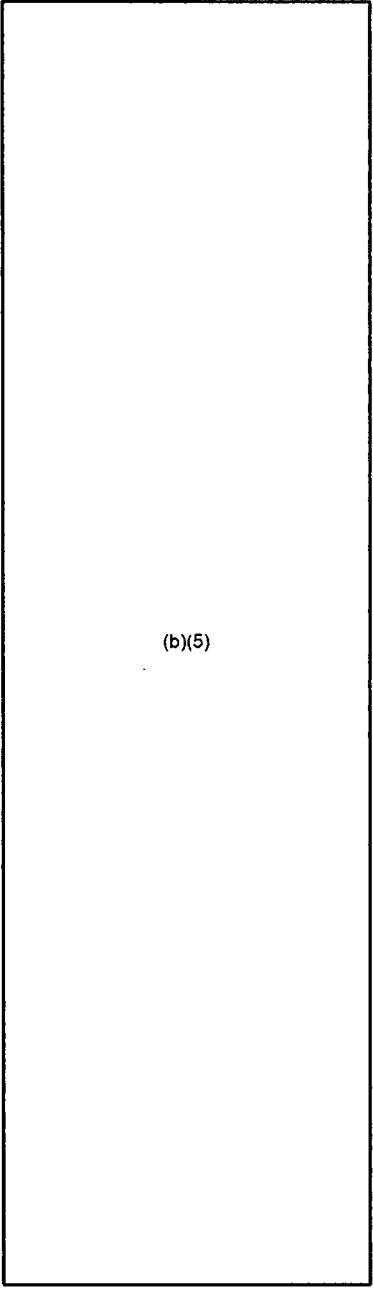
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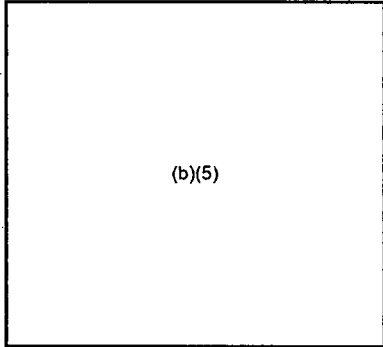
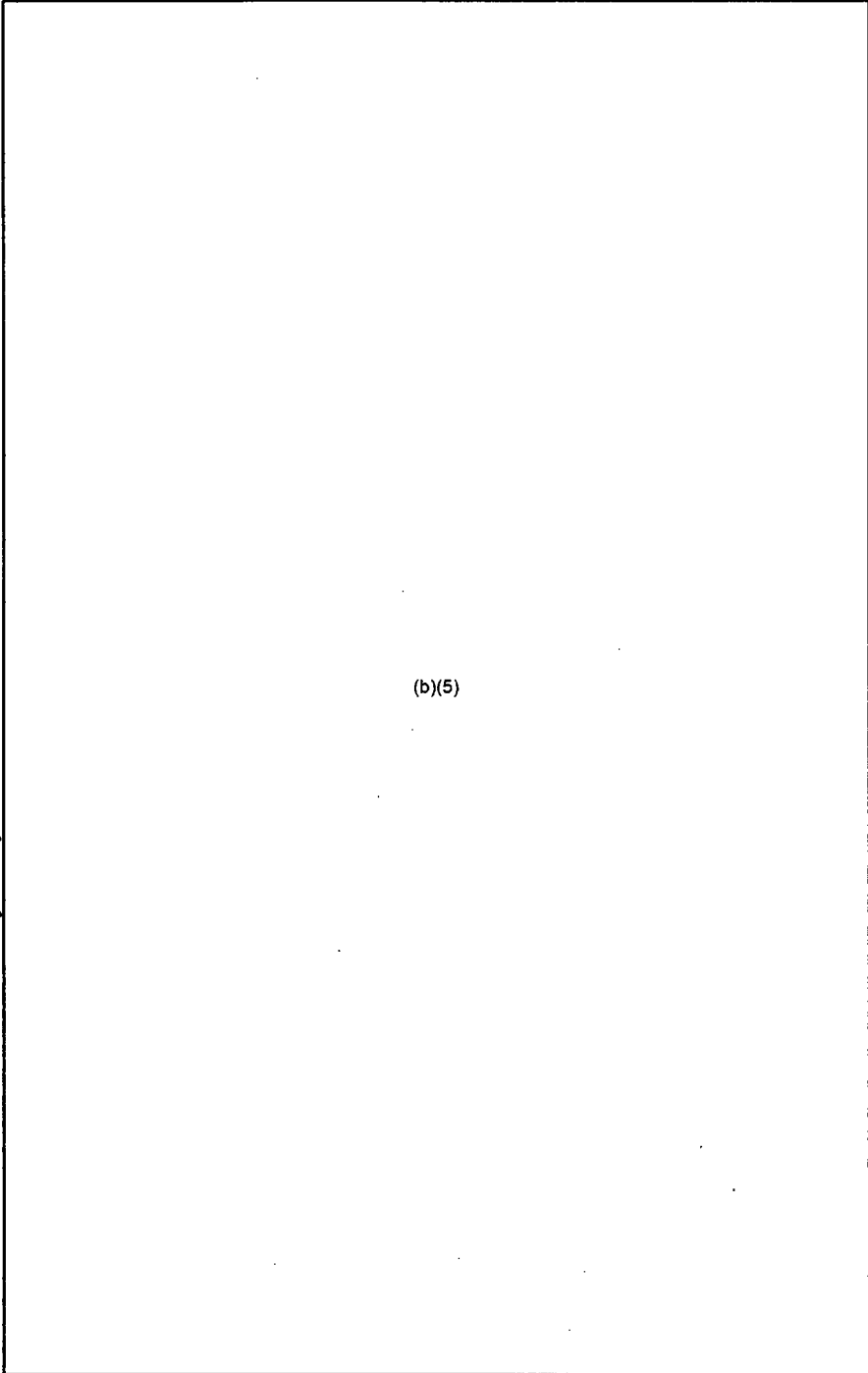
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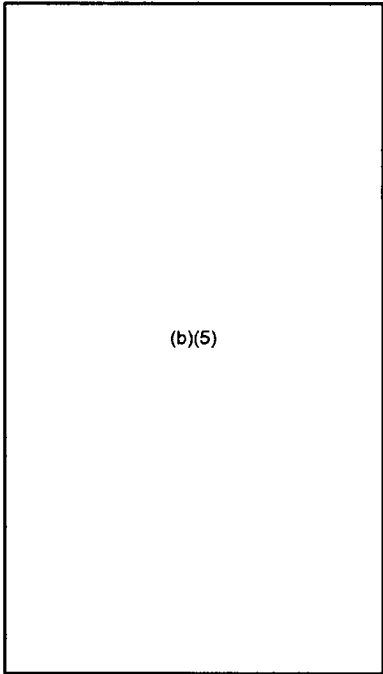
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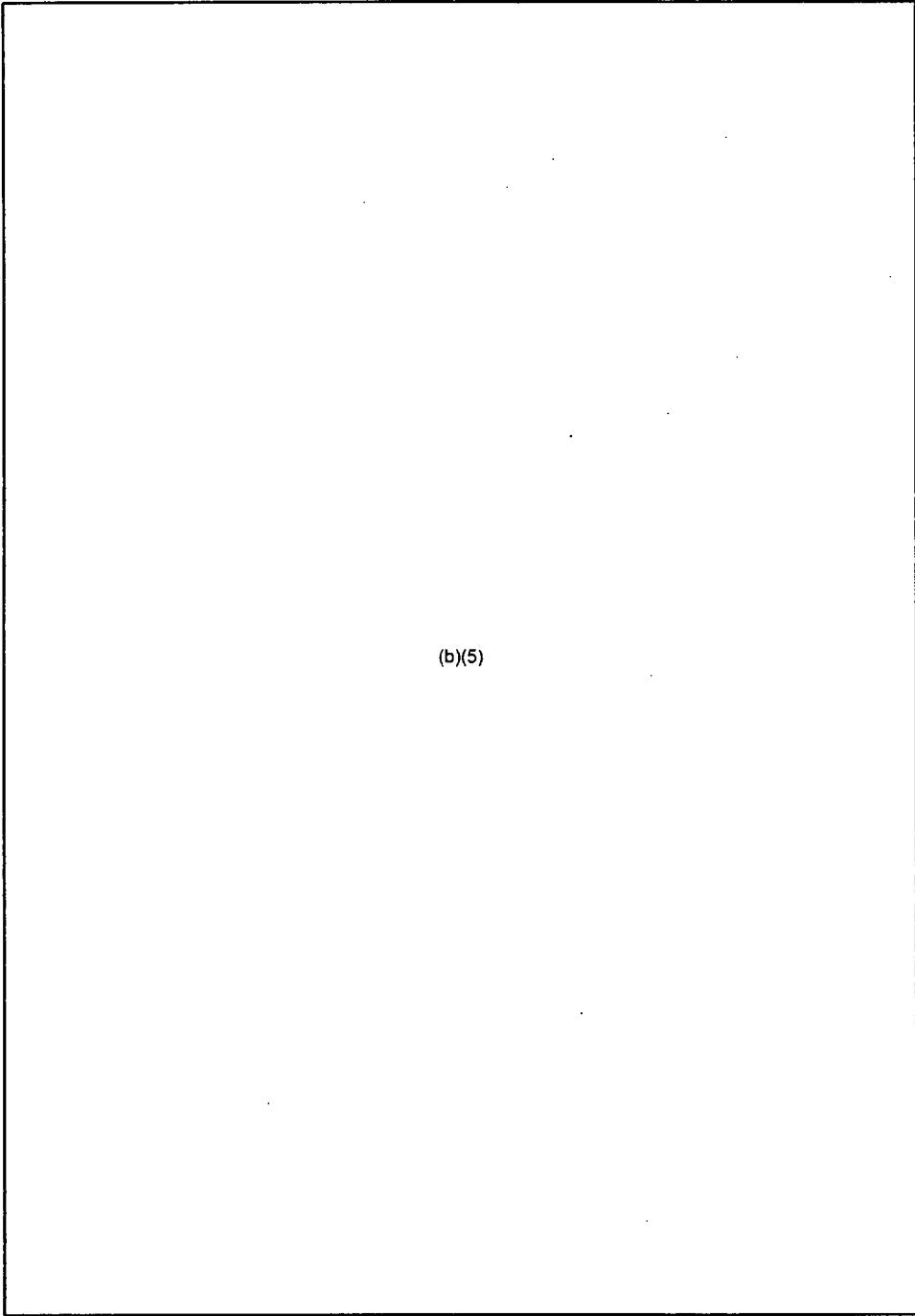
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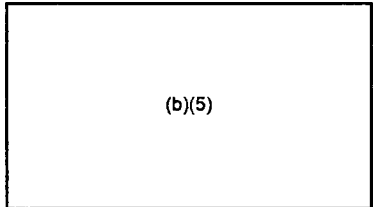
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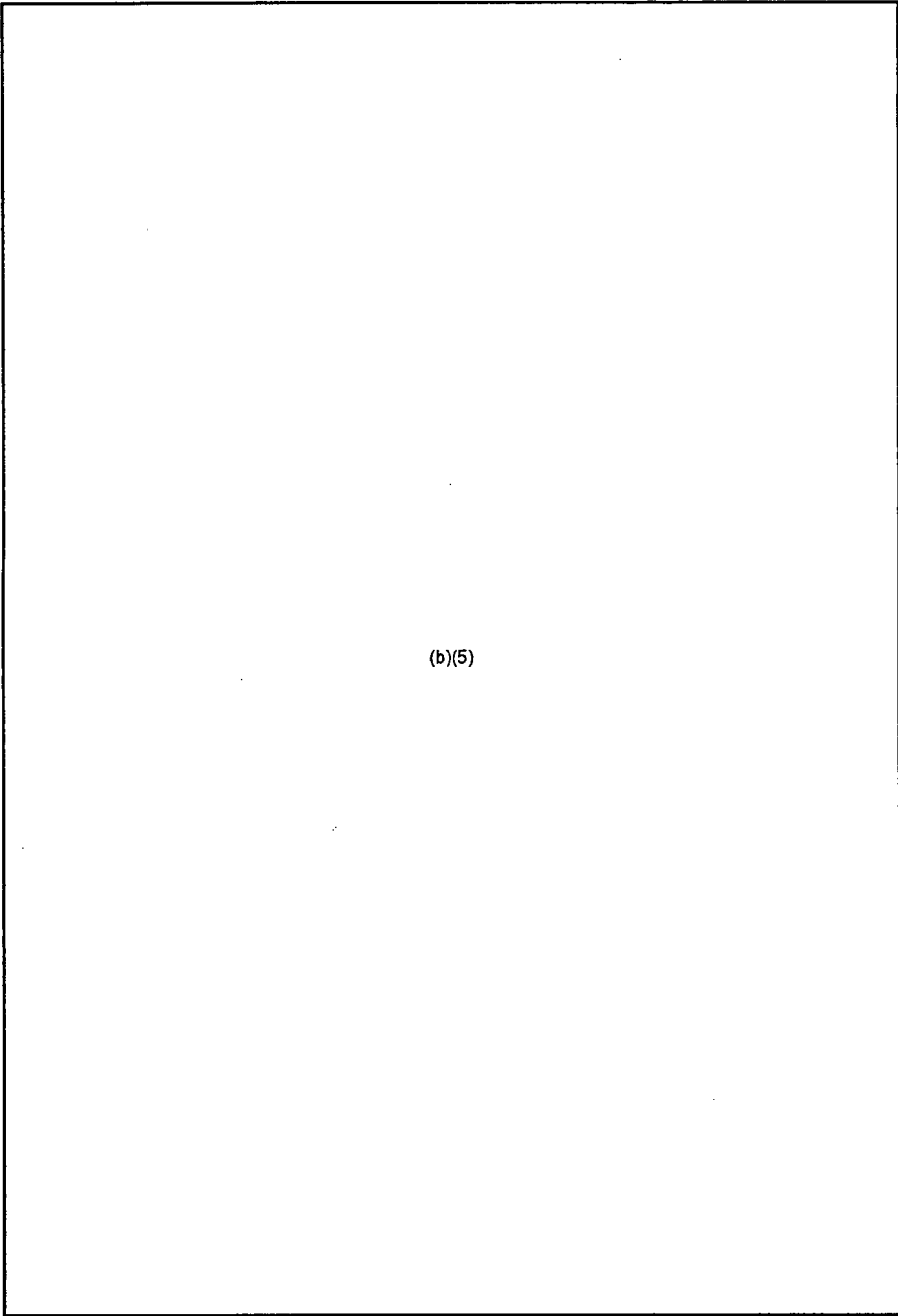
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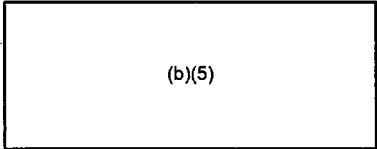
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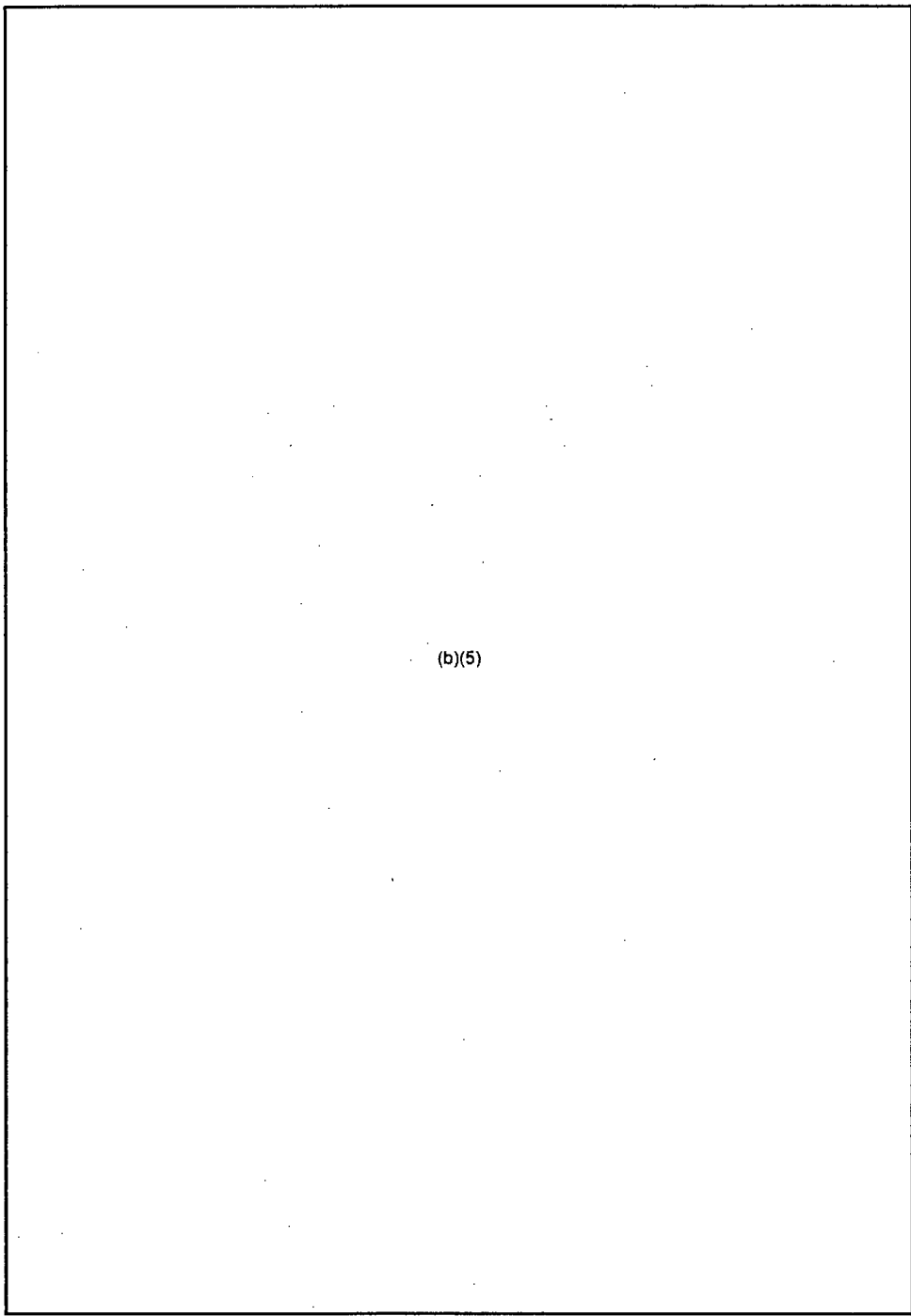
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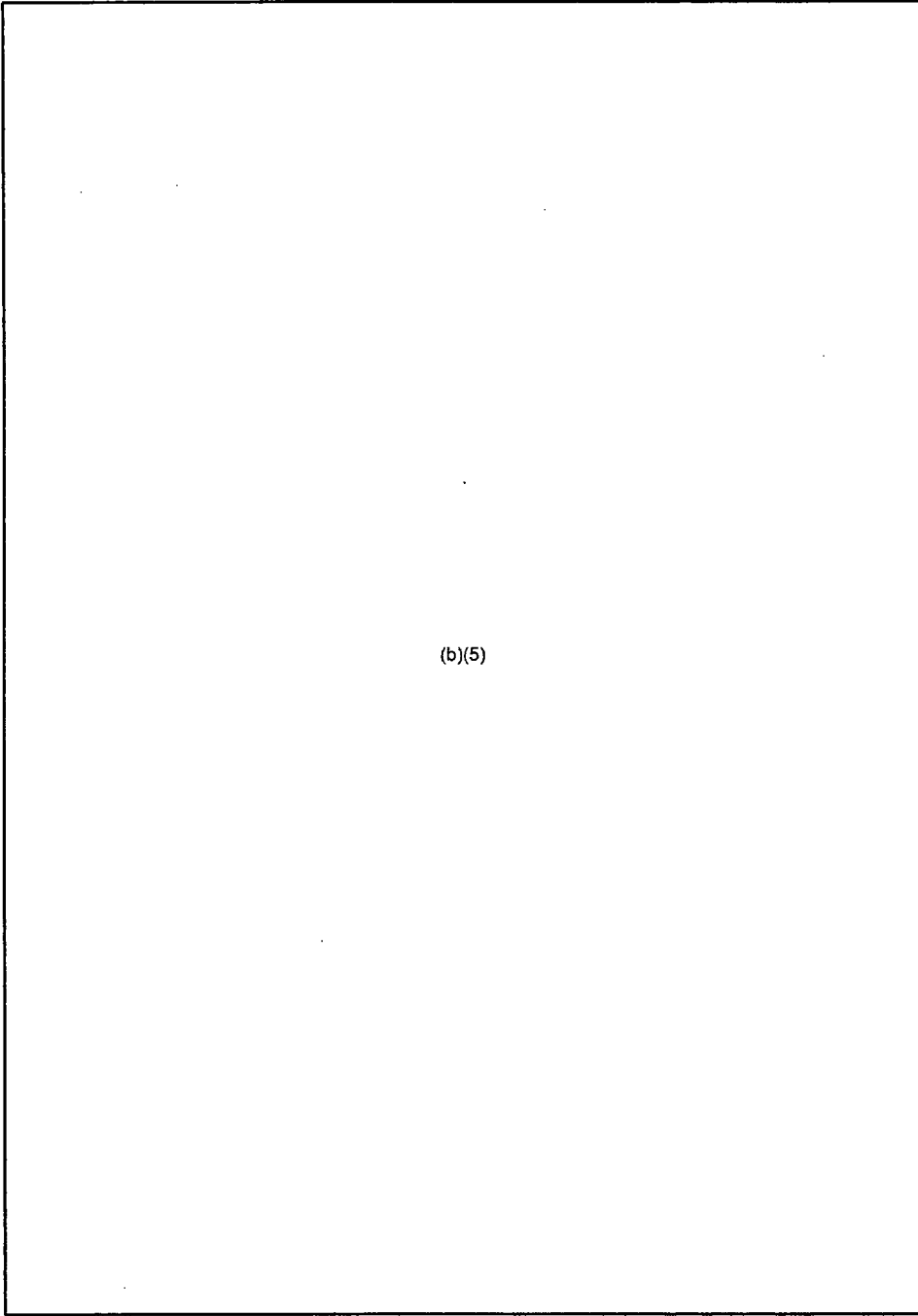
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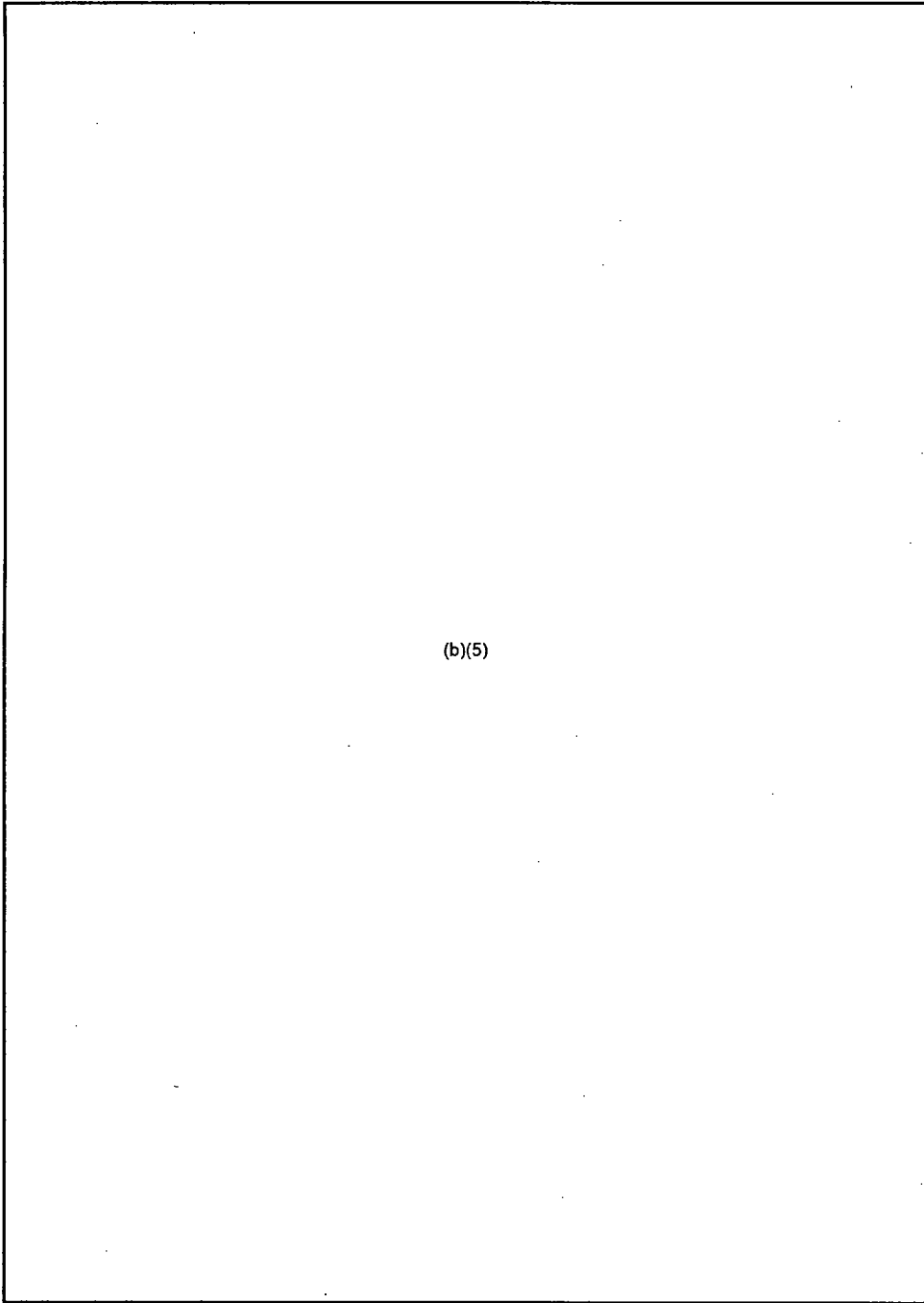
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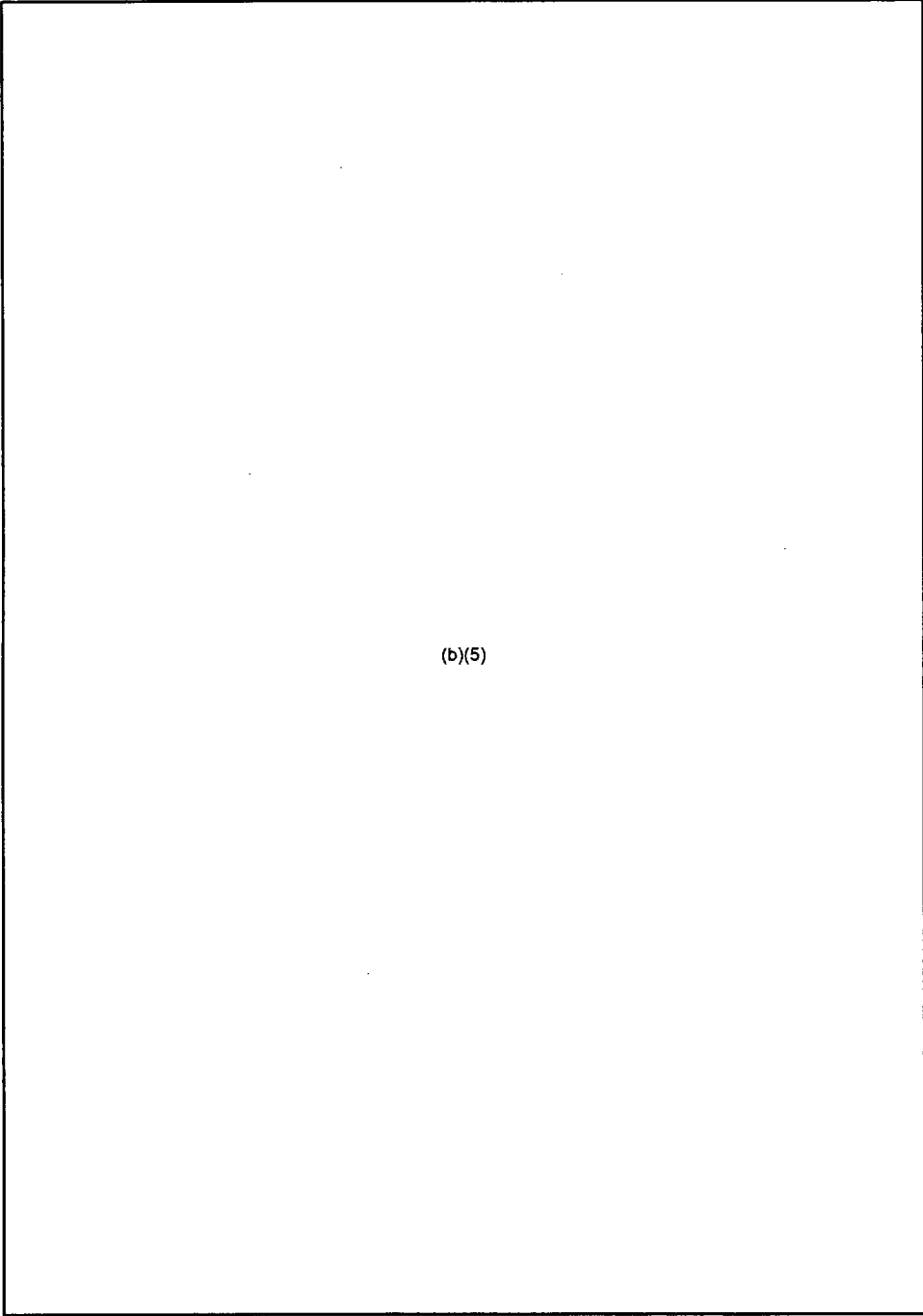
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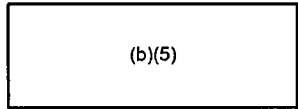
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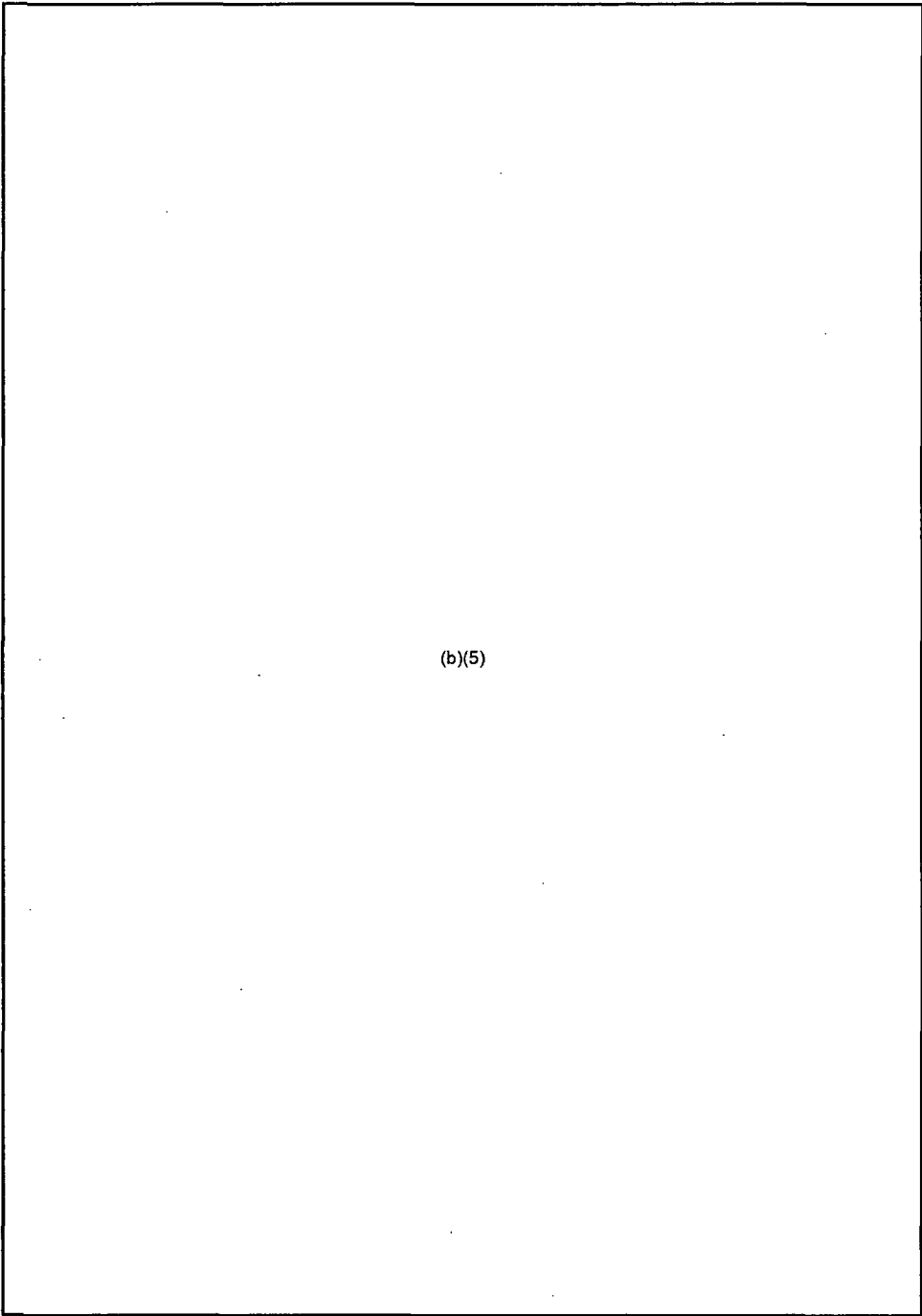
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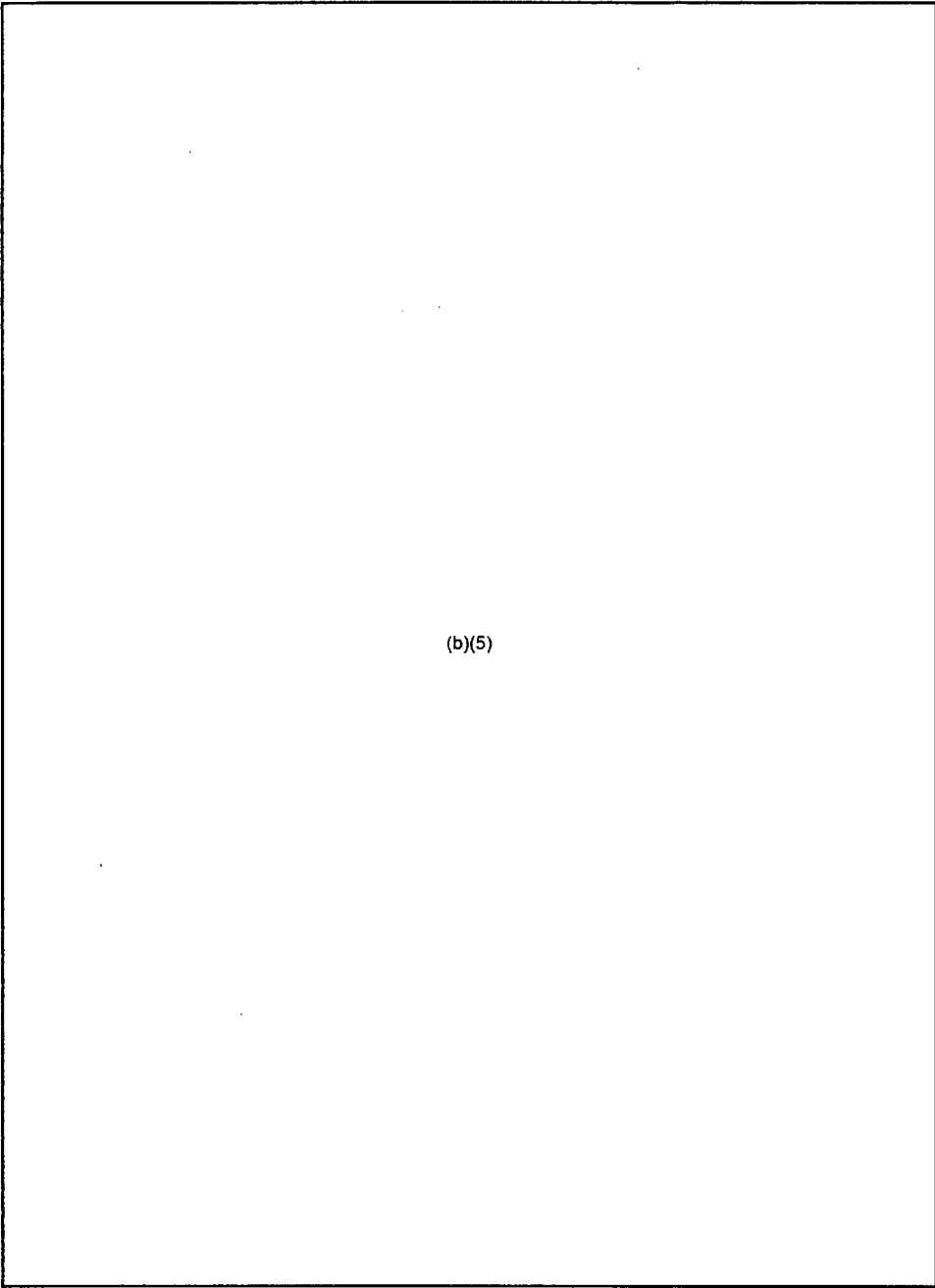
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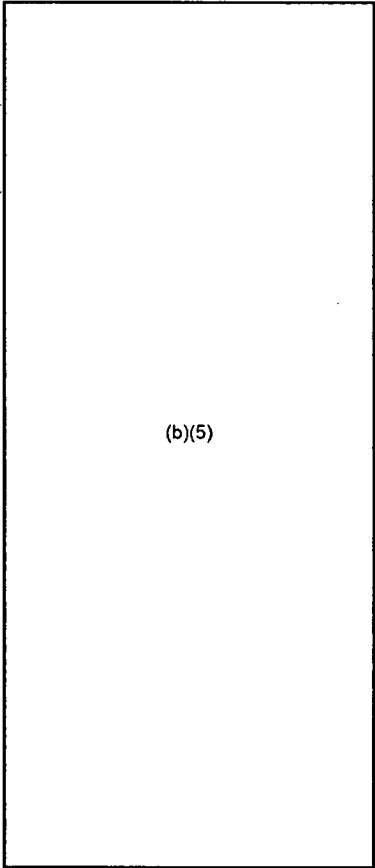
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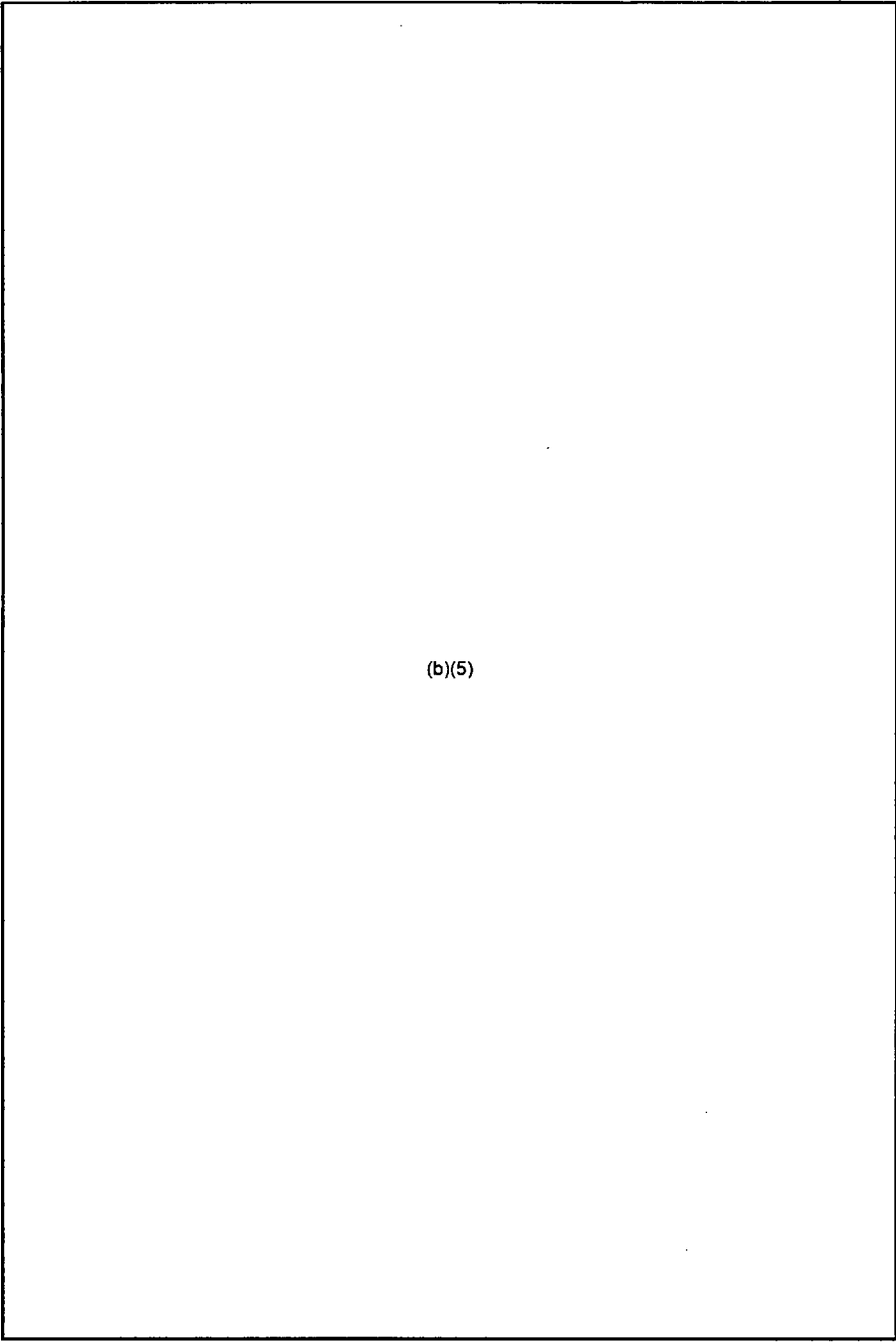
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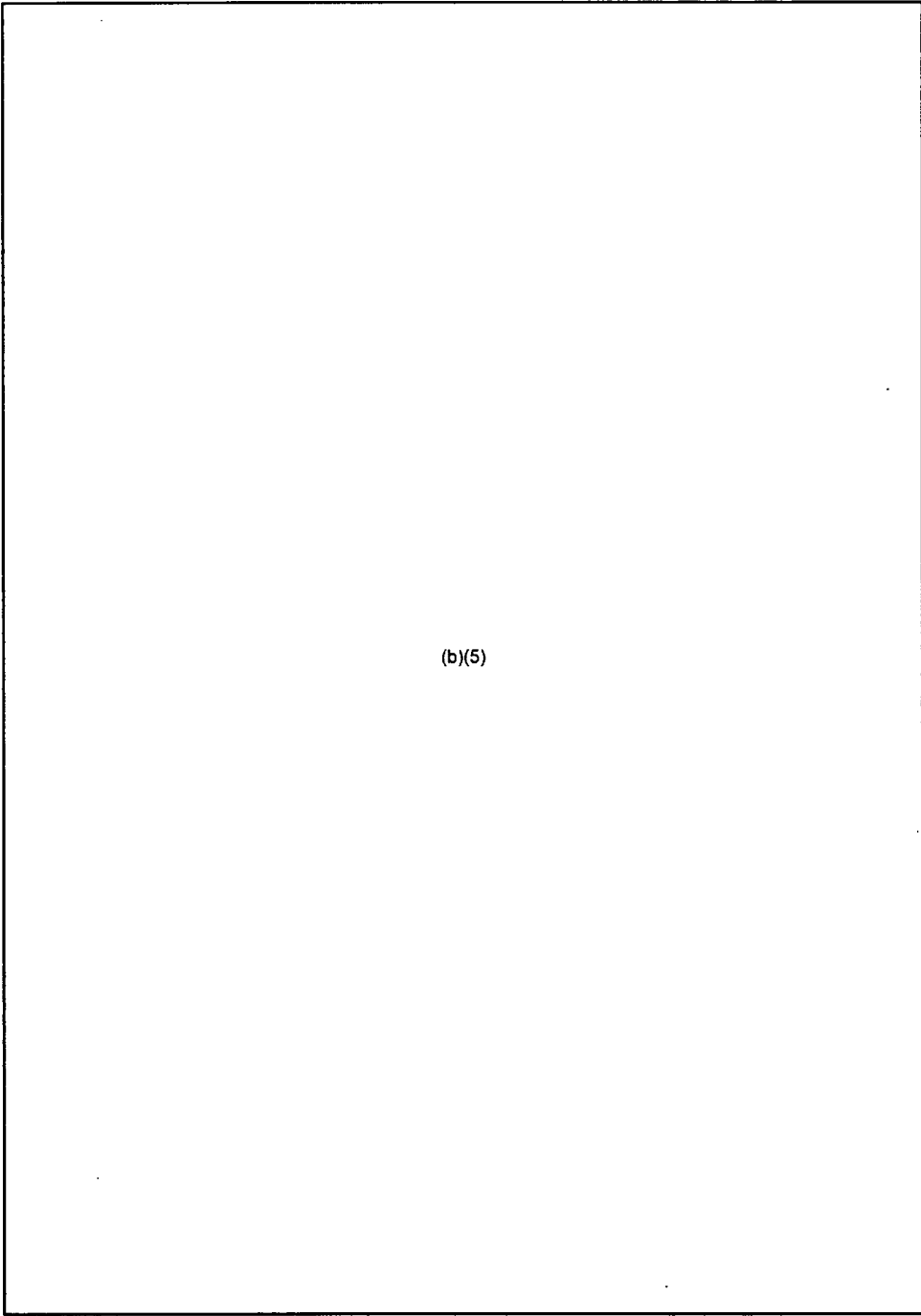
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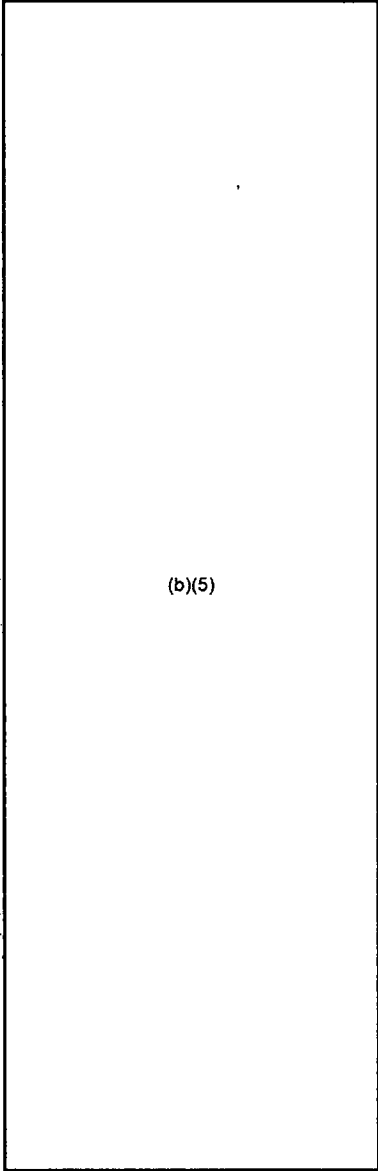
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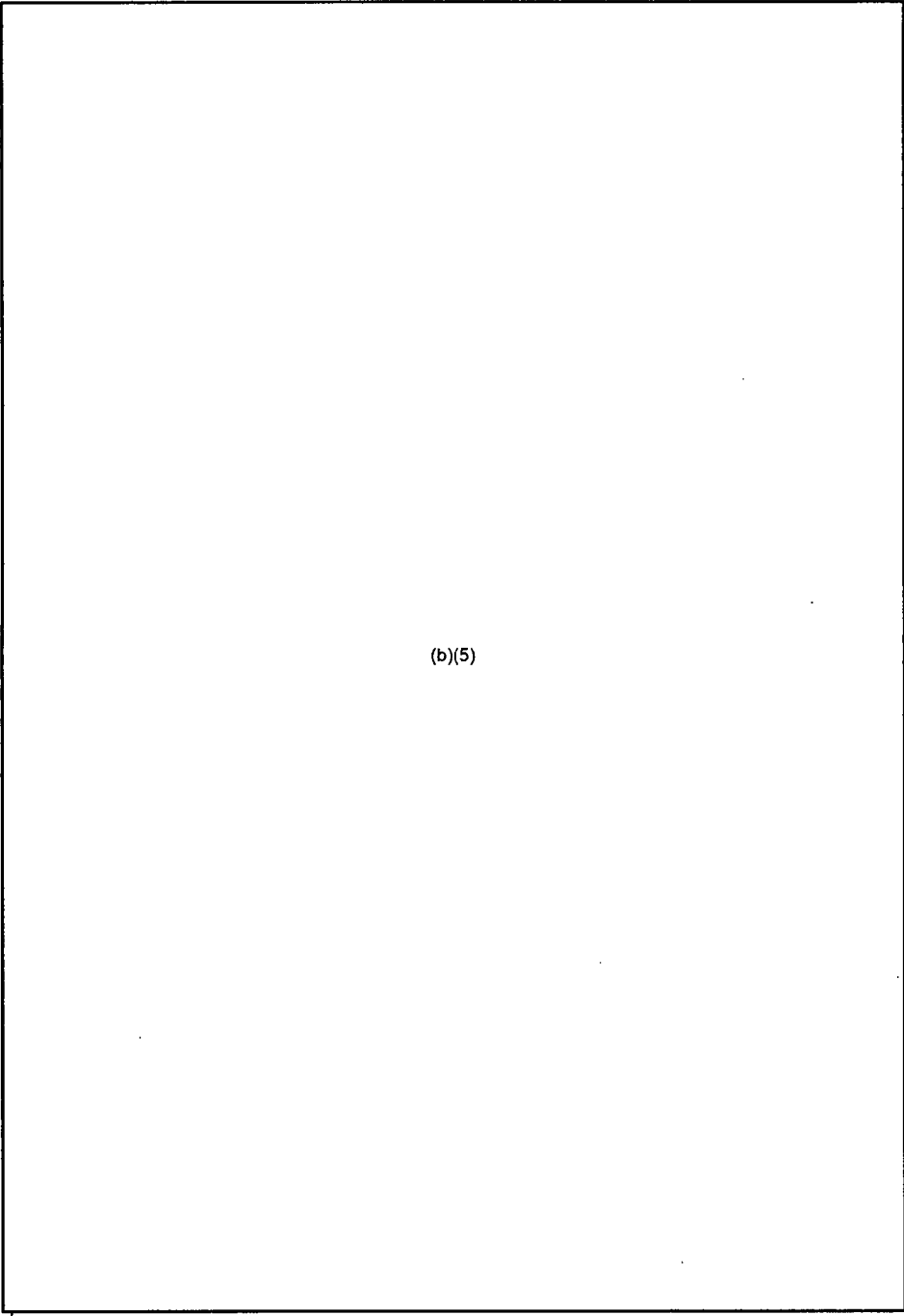
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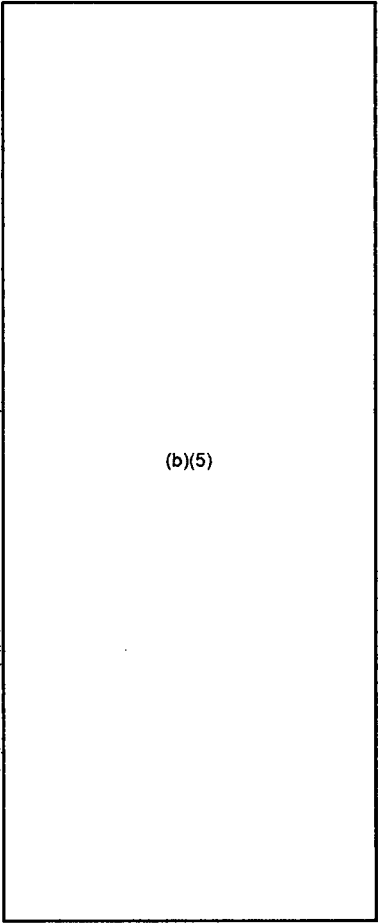
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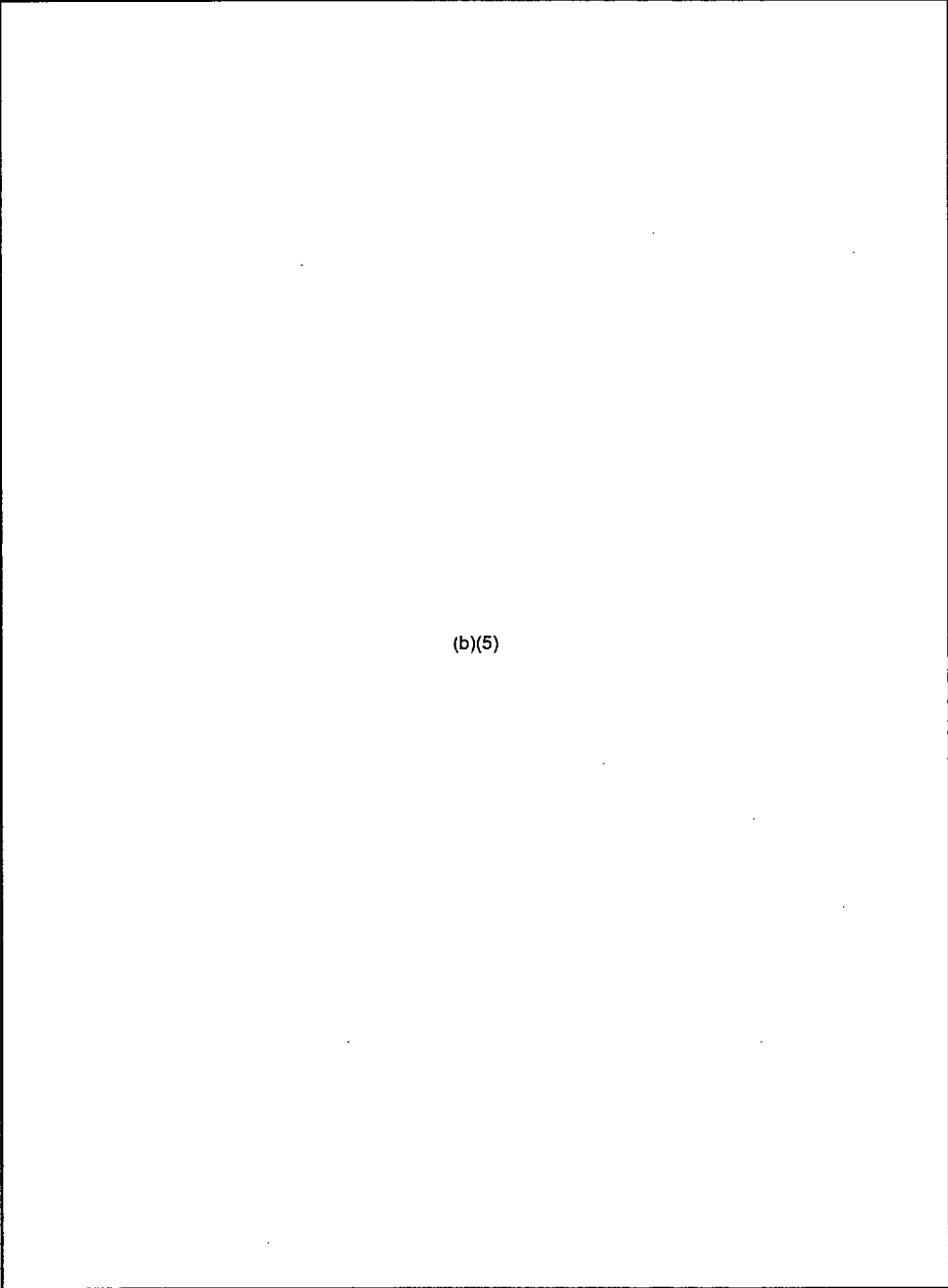
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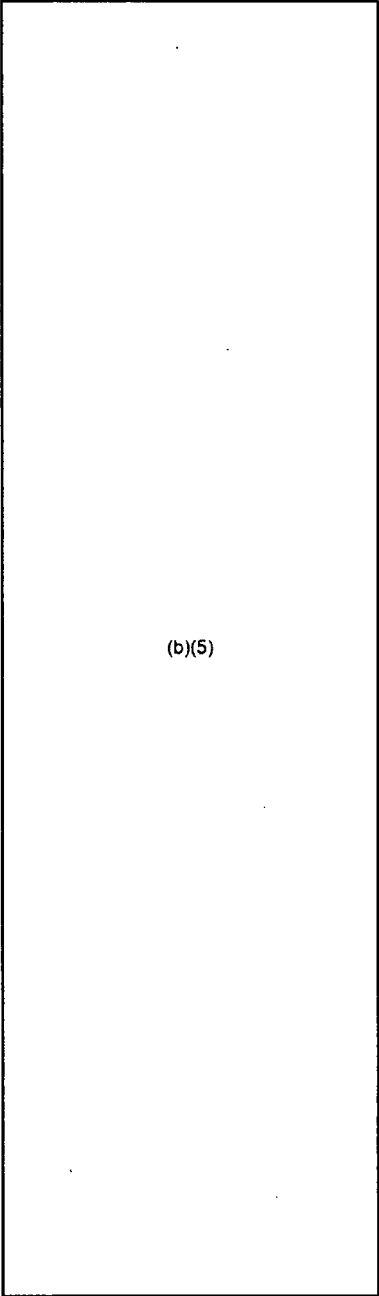
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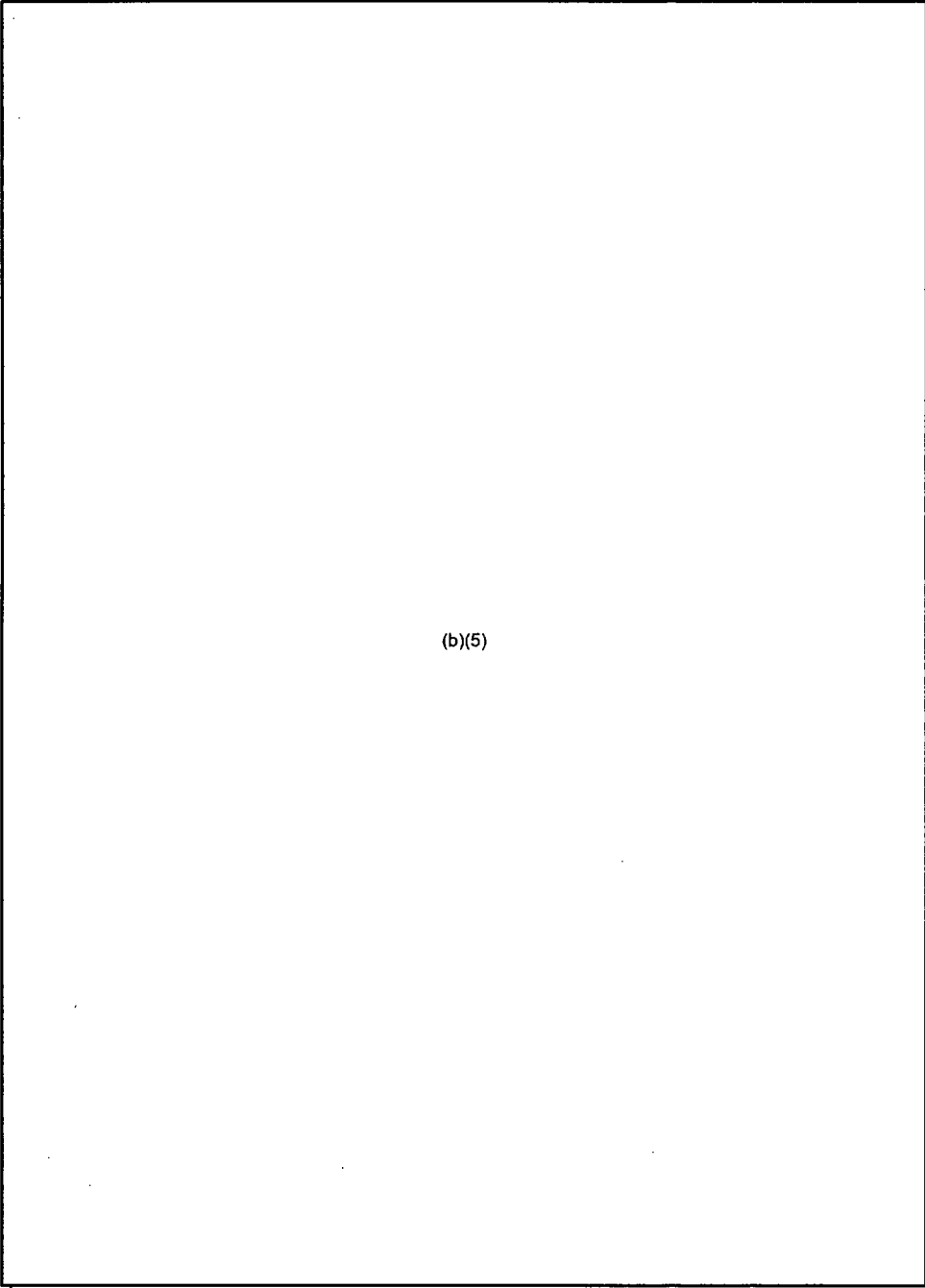
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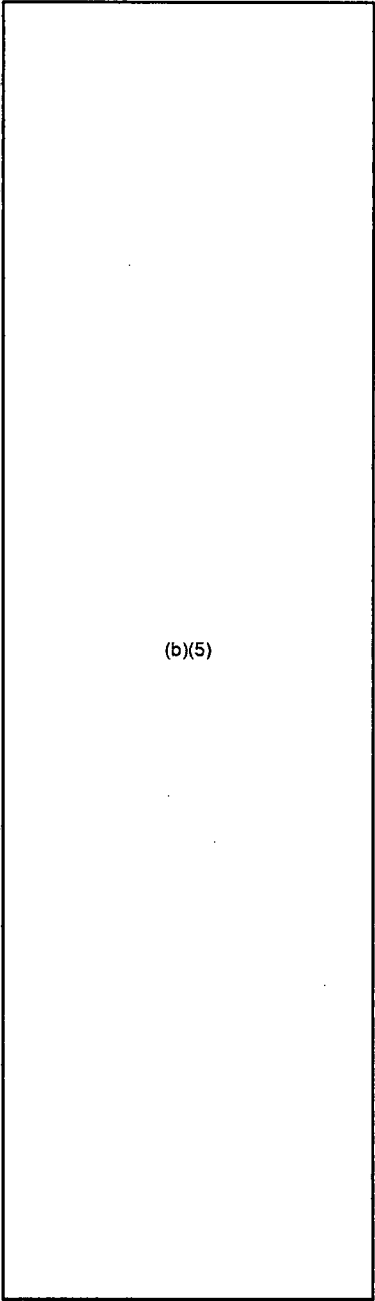
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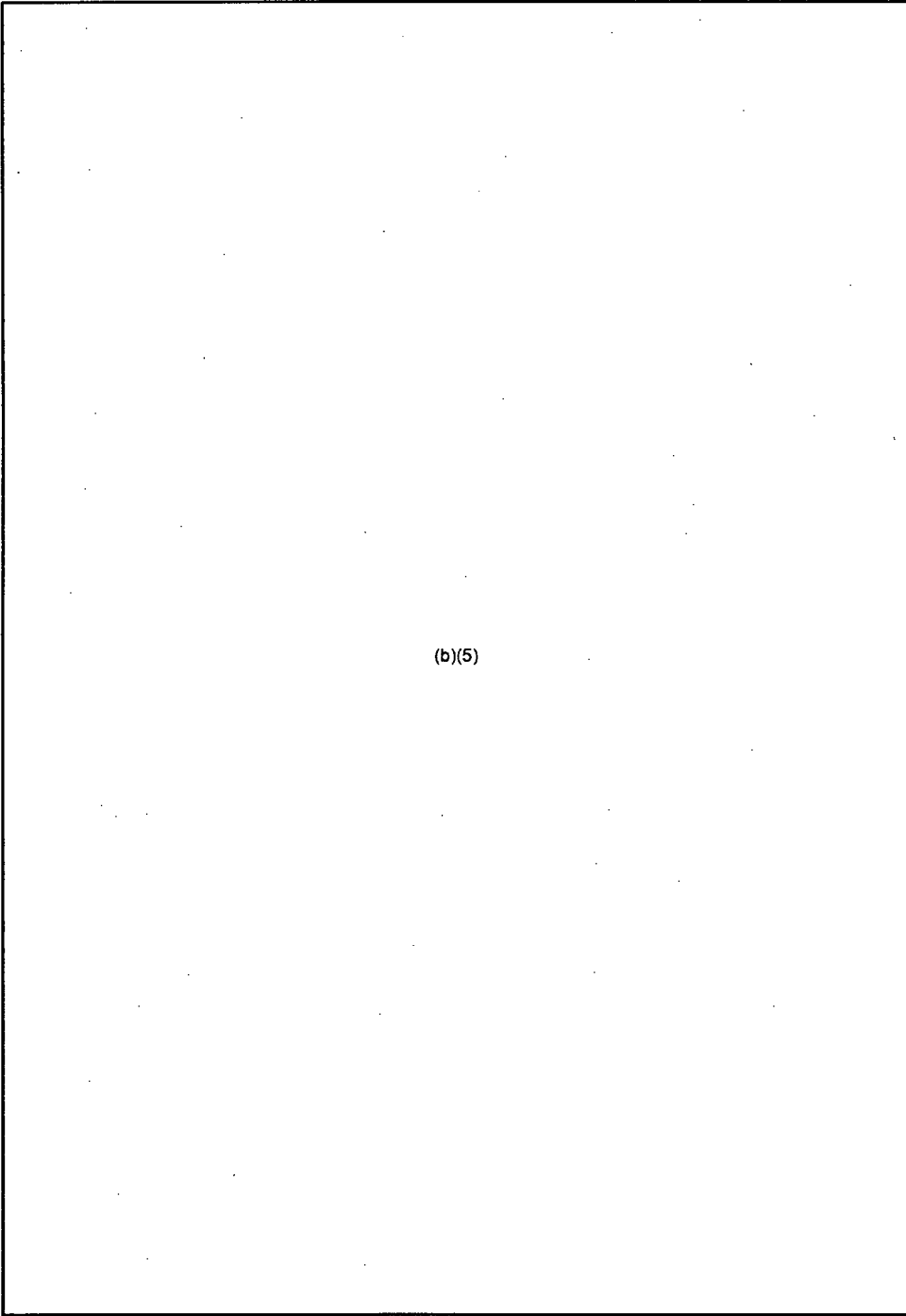
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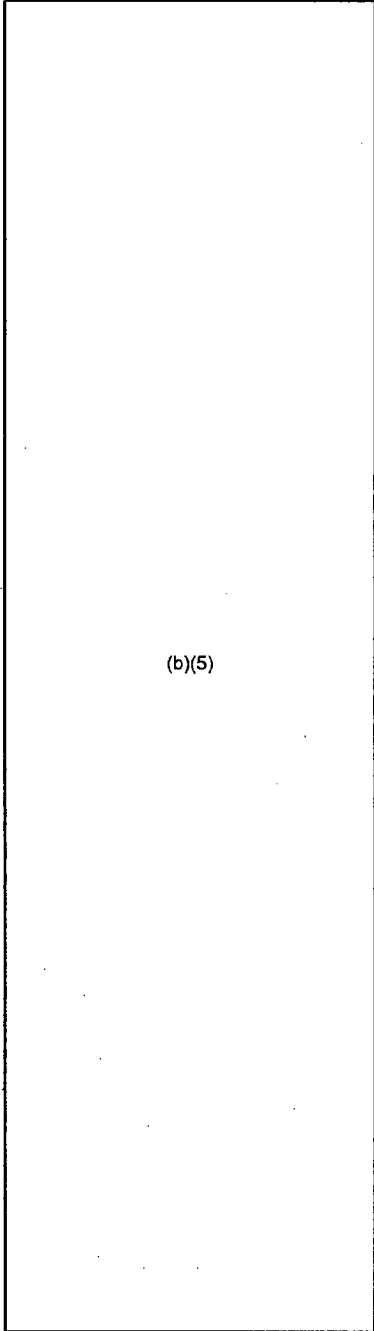
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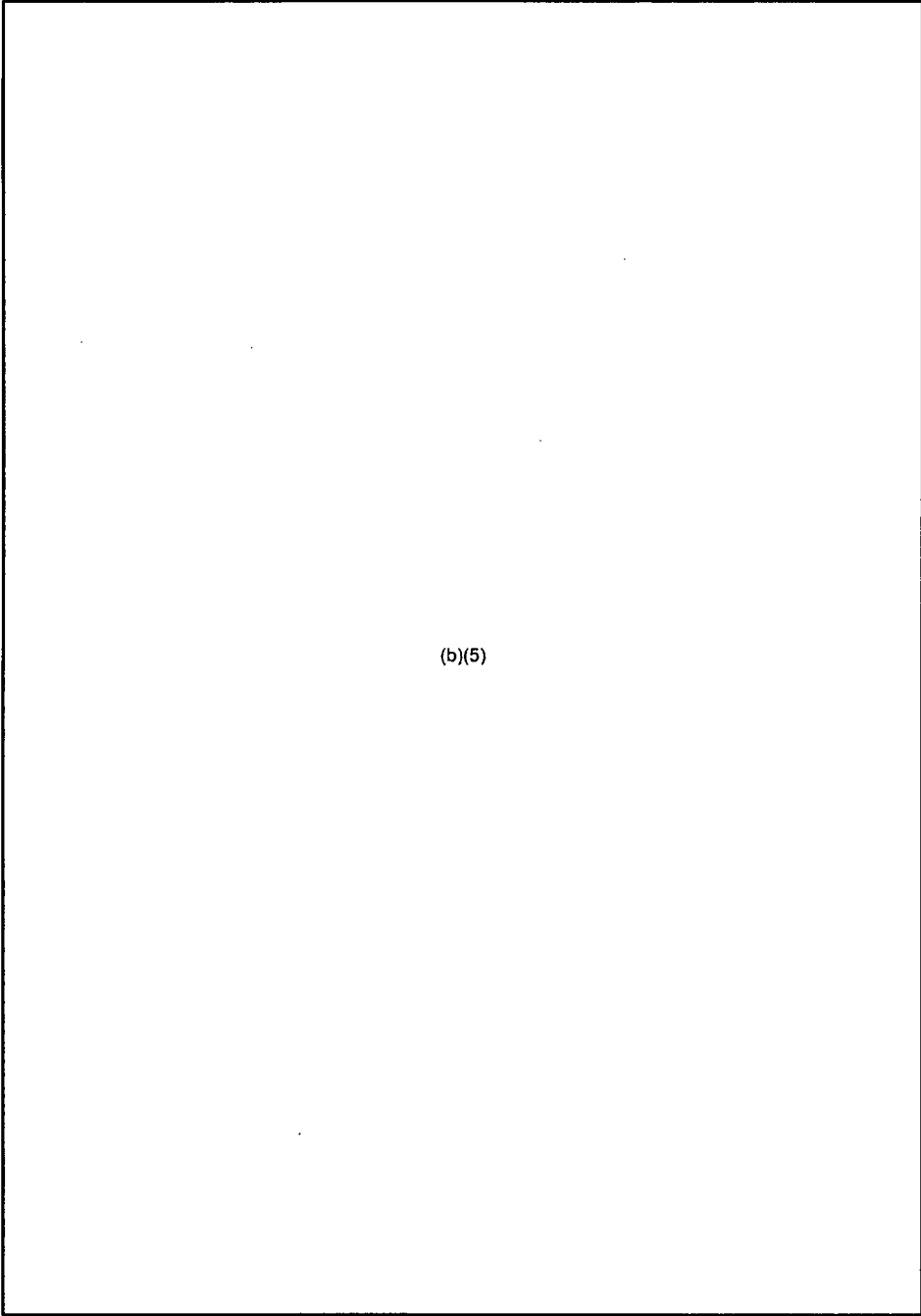
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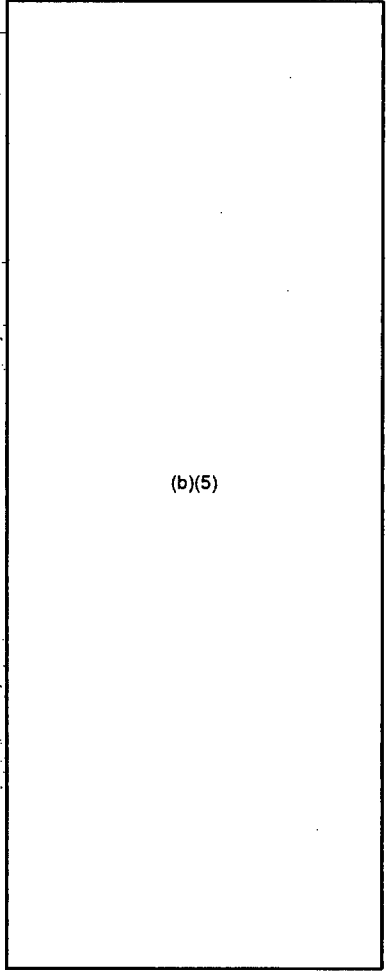
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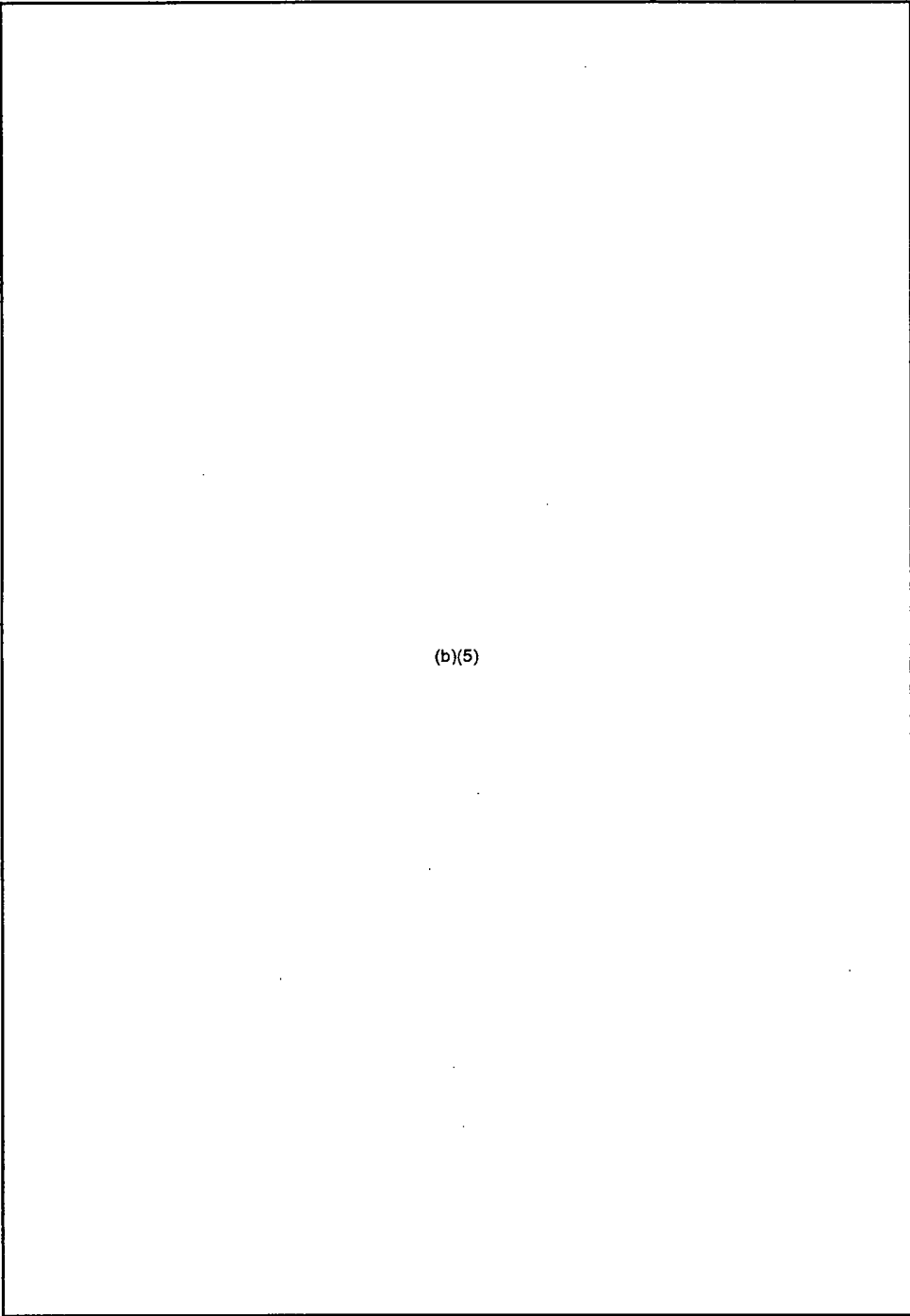
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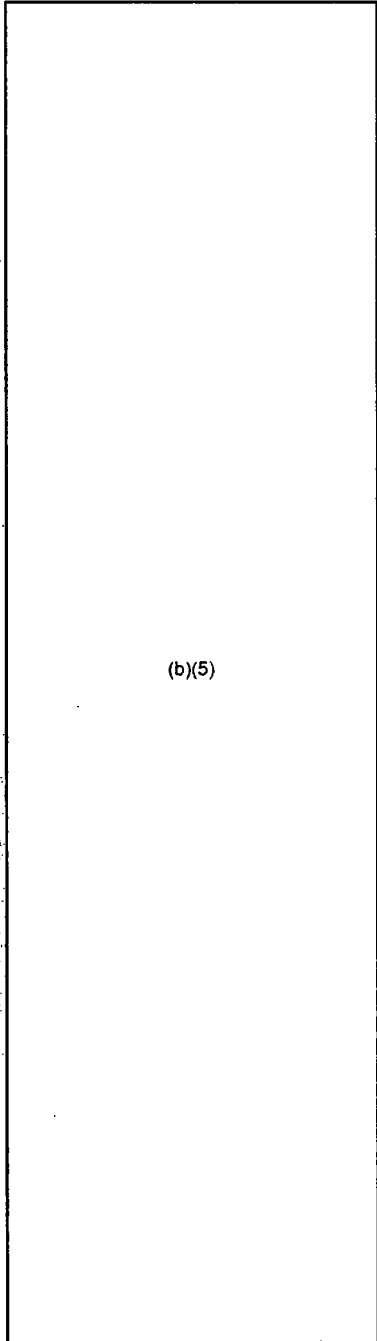
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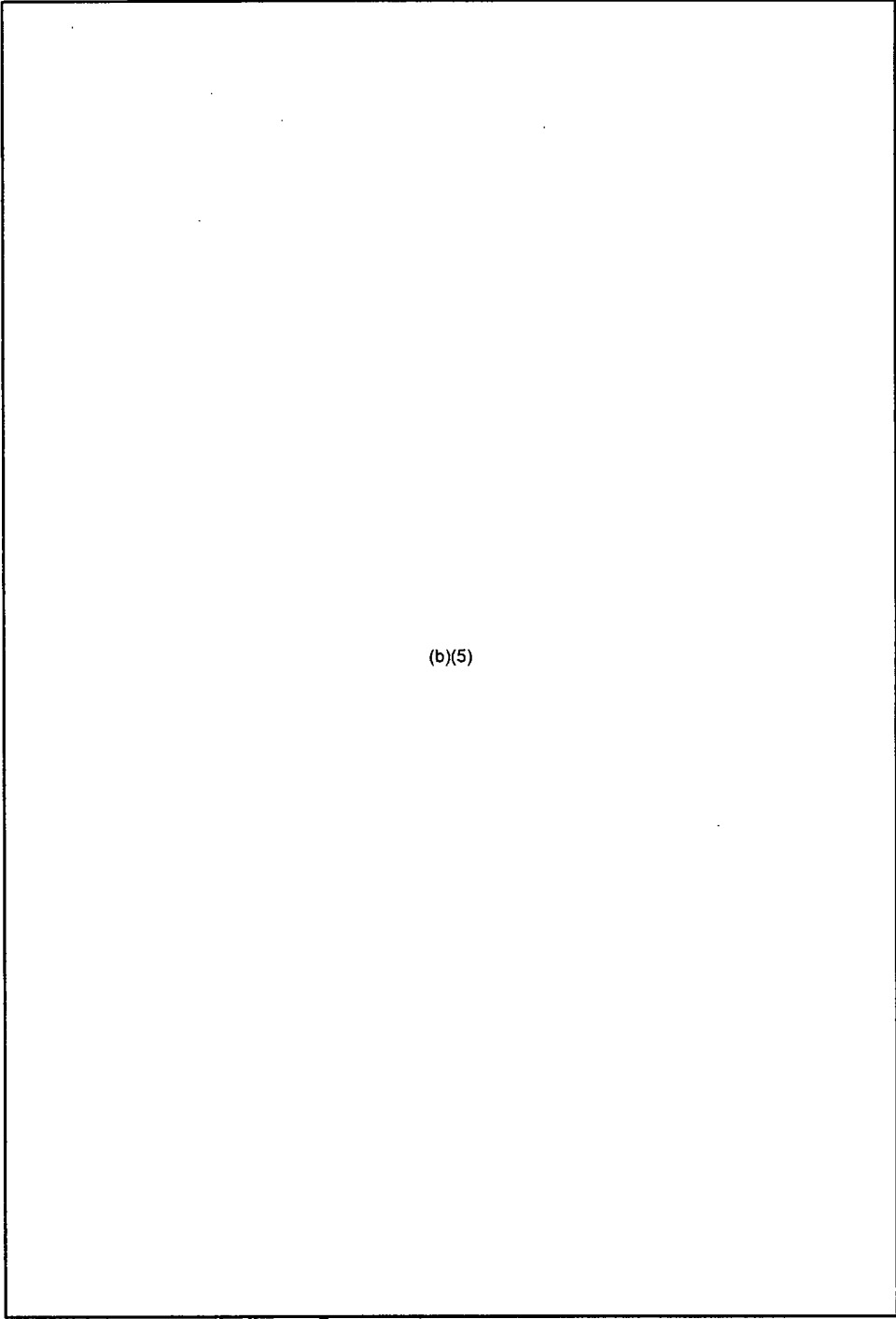


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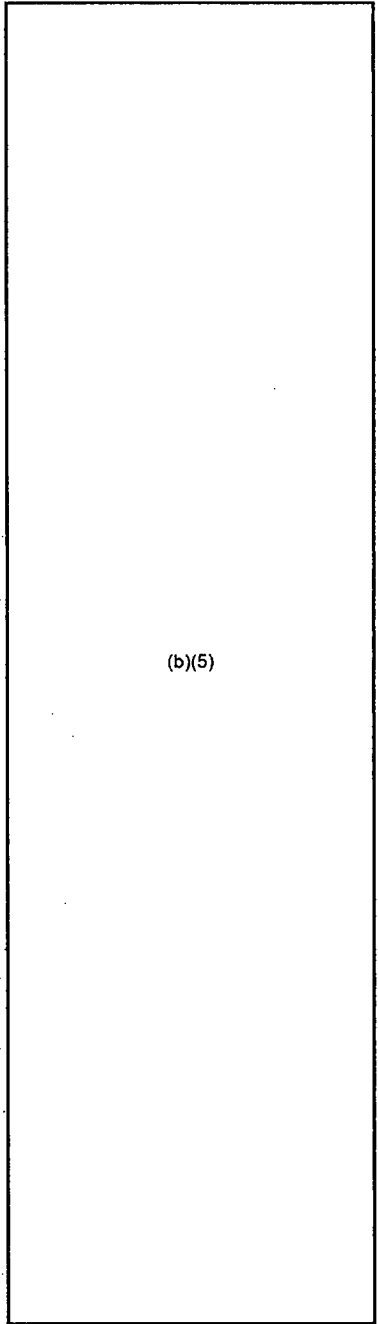
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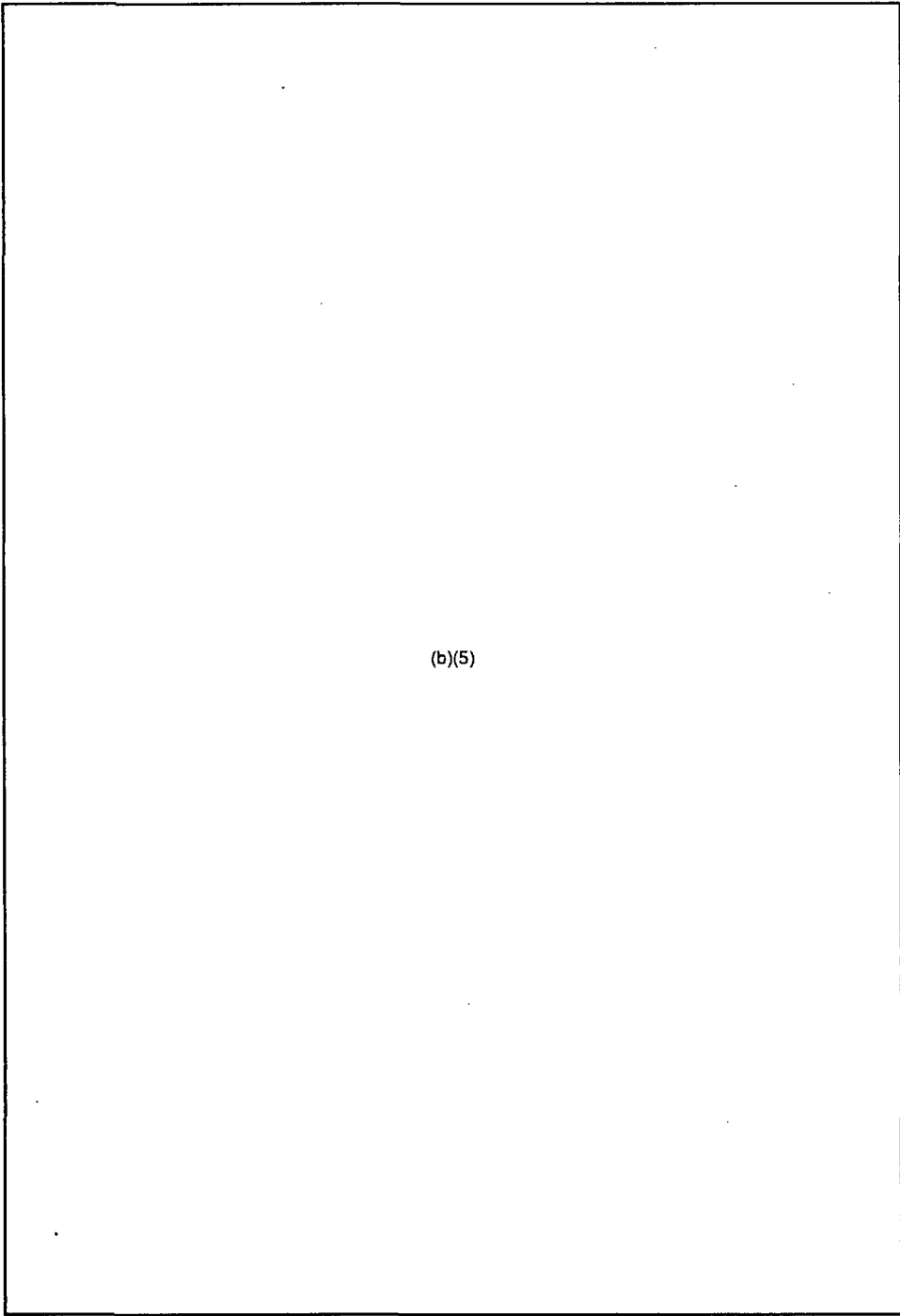


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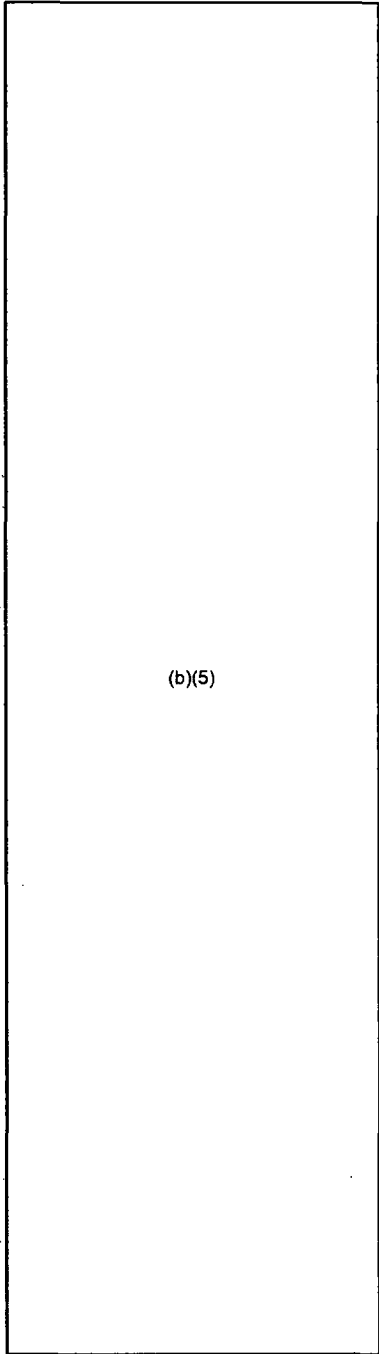
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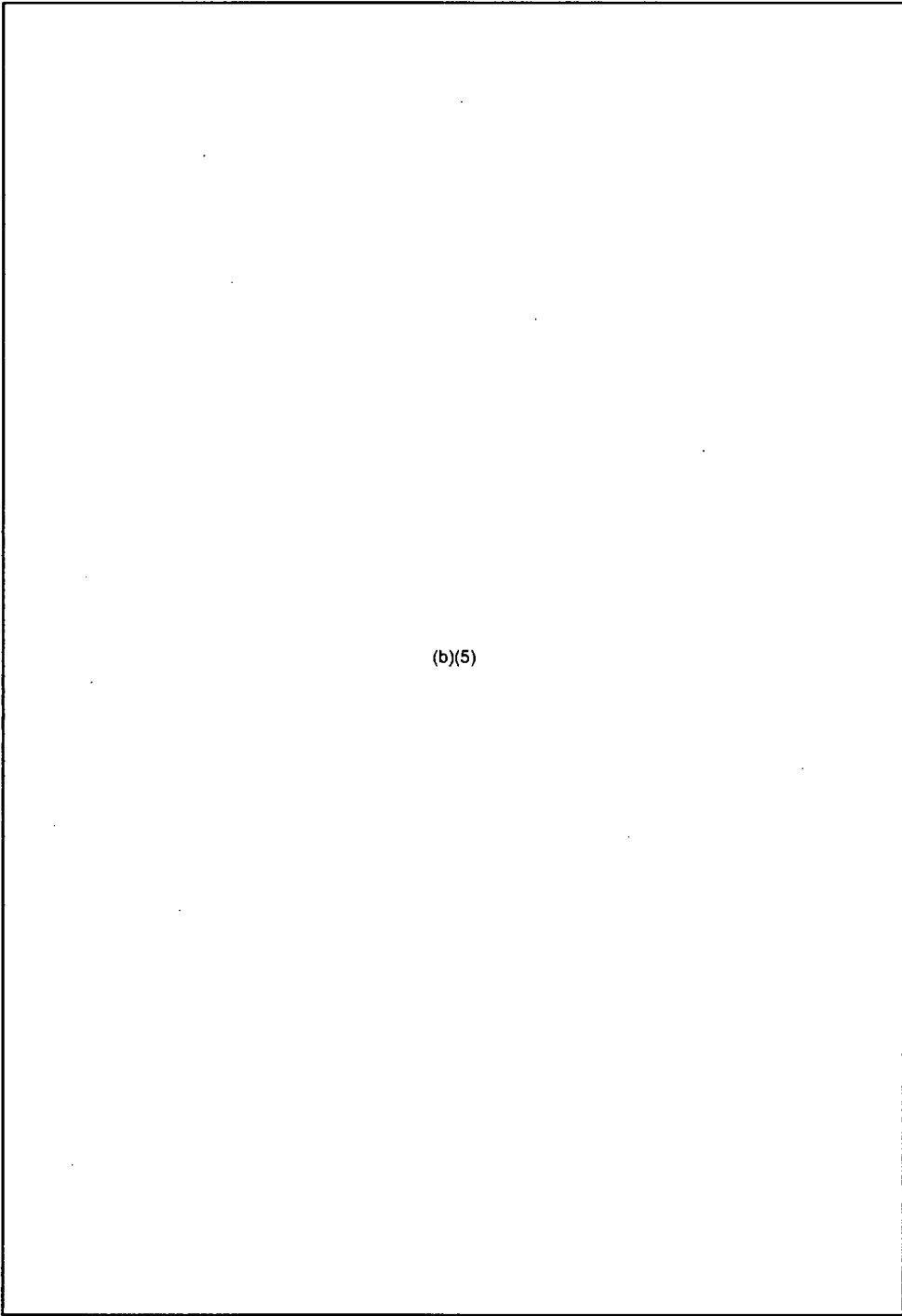


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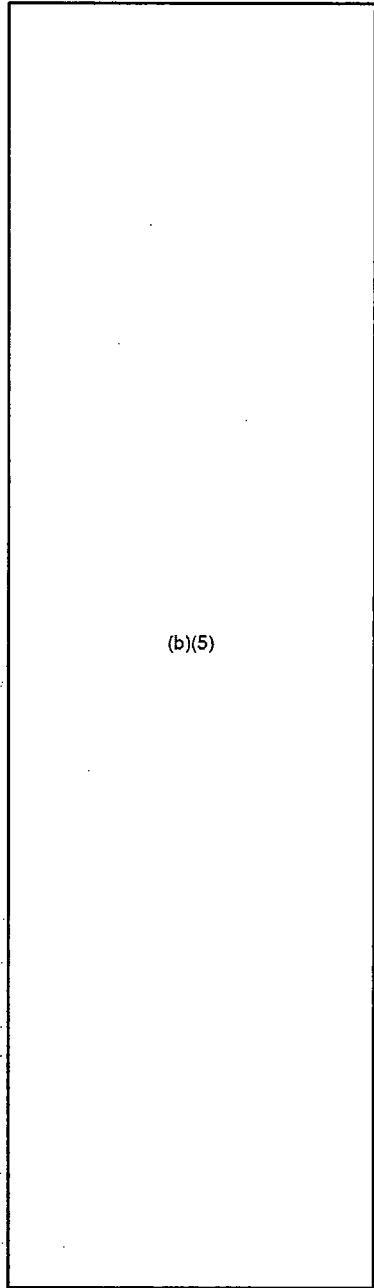
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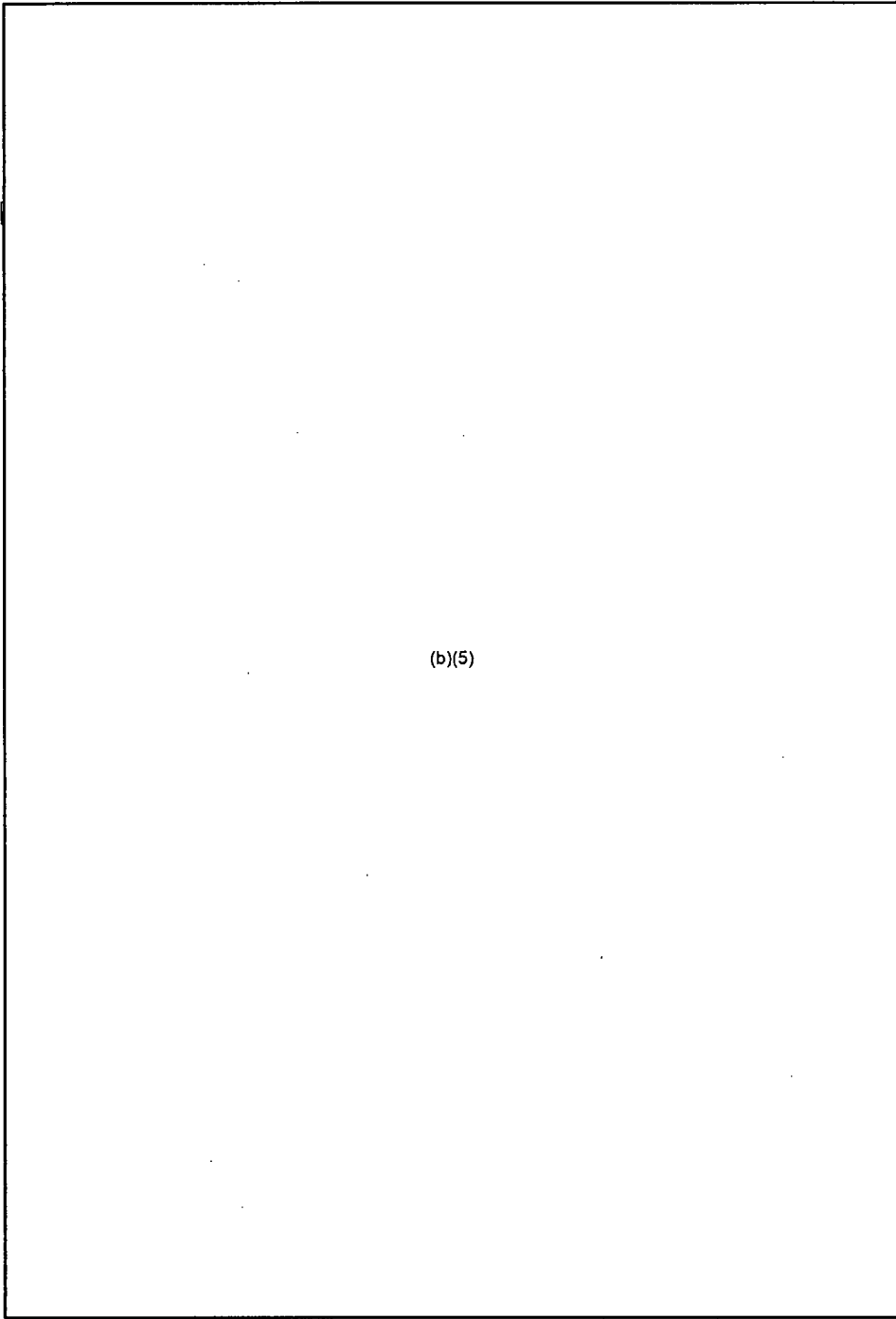
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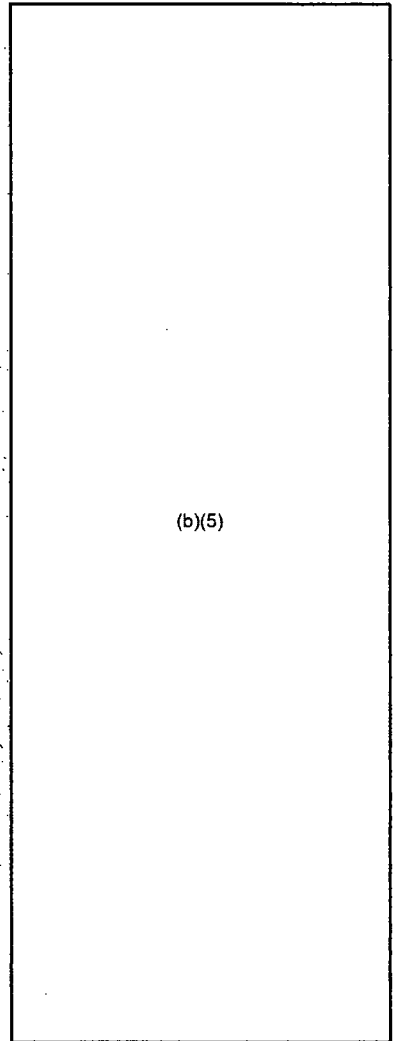
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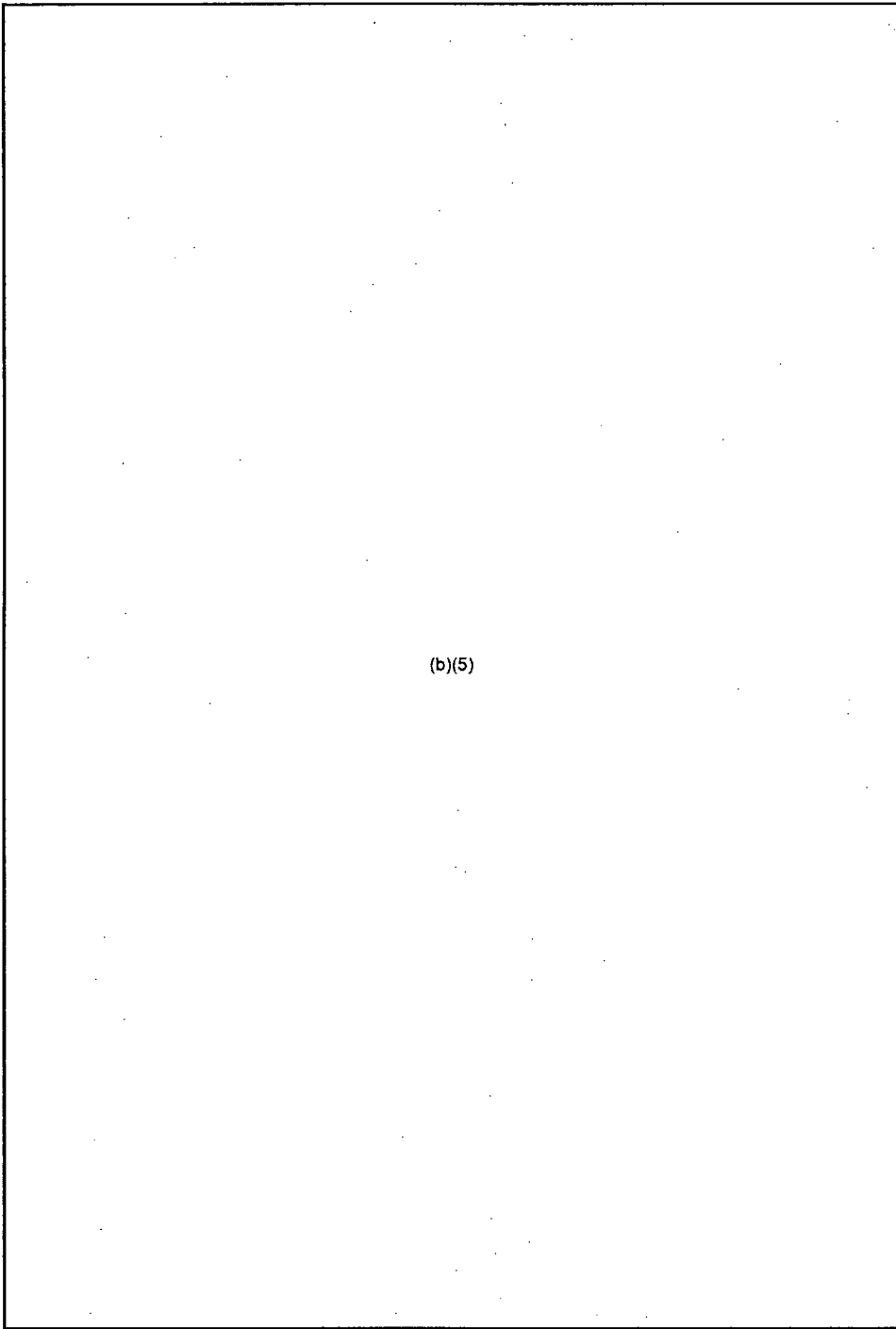
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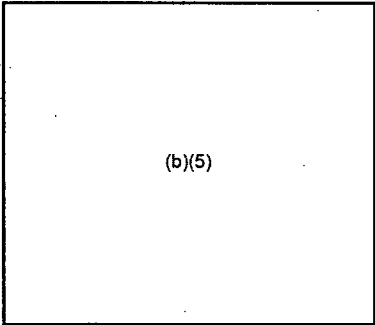
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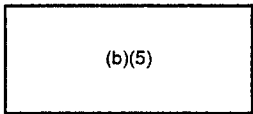
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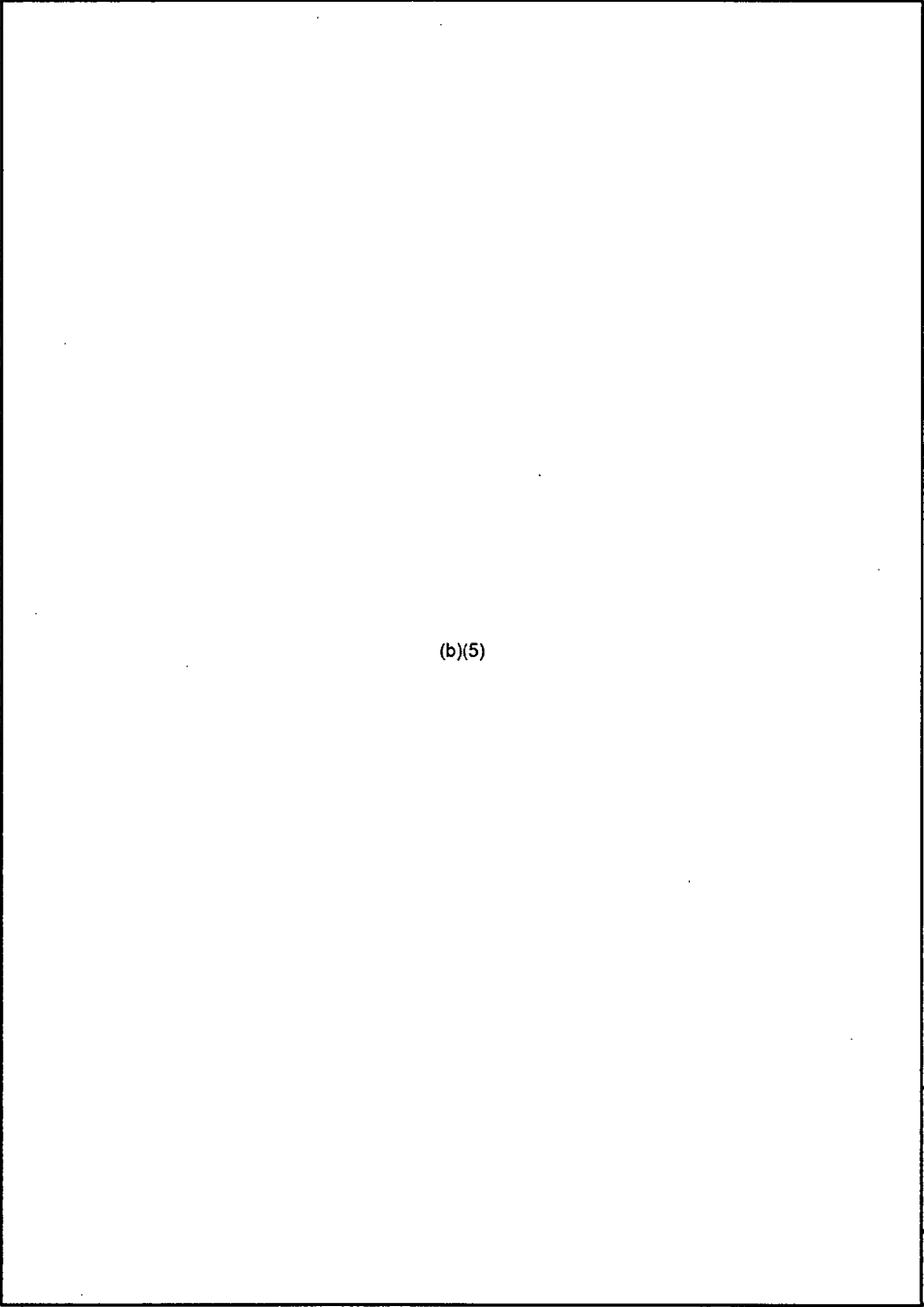
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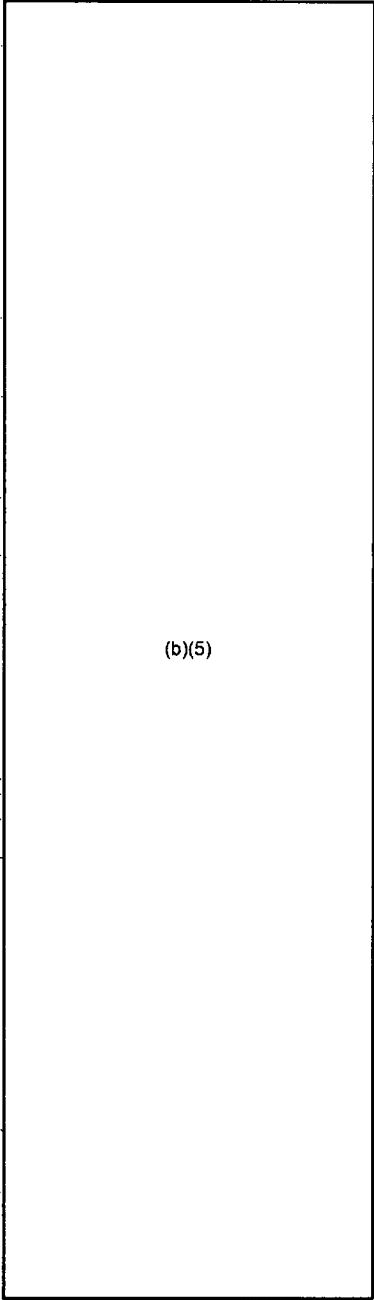
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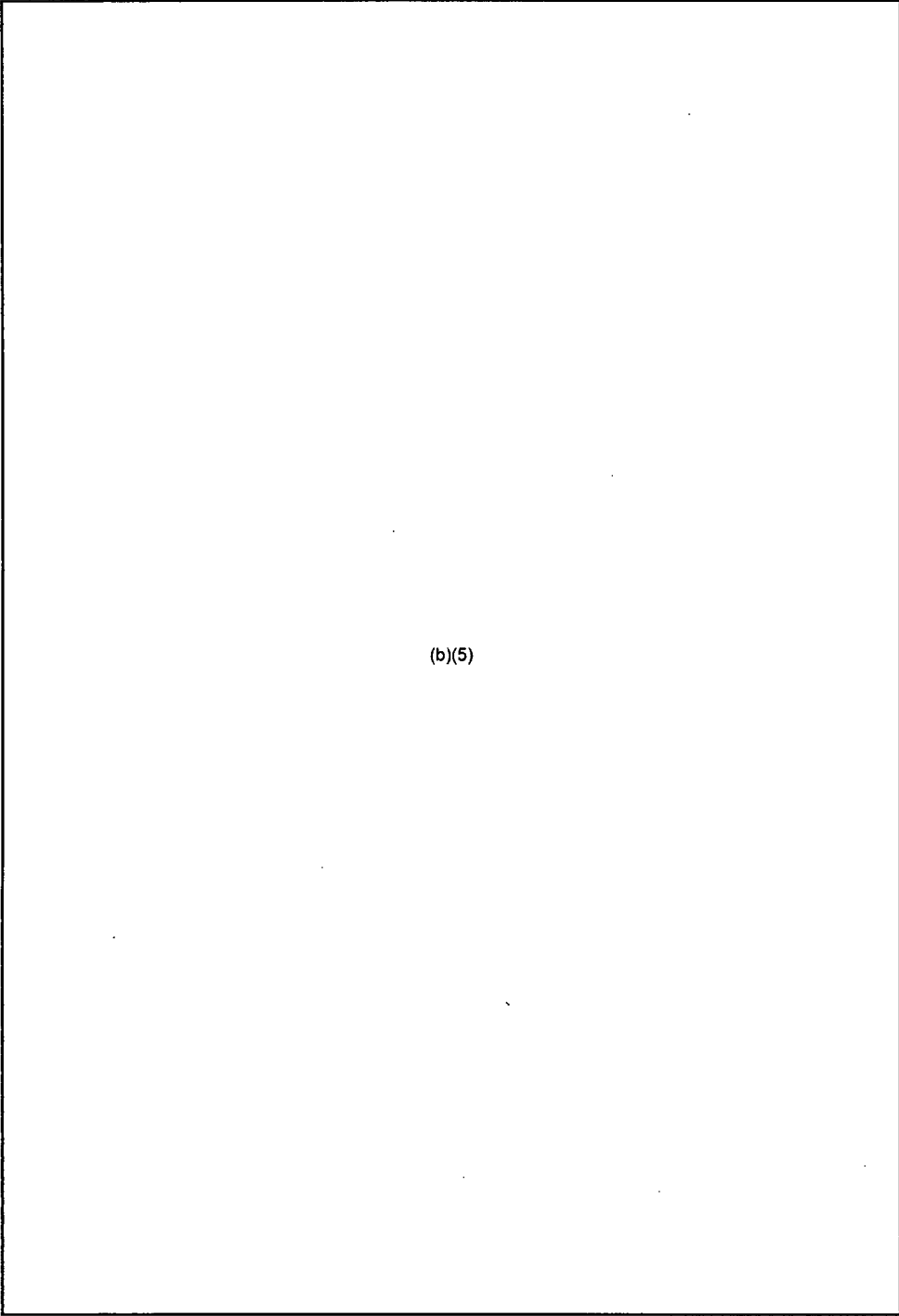
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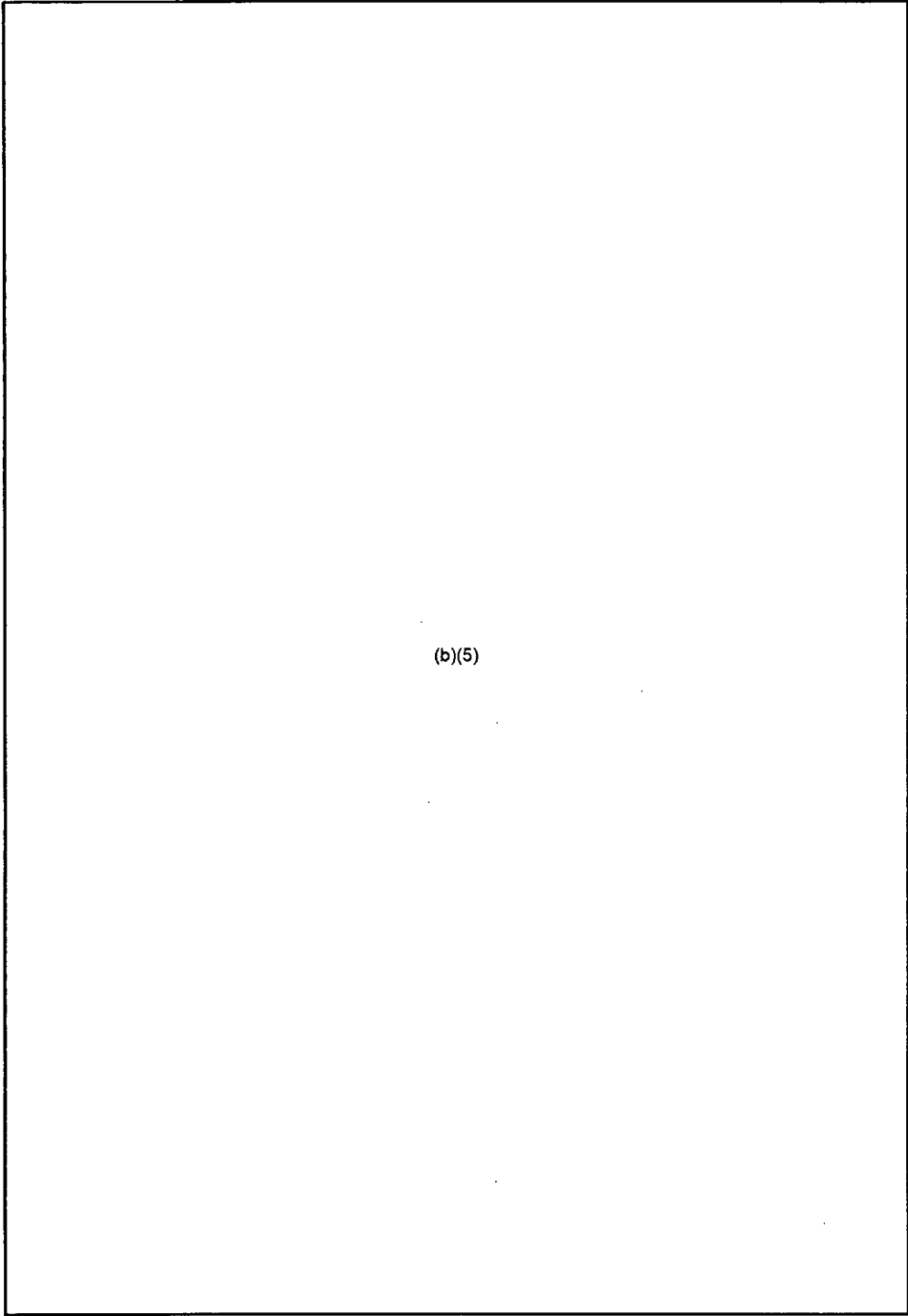


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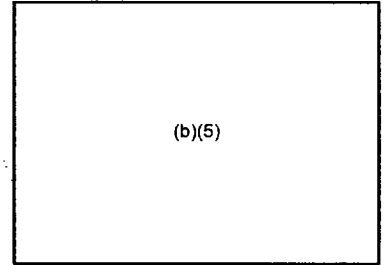
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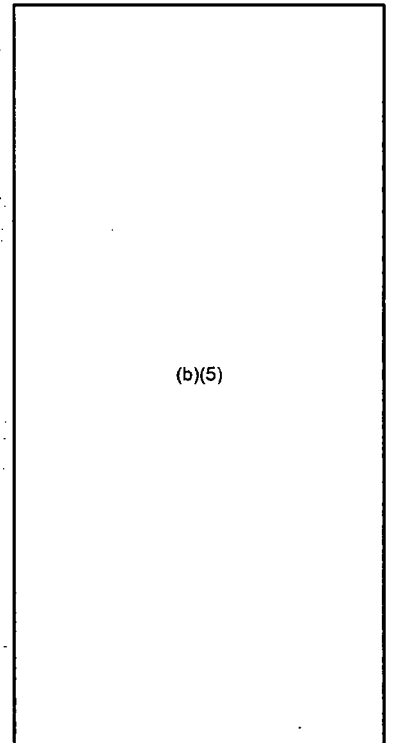
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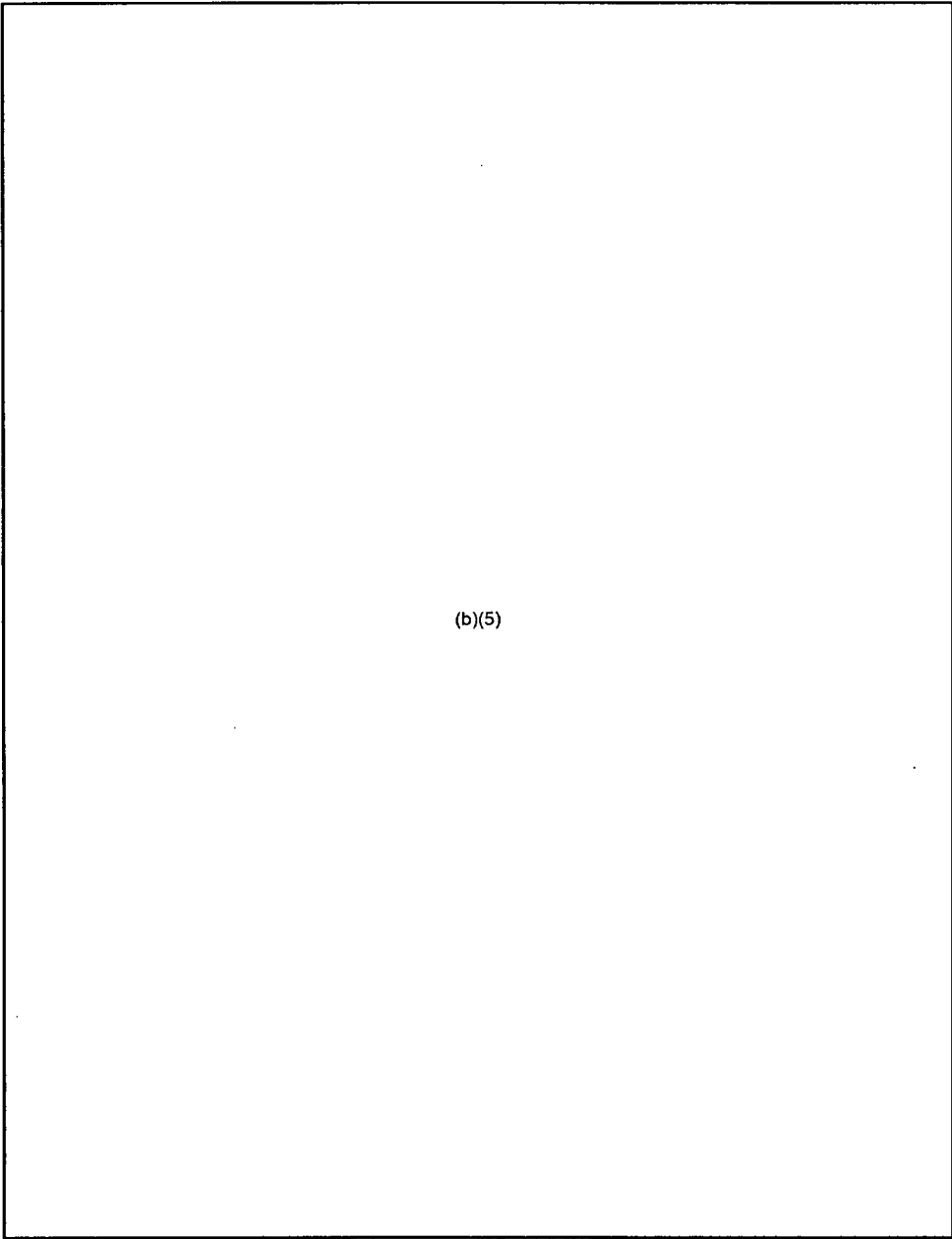
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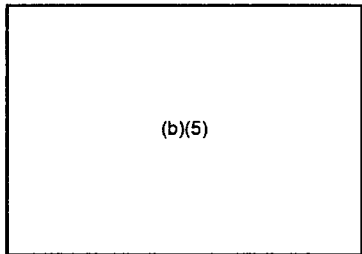
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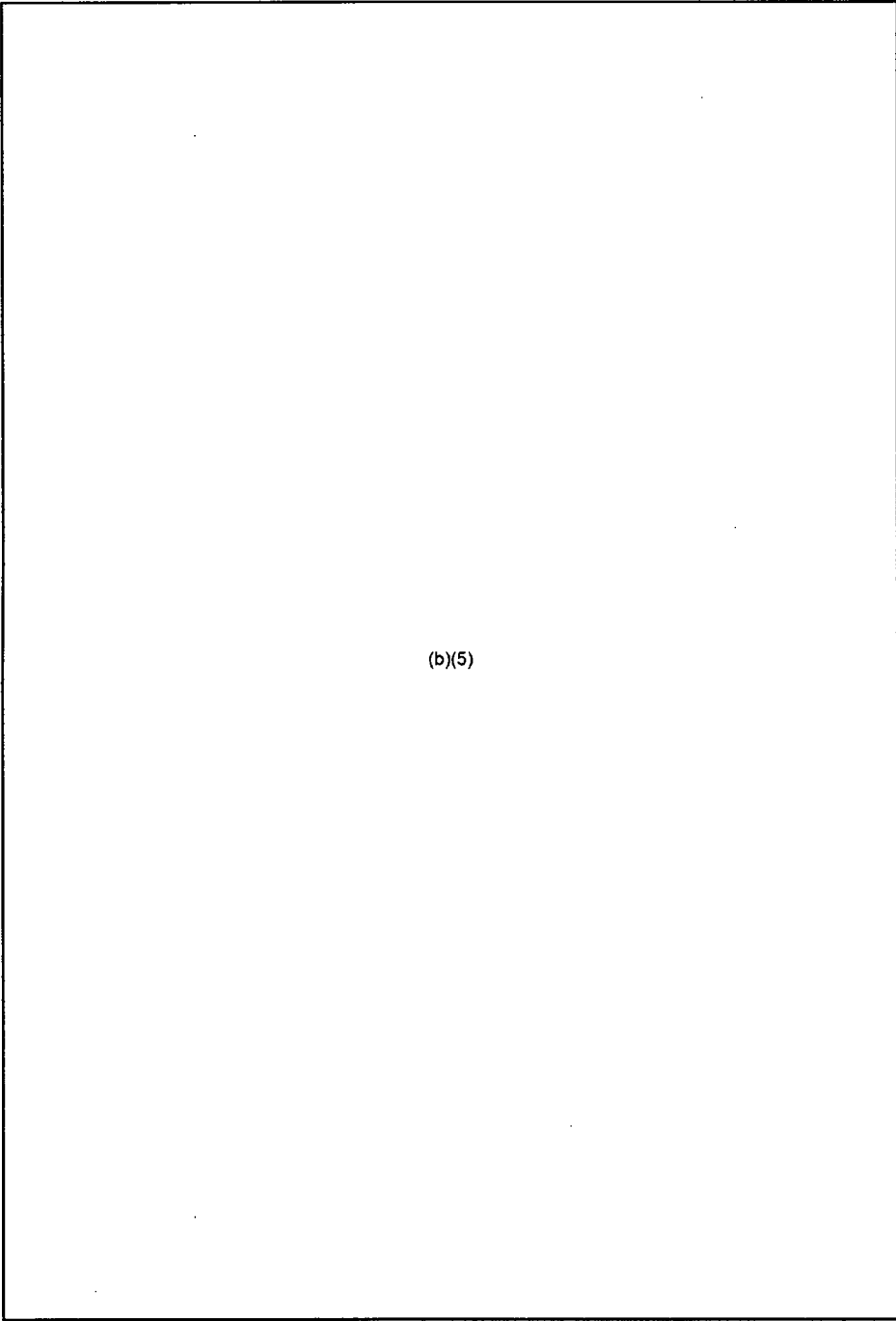
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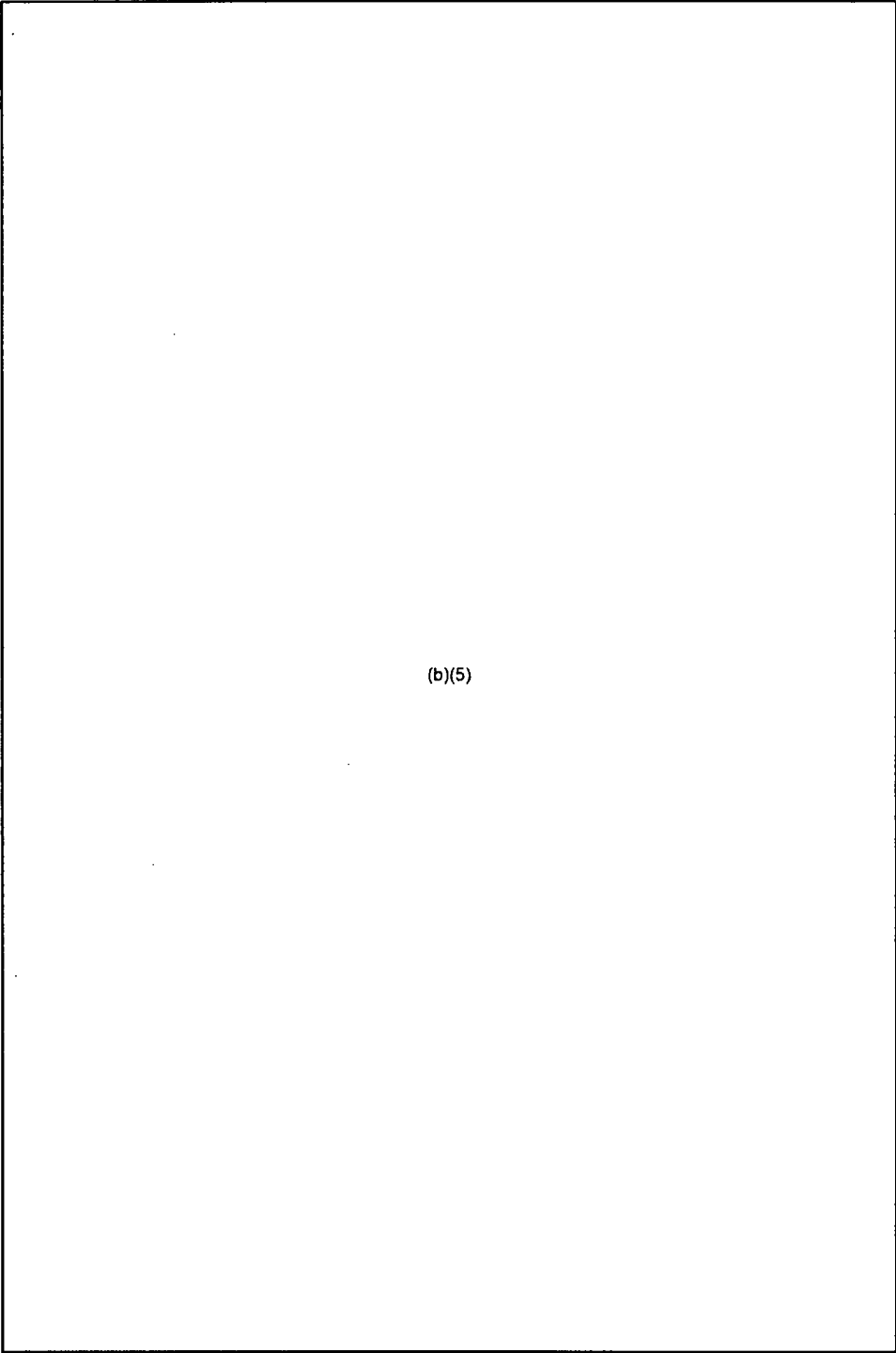


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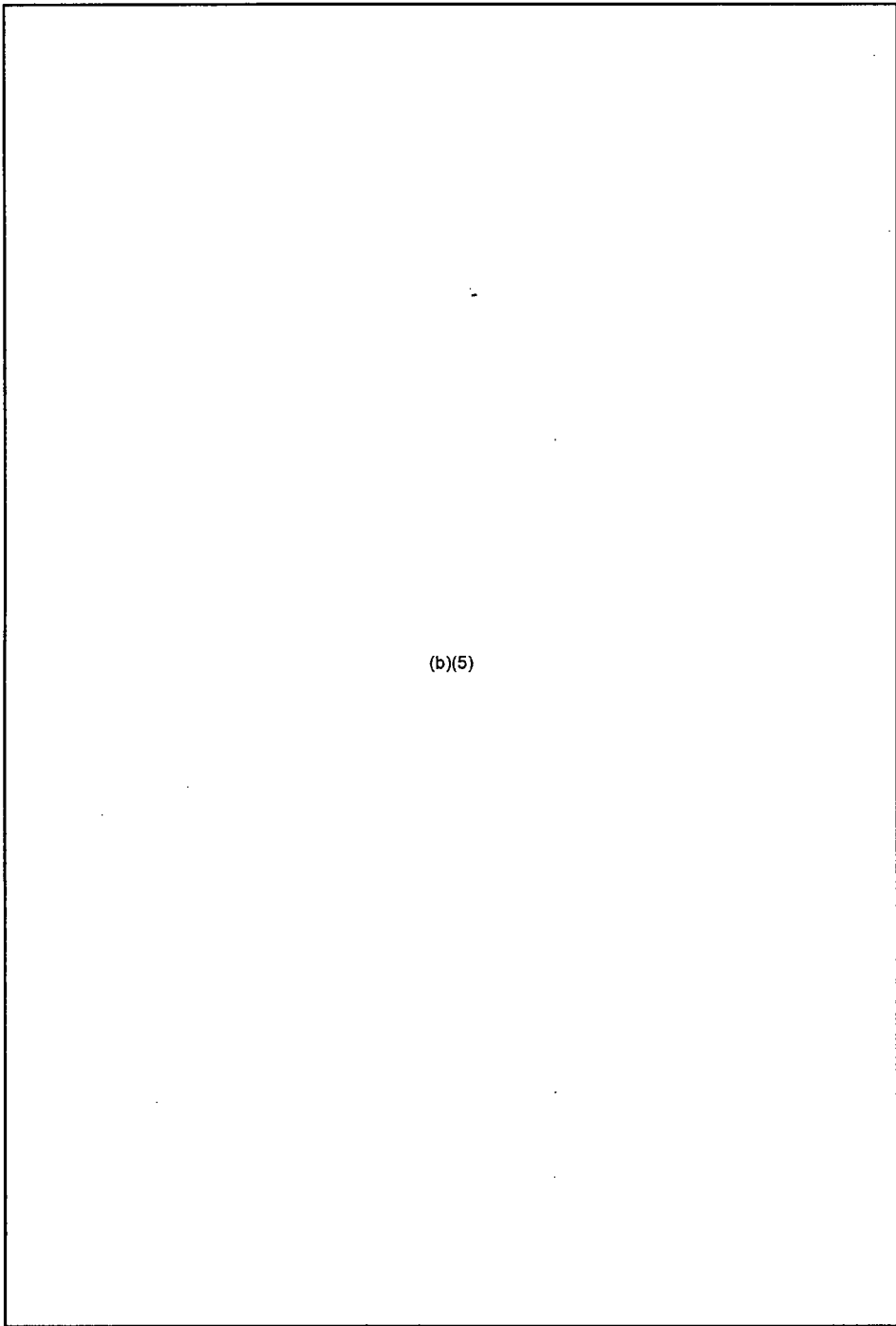
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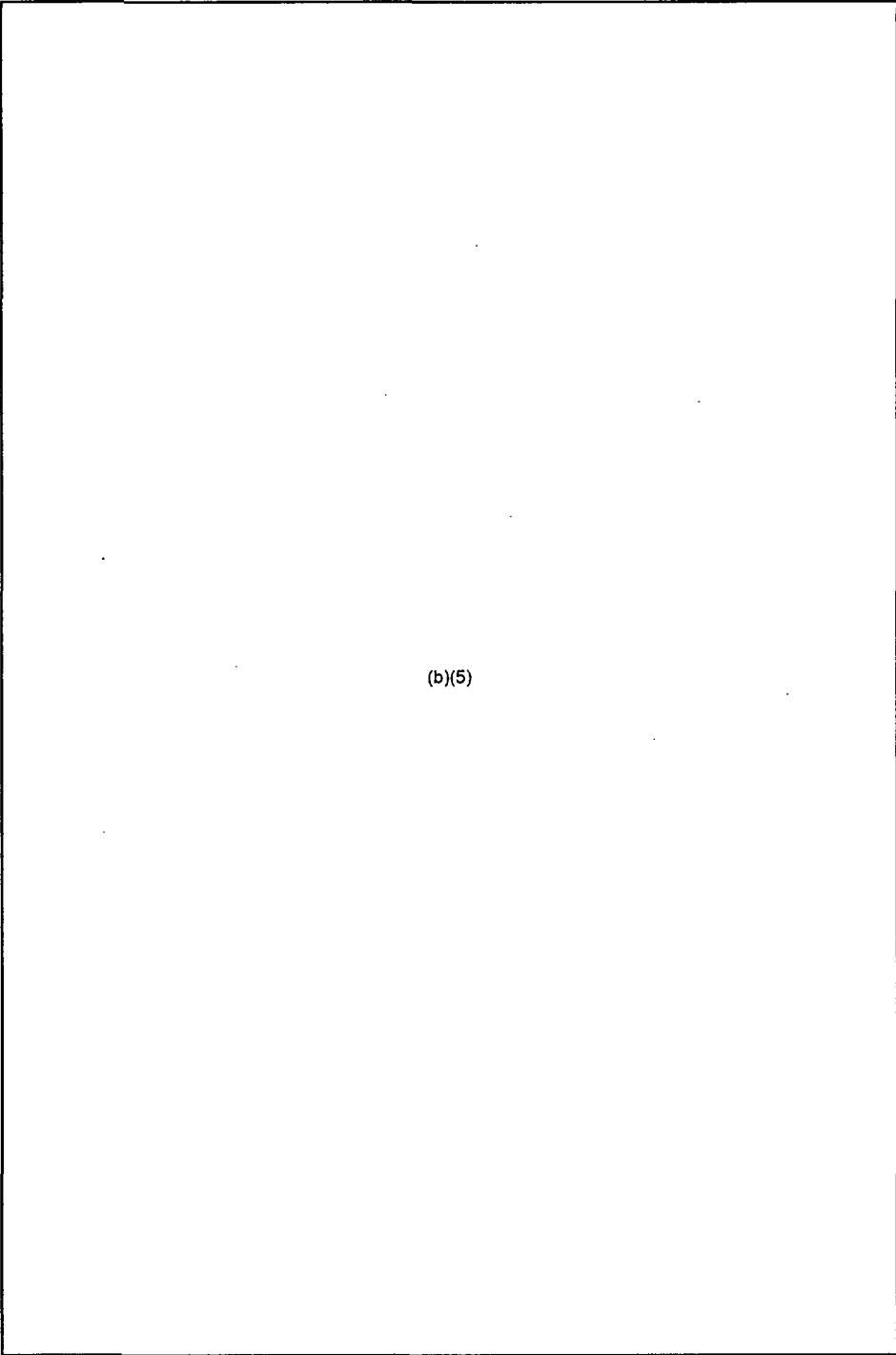
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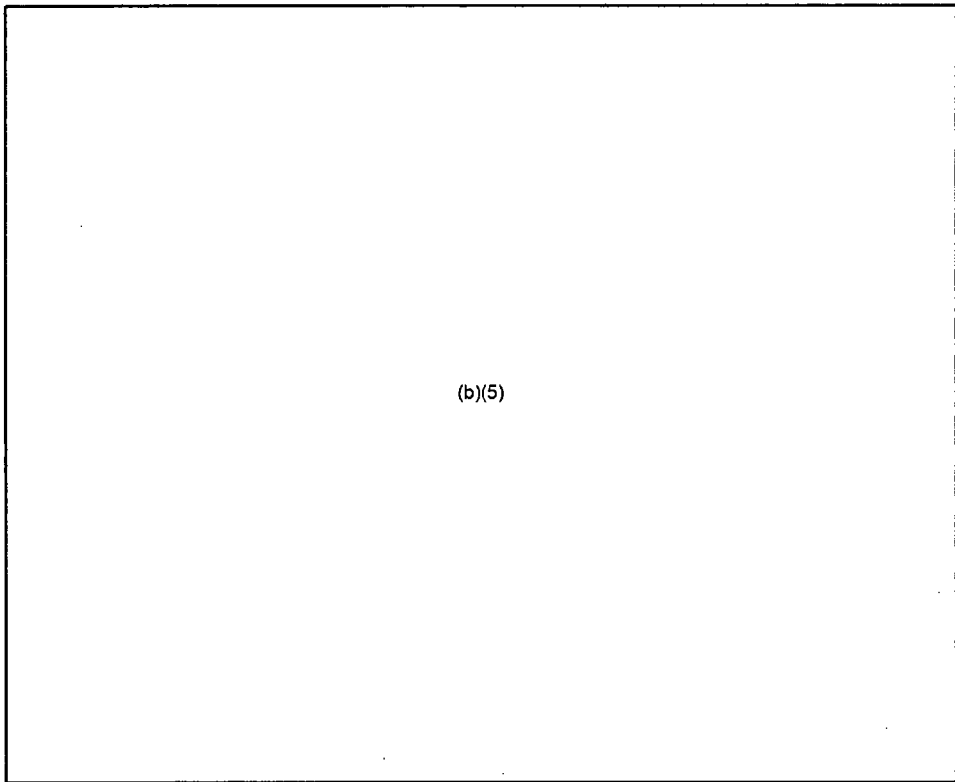
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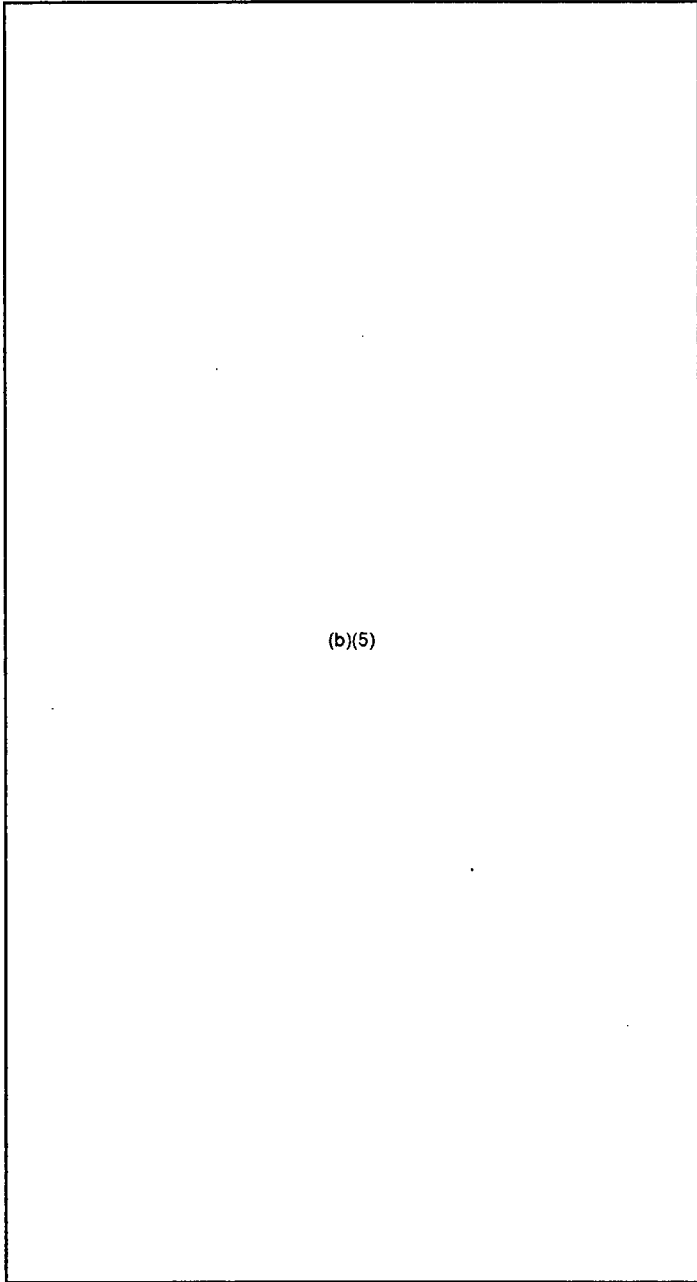


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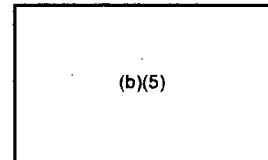
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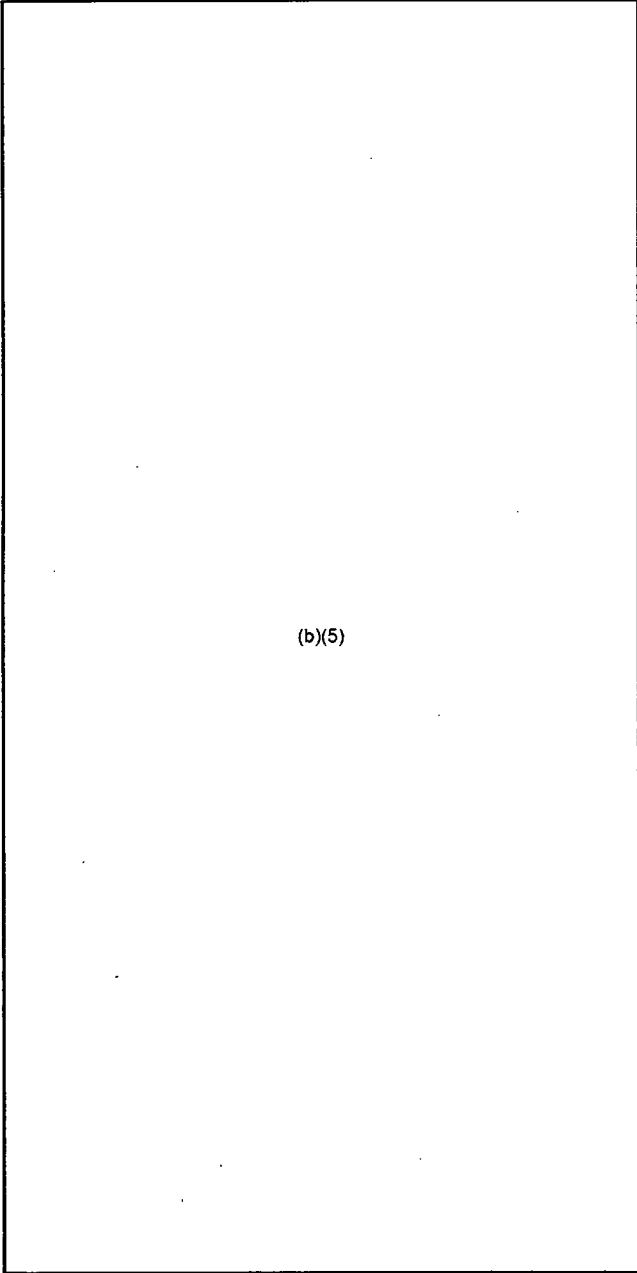


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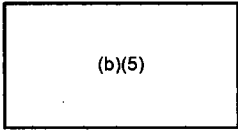
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From: Coffin, Stephanie
To: Flanders, Scott
Cc: Mayfield, Michael
Subject: RE: FW: Center For Nuclear Waste Regulatory Analysis (CENTER) Presentation to NRO Regarding Providing Technical Assistance in the Advanced Reactor program.
Date: Wednesday, March 23, 2011 11:20:27 AM

It doesn't need to be someone senior meaning SES. I meant senior staff or branch chief would be fine. Sorry if misunderstanding.

From: Flanders, Scott
Sent: Wednesday, March 23, 2011 11:19 AM
To: Coffin, Stephanie
Cc: Mayfield, Michael
Subject: RE: FW: Center For Nuclear Waste Regulatory Analysis (CENTER) Presentation to NRO Regarding Providing Technical Assistance in the Advanced Reactor program.

Stephaine, this conflicts with budget meeting we have with Mike. It is unlikely that we will support this meeting, but I will get back to you with a final answer later today.

Scott

-----Original Appointment-----

From: Karas, Rebecca **On Behalf Of** Coffin, Stephanie
Sent: Wednesday, March 23, 2011 10:44 AM
To: Flanders, Scott; Cook, Christopher
Subject: FW: FW: Center For Nuclear Waste Regulatory Analysis (CENTER) Presentation to NRO Regarding Providing Technical Assistance in the Advanced Reactor program.
When: Thursday, March 24, 2011 1:30 PM-2:30 PM (GMT-05:00) Eastern Time (US & Canada).
Where: TWFN-T7A01

Nilesh and I talked. Stephanie called and said someone senior from DSER really needs to go to this. I can discuss with you. Cliff is WAH that day, and Nilesh is out.

-----Original Appointment-----

From: Coffin, Stephanie
Sent: Wednesday, March 23, 2011 10:26 AM
To: Coffin, Stephanie; Karas, Rebecca; NRO_Division_Directors; NRO_Deputy_Division_Directors; Kokajko, Lawrence; Mohseni, Aby; Davis, Jack; Norato, Michael; Ray, Neil; DeMarco, Deborah; Zaki, Tarek; Scott, Michael; Elkins, Scott; Gibson, Kathy; Jackson, Rolonda; Coffin, Stephanie
Cc: Akstulewicz, Frank; Matthews, David; Schum, Constance; Donoghue, Joseph
Subject: FW: Center For Nuclear Waste Regulatory Analysis (CENTER) Presentation to NRO Regarding Providing Technical Assistance in the Advanced Reactor program.
When: Thursday, March 24, 2011 1:30 PM-2:30 PM (GMT-05:00) Eastern Time (US & Canada).
Where: TWFN-T7A01

POP

Purpose: Discuss NRO's technical assistance requirements in the Advanced Reactor program area. Center manager's will provide information on capabilities/skills/disciplines

available to NRC to support the NRO staff.

Outcome: Mutual understanding of the NRO's needs and possible Center assistance in supporting NRO. Discuss path forward (e.g., visit to SwRI/Center by NRO technical staff and manager's

possible laboratory tours).

Process: Brief discussion of NRO's needs and Center's capabilities/disciplines available. NRO question and answer session.

From: [Chokshi, Niles](#)
To: [Flanders, Scott](#)
Cc: [Karas, Rebecca](#)
Subject: FW: Center For Nuclear Waste Regulatory Analysis (CENTER) Presentation to NRO Regarding Providing Technical Assistance In the Advanced Reactor program.
Date: Wednesday, March 23, 2011 10:47:25 AM
Importance: High

Scott,

We need to decide who is going to attend. Stephanie called Becky and has requested that it is very essential that we have a presence there.

Niles

From: Coffin, Stephanie
Sent: Wednesday, March 23, 2011 10:24 AM
To: Chokshi, Niles; Shuaibi, Mohammed; Tappert, John; Norato, Michael; Ray, Neil; Zaki, Tarek; Elkins, Scott; Gibson, Kathy; Donoghue, Joseph
Cc: DeMarco, Deborah
Subject: RE: Center For Nuclear Waste Regulatory Analysis (CENTER) Presentation to NRO Regarding Providing Technical Assistance in the Advanced Reactor program.
Importance: High

The meeting is ON! I apologize for the confusion.

Stephanie

-----Original Appointment-----

From: RobinsonII, Richard **On Behalf Of** Coffin, Stephanie
Sent: Wednesday, March 23, 2011 9:18 AM
To: NRO_Division_Directors; NRO_Deputy_Division_Directors; Kokajko, Lawrence; Mohseni, Aby; Davis, Jack; Norato, Michael; Ray, Neil; DeMarco, Deborah; Zaki, Tarek; Scott, Michael; Elkins, Scott; Gibson, Kathy; Jackson, Rolonda; Coffin, Stephanie
Cc: Akstulewicz, Frank; Matthews, David; Schum, Constance; Donoghue, Joseph
Subject: Center For Nuclear Waste Regulatory Analysis (CENTER) Presentation to NRO Regarding Providing Technical Assistance in the Advanced Reactor program.
When: Thursday, March 24, 2011 1:30 PM-2:30 PM (GMT-05:00) Eastern Time (US & Canada).
Where: TWFN-T7A01

Due to issues with the original scheduler, this meeting is being resent. All information is the same from the previous.

When: Thursday, March 24, 2011 1:30 PM-2:30 PM (GMT-05:00) Eastern Time (US & Canada).

Where: NRO - TWFN - 07A-01

Note: The GMT offset above does not reflect daylight saving time adjustments.

~~*~*~*~*~*~*~*~*

POP

Purpose: Discuss NRO's technical assistance requirements in the Advanced Reactor program area. Center manager's will provide information on capabilities/skills/disciplines

available to NRC to support the NRO staff.

Outcome: Mutual understanding of the NRO's needs and possible Center assistance in supporting NRO. Discuss path forward (e.g., visit to SwRI/Center by NRO technical staff and manager's

possible laboratory tours).

Process: Brief discussion of NRO's needs and Center's capabilities/disciplines available. NRO question and answer session.

From: Flanders, Scott
To: Matthews, David
Subject: Re: Bob and I are on for a 1 pm retreat mtg in the forum mtg room. EOM.
Date: Wednesday, March 23, 2011 12:11:10 PM

Ok, I may be a few mins late.
Scott

Sent from my NRC Blackberry
Scott Flanders

(b)(6)

From: Matthews, David
To: Flanders, Scott
Sent: Wed Mar 23 12:01:44 2011
Subject: Bob and I are on for a 1 pm retreat mtg in the forum mtg room. EOM.

From: [Akstulewicz, Frank](#)
To: [Flanders, Scott](#)
Subject: monthly report
Date: Wednesday, March 23, 2011 4:14:57 PM

Scott

We have the final version of the March monthly report ready to go to Michael. Needs to be there tomorrow. Are we waiting for input from DSER or can we send on.

From: Chokshi, Niles
To: Jones, Henry; Seber, Dogan; Wang, Weijun
Cc: Flanders, Scott; Raione, Richard; Cook, Christopher; Karas, Rebecca
Subject: Kudos
Date: Wednesday, March 23, 2011 4:57:57 PM

Great presentations! I have already received requests to have your presentations available to other staff members. Let's think about how we do that, given we have some plant-specific information.

From: Lauron, Carolyn
To: Snyder, Amy; Akstulewicz, Frank
Cc: Flanders, Scott; Hatchett, Gregory; Dent, Kimberly; Dozier, Tamsen
Subject: Coordination/Confirmation Requested: ACTION: G20110201 - Waste Management and Environmental Reviews Submitted on North Anna 3 Project
Date: Wednesday, March 23, 2011 5:24:34 PM
Attachments: [G20110201.pdf](#)
Importance: High

Hi –

Attached is the GT request that is **due 4/8** for MJ to review/sign-out.

I think DSER and DNRL need to coordinate a response since the letter also references our review of the design in the future (2013) based on an article attached.

Perhaps you have already responded to a similar letter (maybe from the same concerned person) and we could look at ensuring consistency in our responses.

Please let me know.

Thanks,
Carolyn
2736

From: RidsNroMailCenter Resource
Sent: Wednesday, March 23, 2011 5:16 PM
To: Dent, Kimberly
Cc: Lauron, Carolyn; Sweeney, Beverly; Correa, Yessie; Berry, Lee
Subject: FW: ACTION: G20110201
Importance: High

RE: G20110201/LTR-11-0135/EDATS: SECY-2011-0159 – Water Management and Environmental Reviews Submitted on North Anna 3 Project

Attached is the incoming action for the above subject green ticket. The ADAMS version (ML#) will be sent after DPC processes.

NOTE: The 'Routing' list on the first page of the action (right side) should read Sanfilippo instead of Wittick. Please add Nathan Sanfilippo to the distribution list on the letter.

*EDATS Subtask 3432-1
Electronic Distribution Only*

*Thank you,
NRO Correspondence Team
Anissa*

EDO Principal Correspondence Control

FROM: DUE: 04/14/11

EDO CONTROL: G20110201
DOC DT: 03/15/11
FINAL REPLY:

Harry Ruth
Friends of Lake Anna

TO:

Chairman Jaczko

FOR SIGNATURE OF :

** PRI **

CRC NO: 11-0135

Johnson

DESC:

Water Management and Environmental Reviews
Submitted on North Anna 3 Project
(EDATS: SECY-2011-0159)

ROUTING:

Borchardt
Weber
Virgilio
Ash
Muessle
OGC/GC
Leeds, NRR
McCree, RII
Wittick, OEDO

DATE: 03/23/11

ASSIGNED TO:

CONTACT:

NRO

Johnson

SPECIAL INSTRUCTIONS OR REMARKS:

EDATS Number: SECY-2011-0159

Source: SECY

General Information

Assigned To: NRO

OEDO Due Date: 4/14/2011 11:00 PM

Other Assignees:

SECY Due Date: 4/14/2011 11:00 PM

Subject: Water Management and Environmental Reviews Submitted on North Anna 3 Project

Description:

CC Routing: RegionII

ADAMS Accession Numbers - Incoming: NONE

Response/Package: NONE

Other Information

Cross Reference Number: G20110201, LTR-11-0135

Staff Initiated: NO

Related Task:

Recurring Item: NO

File Routing: EDATS

Agency Lesson Learned: NO

OEDO Monthly Report Item: NO

Process Information

Action Type: Letter

Priority: Medium

Sensitivity: None

Signature Level: NRO

Urgency: NO

Approval Level: No Approval Required

OEDO Concurrence: NO

DCM Concurrence: NO

OCA Concurrence: NO

Special Instructions:

Document Information

Originator Name: Harry Ruth

Date of Incoming: 3/12/2011

Originating Organization: Friends of Lake Anna

Document Received by SECY Date: 3/23/2011

Addressee: Chairman Jaczko

Date Response Requested by Originator: NONE

Incoming Task Received: Letter

OFFICE OF THE SECRETARY
CORRESPONDENCE CONTROL TICKET

Date Printed: Mar 23, 2011 11:20

PAPER NUMBER: LTR-11-0135 **LOGGING DATE:** 03/21/2011
ACTION OFFICE: EDO

AUTHOR: Harry Ruth
AFFILIATION: VA
ADDRESSEE: Gregory Jaczko
SUBJECT: Request North Anna 3 reviews be halted

ACTION: Direct Reply
DISTRIBUTION: Chairman, Comrs, SECY to Ack

LETTER DATE: 03/12/2011
ACKNOWLEDGED: No
SPECIAL HANDLING:

NOTES:

FILE LOCATION: ADAMS

DATE DUE: 04/14/2011 **DATE SIGNED:**

EDO --G20110201

Joosten, Sandy

From: Harry Ruth [HC.RUTH@LOUISA.NET]
Sent: Saturday, March 12, 2011 12:59 PM
To: CHAIRMAN Resource
Subject: Fw: FOLA - Request North Anna 3 reviews be halted

----- Original Message -----

From: Harry Ruth
To: Senator R. Edward Houck ; Senator Charles Colgan-2 ; Senator Charles Colgan ; Gregory Jaczko (NRC Chairman) ; David Kaiser (NOAA)
Cc: Thomas Faha (VDEQ - No Va Dir) ; Will Frazee ; Will & Aileen Frazee (Jerdone Is) ; Walter Michalski ; Tersh & Jean Norton ; Steve (Ski) & Cheryl Monoski (Both Waters) ; Steve & Doris McGuire ; Richard Morrow ; Rich Kunz(Covenant Cove) ; Paul Schoenhard ; Linda Probst (Pine Harbor) ; Kirt Obeck (Busbees) ; Ken Remmers (work) ; Ken Remmers ; John & Tessie Fugett (Busbees) ; Jim Burdge ; Helen & Bruce McCotter (Red Hat) ; George & Gerry Heino ; Gary Muller ; Gary & Linda Bullis ; Fred & Cara Bitzer > ; Frank Jenkins ; Duane Redic ; Dennis Schaible ; Dave & Terry Conn ; Dan Baker (Work-Busbees) ; Dan & Leslie Baker (Lot 1 - Ruth Est) ; Dan & Fran Verjinski ; Chuck Grutzius (Covenant Cove) ; Bob & Jo Richards ; Barbara Crawford (Cuckoos Nest) ; Michael Ireland (Contrary Forest) ; Jack Higgins(Plum Tree) ; Dan Byers (LCBS -Jackson) ; Robert Dube (Louisa Administrator) ; Willie Gentry (LCBS - CD) ; Director David Paylor (VDEQ) ; Richard Weeks (Dep-VDEQ) ; Tamsen Dozier (NRC Environmental) ; Ellie Irons (VDEQ) ; Sarah Marsala (VDEQ - WWP) ; John Kuriawa (NOAA)
Sent: Thursday, March 10, 2011 12:27 PM
Subject: FOLA - Request North Anna 3 reviews be halted

10 Mar 2011

To: NRC Chairman, Gregory Jaczko
Senator Charles Colgan
Senator R. Edward Houck
DEQ Director, David Paylor
NOAA - David Kaiser

Info Tamsen Dozier (NRC Environmental)
Ellie Irons (Va. Office of Environmental Impact Review) the Coastal Zone Management)
Sarah Marsala (VDEQ - Water Permits)

Reference: Water Management and Environmental Reviews previously submitted on the North Anna 3 project.

Dear Chairman, Senators and Director,

Based on the below article, it appears that the NRC Environmental, OEIR Coastal Zone Management Office and the VDEQ Water Permits and associated Environmental Reviews currently being processed by the NRC and Virginia DEQ about a proposed 3rd nuclear reactor at North Anna is entirely premature. You are currently soliciting comments from the public and local governments for a design that is still not approved. This is the time for all to seriously look at the design and consider changes that will reduce or eliminate the additional of up to 24 million gallons a day of consumptive water use with the proposed 3rd reactor by using more dry cooling before construction begins in a Lake that has over 3 million annual recreational users. 2011 technology should be used for reducing water use in a lake that fed by a very small watershed, not a free flowing river. The technology should also incorporate the latest controls for releasing water out of the lake and also at Dike 3 for maintaining design water levels in both the main reservoir and the cooling lagoons.

If the NRC is not going to review the design of the 3rd reactor until 2013 (see below article), how can the public or local governments make intelligent

comments today (2011) on a design that is not been approved, nor can the public or local governments anticipate what all of the environmental or other impacts that they wish to comment on until it is approved..

This current process appears to be more absurd, when the permits or certifications that you are currently soliciting comments for, could be certified or approved in 2011 and the consistency certification would be good for a lifetime, while the water permit(s) would be good for 15 years for a design that still has not been approved and will not be for another 2 or 3 years, if at all. If the design is not approved or is modified in anyway following the granting of the consistency certification or the water permits, the public will have no future recourse and Dominion will have valid permits and a consistency certification.

The timing of the current federal and state processes for the coastal zone certifications and water withdrawal permits for the North Anna 3 project definitely has the cart before the horse. Likewise some of the NRC Environmental Reviews do likewise.

The public was requested/instructed to comment on a construction water withdrawal permit by 4 Mar 2011 and a Coastal Zone Consistency Certification by 18 Mar 2011.

We request that the entire process be reviewed and updated at both the Federal Level (NRC and NOAA) and at the state level (VDEQ & State Water Control Board). It appears that the current process is not only wasting our public servants time at the NRC and VDEQ, (but more importantly during a recession with millions of people out of work), wasting the taxpayers money, the publics' time and a federal budget that appears to be out of control.

Please note that the Friends of Lake Anna is not anti-nuclear, nor do we have "not in my backyard" sentiments, but do support a wise and safe use of nuclear energy. Our goal is simply to protect Lake Anna for it approximately 3,000,000 annual users, together with its local businesses and insure compliance with the law. We do support the North Anna 3rd unit project, but want to insure that all environmental concerns are addressed in a responsible manner.

Therefore based on the above, (1) Please halt the current consistency certifications, water permit processing and associated environmental reviews for the North Anna 3 reactor until the NRC design review is completed: and (2) Also change and update the current laws/regulations as appropriate.

We will look forward to hearing from you soonest on the these requests.

Sincerely,

Harry Ruth
for the Friends of Lake Anna
C/O 230 Heather Drive, Bumpass, Va. 23024
Phone 540-872-3632

Acronym List:

DEQ Department of Environmental Quality
OEIR Office of Environmental Impact Review (VDEQ)
NOAA - National Oceanic and Atmospheric Administration
NRC Nuclear Regulatory Commission
VDEQ Virginia Dept of Environmental Quality

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Reactor Design Changes Delay New Units at North Anna and Comanche Peak Nuclear Plants

 [Nuclear Street News Team](#)
Wed, Mar 9 2011 5:55 AM

- [Comments 0](#)

The Nuclear Regulatory Commission has indicated changes to the design of Mitsubishi's Advanced Pressurized Water Reactor will delay expansions at two nuclear plants, one for 18 months and the other for two years.

Luminant sought licensing for two new 1700 megawatt APWRs at its Comanche Peak site in Texas. Dominion, after starting the licensing process with plans to install a GE-Hitachi reactor, also decided last year to install a new APWR at its North Anna site in Virginia. While the NRC approved Mitsubishi's APWR design in 2008, the company had made structural changes to the plans that NRC indicated will require another seismic analysis.

A Dominion spokesman told Platts news service that the design review for the Virginia project would be delayed until 2013.

Likewise, the NRC indicated the safety review for Luminant's project will be pushed back to 2013, a delay of 18 months.

The safety review of Mitsubishi's US APWR design was scheduled to be completed in September, but last month the NRC said it would be pushed back to May of 2013 because of deficiencies in the application regarding structural analysis and instrumentation design.

•

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Received: from mail1.nrc.gov (148.184.176.41) by OWMS01.nrc.gov
(148.184.100.43) with Microsoft SMTP Server id 8.2.247.2; Sat, 12 Mar 2011
12:59:01 -0500

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X-SBRS: 5.3

X-MID: 33010777

X-fn: TC_5F00_Banner_5F00_main5.jpg, 4THI6Z6TZQL7.jpg

X-IronPort-Anti-Spam-Filtered: true

X-IronPort-Anti-Spam-Result:

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d="jpg'145?scan'145,208,217,145";a="33010777"

Received: from mailrtr16.ntelos.net ([216.12.0.116]) by mail1.nrc.gov with
ESMTP; 12 Mar 2011 12:59:00 -0500

Received: from HarryCarolRuth (92.sub-75-192-176.myvzw.com [75.192.176.92])

(authenticated bits=0) by mailrtr16.ntelos.net (8.14.2/8.14.2/Debian-2build1)

with ESMTP id p2CHwqDS024273 for <Chairman.Resource@NRC.GOV>; Sat, 12 Mar
2011 12:58:52 -0500

Message-ID: <C2D90B54B61E4061B734B765AEFF986F@HarryCarolRuth>

From: "Harry Ruth" <HC.RUTH@LOUISA.NET>

To: <Chairman.Resource@NRC.GOV>

Subject: Fw: FOLA - Request North Anna 3 reviews be halted

Date: Sat, 12 Mar 2011 12:58:59 -0500

MIME-Version: 1.0

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X-Priority: 3

X-MSMail-Priority: Normal

X-Mailer: Microsoft Outlook Express 6.00.2900.5931

X-MimeOLE: Produced By Microsoft MimeOLE V6.00.2900.5994

Return-Path: HC.RUTH@LOUISA.NET

From: [Hatchett, Gregory](#)
To: [Flanders, Scott](#)
Subject: FY1:WPIT report 032311b.docx
Date: Wednesday, March 23, 2011 3:32:15 PM
Attachments: [WPIT report 032311b.docx](#)

WORK PROCESS IMPROVEMENT TEAM ASSESSMENT REPORT

MARCH 2011

Team Member	Signature	Date
Christian Araguas		
Jeff Ciocco		
Theresa Clark		
Samantha Crane		
Allen Fetter		
Gregory Hatchett		
Michelle Hayes		
Mark Lombard		
Michael McCoppin		
Edward Roach		
Thomas Scarbrough		
Suzanne Strosnider		

*Work Process Improvement Team Assessment Report
March 2011*

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EXECUTIVE SUMMARY

A coalition focused on improving use of Enterprise Project Management (EPM) within the Office of New Reactors (NRO) was initiated as a result of the Fall 2010 NRO management retreat. Members were selected based on recommendations from the management team to provide a cross-section of NRO functions and divisions. The team renamed itself the "Work Process Improvement Team," or WPIT, and defined its mission as determining the transformation needed to best utilize the current set of software tools to support planning and execution of NRO programs.

Through multiple meetings, WPIT developed a vision for EPM, as well as lower-level objectives supporting the vision. In the team's vision, EPM is NRO's accepted primary means to plan and execute licensing and non-licensing projects. EPM enables staff at all levels in the organization to understand and manage ongoing tasks and priorities, as well as to forecast work. EPM adds value as a user-friendly, consistent, flexible planning and scheduling tool populated with accurate, current data.

Following discussions with dozens of NRO staff and managers and analysis of a previous assessment of implementation, the team developed specific findings related to the elements of the vision for EPM. To improve on the situation described by the findings, WPIT recommends two high-level changes, as well as six near-term recommendations, four medium-term recommendations, and four long-term recommendations. These proposed changes and recommendations are listed below.

- **High-Level Changes**
 - EPM Program Manager
 - Steering Committee
- **Near-Term Recommendations (1 to 6 months)**
 - Establish and maintain a sense of urgency and importance in using EPM throughout NRO.
 - Define roles and responsibilities for all EPM users and owners.
 - Establish a project change control process with clearly defined roles, responsibilities, timeframes, and thresholds for approval.
 - Establish a software change control process that solicits user input, considers the impact of changes on users, and communicates the changes to users prior to implementation.
 - Develop a process, with criteria, to define the work captured in EPM.
 - Develop and provide quick reference guides.
- **Medium-Term Recommendations (6 to 12 months)**
 - Conduct benchmarking and identification of best practices in the public and private sectors.
 - Interact with users to identify and create role-specific reports.
 - Interact with users to identify needs and improvements for "My Tasks."
 - Establish and communicate NRO project priorities and link to EPM tasks.
- **Long-Term Recommendations (greater than 12 months)**
 - Standardize design center inputs, outputs, and work breakdown structure.
 - Identify additional training necessary to implement defined roles and responsibilities to obtain the maximum benefit from EPM.
 - Develop and issue additional guidance for users.
 - Provide a mechanism to perform "what-if" analyses on schedules.

OVERVIEW

MISSION

The Enterprise Project Management (EPM) Coalition was initiated as a result of the Fall 2010 Office of New Reactors (NRO) management retreat. This retreat discussed the following goals for the EPM Coalition:

- Define the “transformational change” needed to take EPM to the next level
- Develop the long term strategy and vision to effect the change
- Collect and investigate issues/concerns
- Separate truth from fiction
- Develop, implement, and celebrate short term wins
- Support the long term strategy

The Coalition members were selected based on recommendations from the management team to provide a cross-section of NRO functions and divisions. The first meeting acquainted members with the concept of change management and the role of the EPM Coalition. The Coalition picked a name, the Work Process Improvement Team (WPIT), to better describe the purpose of the team and its mission, which is to:

Determine the transformation needed to best utilize the current set of software tools to support planning and execution of NRO programs.

For the purposes of this effort, WPIT defined EPM as the core Microsoft application which contains the schedule (i.e., the input) for NRO program activities and provides reports (i.e., the output) for tracking of project tasks and resources. WPIT did not assess SharePoint, the electronic request for additional information (eRAI) system, or other applications or interfaces that may be included in the definition of “EPM.”

APPROACH

WPIT defined three sub-groups to perform the following tasks:

1. Develop the WPIT mission
2. Review results of the “NRO EPM Self-Assessment” conducted in 2008 (see Appendix A) and other available data generated/gathered previously
3. Conduct a new survey of a selected group of NRO staff (see Appendix B)

WPIT held a one day retreat during which an exercise was conducted to define what EPM should look and feel like in the future based on the knowledge of the team members and a review of previous and current self-assessment and survey data. This exercise helped the team define the future vision and objectives of the tool in the “Vision and Objectives” section below. The team performed a gap analysis of the current state of EPM against the future vision and documented the results of this activity in the “Findings” section below. It is recognized that only a small number of activities or corrective actions can be the focus at one time to assure sustainability and effectiveness. Therefore, in the “Conclusions and Recommendations” section, WPIT proposes two high-level changes as well as near-term, medium-term, and long-term recommendations.

*Work Process Improvement Team Assessment Report
March 2011*

Note that the first and most important recommendations of the WPIT are to establish an EPM Program Manager position and a steering committee with sufficient independence, authority, and responsibility to oversee all major changes to EPM and assure that the tool is effective in meeting the needs of both the NRO program and EPM users. Many members of the WPIT are willing to serve as members of this steering committee if this recommendation is adopted. Additional individuals, with the capabilities and experience that could enhance the effectiveness of steering committee, should be identified to serve on the committee as well.

VISION AND OBJECTIVES

WPIT collectively developed a vision statement to define a strategic direction for EPM. This vision is designed to serve as a decision-making criterion: improvements recommended by the team are intended to support the vision.

EPM is NRO's accepted primary means to plan and execute licensing and non-licensing projects. EPM enables staff at all levels in the organization to understand and manage ongoing tasks and priorities, as well as to forecast work. EPM adds value as a user-friendly, consistent, flexible planning and scheduling tool populated with accurate, current data.

Based on this vision statement, the team developed specific objectives to support the vision. These objectives are outlined in Table 1.

Table 1. Vision and Objectives for EPM

Vision Element	Objectives
EPM is Accepted	<ul style="list-style-type: none"> • EPM is accepted by all staff in NRO. • All staff understand and implement EPM roles and responsibilities including system use, data input, system maintenance and enhancements, soliciting and utilizing feedback, and reporting. • Users do not feel the need to develop or utilize tools outside of EPM because the data are accurate and they trust the information provided by EPM.
EPM Data Are of High Quality	<ul style="list-style-type: none"> • Data are input in a manner to keep it accurate and current. • Schedule changes are evaluated to determine the impact to other associated schedules (e.g., design certifications (DCs), reference combined licenses (RCOLs), and subsequent combined licenses (SCOLs)) and timely adjustments are made to each schedule as necessary. • Schedule changes are evaluated to identify and resolve resource conflicts. • The schedule change control process is timely and effective, and associated roles and responsibilities are understood by all users. • Consistent guidance is provided and used in determining project status (e.g., 30/60/90% task completion) for all project phases.
Staff Understand and Manage Ongoing Tasks and Priorities	<ul style="list-style-type: none"> • Technical reviewers and project managers are aware of and understand tasks and due dates assigned to them and use this information to plan their work activities. • Staff assigned to tasks either meet the due dates or provide early feedback on needed date or task changes. • Branch chiefs understand how to view work and due dates assigned to the branch and use this information to manage branch work (e.g., using reports to identify over- or under-allocations and future resource needs). • Project managers use available schedule and resource data to determine project status and make informed decisions to keep their projects on track. • Managers are able to view information regarding tasks assigned to their division or the office as a whole to identify significant risks or issues requiring management intervention in order to meet project or office goals. • EPM is able to display relative project priorities as defined by senior management.

Work Process Improvement Team Assessment Report
March 2011

Vision Element	Objectives
Staff Can Forecast Work	<ul style="list-style-type: none"> • EPM enables dynamic scheduling including re-forecasting task and due dates as changes are identified, and re-baselining schedules if needed. • EPM has the ability to perform “what-if” analyses. • EPM provides timely and accurate information regarding actual and future resource expenditures (including non-licensing work) sufficient for input to budget formulation. • A comprehensive historical performance trail is available for planning future projects, improving the task estimation and acquisition processes and providing a perspective on the quality, timeliness, and budget needs of the organization.
EPM Is User-Friendly	<ul style="list-style-type: none"> • System interfaces are role-based, defined with user input, and change infrequently. • Interfaces are customizable by users so that significant drilling down is not required to reach information that is frequently accessed. • Users receive timely feedback on requests for help or data/system changes. • Customer service points of contact are easily found and are responsive to users. • Guidance and user aids (e.g., quick reference guides for common tasks) are clear, easily found, and up-to-date. • Help buttons and tips that pop up when hovering over certain buttons or links are provided. • Access to various views and information can be done quickly and easily. • Users can access needed reports easily. • Electronic work flows are used for process deliverables.
EPM Is Consistent	<ul style="list-style-type: none"> • The look and feel of schedules for similar work are built consistently regarding task and subtask detail, titles, task durations, resource estimates, and expected deliverables.
EPM Is Flexible	<ul style="list-style-type: none"> • EPM supports the needs of multiple user roles (e.g., branch chiefs, managers, technical reviewers, project managers). • EPM can be customized by the user to meet individual needs. • Information from EPM can be used for various activities including earned value management, workload planning, and budget formulation. • EPM can model a variety of project types, including major reviews, inspections, guidance development, recurring obligations (e.g. code committees), and branch-specific activities. • EPM data effectively communicates, at all organizational levels, project progress based on a realistic comparison of actual spending to planned spending. • EPM enables accurate predictions of cost and schedule to complete a project, starting early in the project, so that adjustments can be made before a crisis develops.
EPM Projects Follow Change Control Processes	<ul style="list-style-type: none"> • EPM project changes (e.g., due dates, task resources) are only made in accordance with an approved change control process. • Decisions are made in consideration of established earned value management (EVM) thresholds. • The process includes timely approval of changes and feedback to requestors.
Software Changes Are Controlled	<ul style="list-style-type: none"> • System requirements are developed with user input and based on best business practices. • Software changes are only made in accordance with an approved change control process. • Changes that may impact system users (e.g., look, feel, or functionality) are reviewed by a users group prior to implementation.

FINDINGS

EPM IS ACCEPTED

As was noted under the objectives, all staff should have a common understanding and feel comfortable implementing EPM in all of its roles and responsibilities, including system use, data input, system maintenance and enhancement, soliciting and using feedback, and reporting. As a result, users should not feel the need to develop tools outside of EPM because they trust the data and information provided and see the value of their contribution and use of the tool. In general, users have accepted EPM to the extent that they recognize it is the office standard and they are neither actively seeking another

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alternative nor actively lobbying not to use it. Lack of acceptance relates to several areas, including the value of EPM, ownership of EPM, roles and responsibilities, accuracy of data, and work management.

VALUE OF EPM

The value of EPM as a project management tool in NRO has not yet been fully realized. Staff in each user role do not understand the value their contribution provides to the agency in supporting the NRC mission.

OWNERSHIP OF EPM

It is unclear who owns EPM, who owns the continued improvement to EPM, who sets the standards and procedures for its use, and who is the lead project manager for completing the implementation of EPM into NRO.

ROLES AND RESPONSIBILITIES

EPM Roles & Responsibilities – Roles and responsibilities for individuals using EPM for project or work management are unclear. Desktop guides for use by staff do not exist or are not adequate. Clear expectations are not communicated.

ACCURACY OF DATA

Most users want EPM to accurately reflect project work and resource data. (Data quality is addressed in more detail in the following section.) Users would prefer to see EPM updated to reflect accurate data as opposed to using other tools that provide a similar function. However, a frequency by which schedule information is updated is not adhered to or understood. Expectations for updating EPM information must be identified, articulated, communicated, executed, monitored, and enforced.

EPM is not used as a resource management tool because of the demonstrated inaccuracy of the resource data contained within the system. For example, "My Tasks" is not trusted as an accurate work list for most reviewers. There is no established culture within the NRC that supports proactive status updates and the expectations are not enforced. In addition, over-allocations cannot typically be managed using the Resource Center because of modeling and assignment inaccuracy. As a result, off-line spreadsheets are widely used to manage branch resource assignments instead of EPM.

WORK MANAGEMENT

EPM does not address critical work management issues, such as dependencies and modeling of key activities. Task interdependencies in the same project are not consistently modeled in project schedules. As a result, branch chiefs, lead project managers (PMs) and chapter PMs have to manually keep track of these dependencies when problems arise. In addition, inter-project dependencies are not shown in EPM. As a result, task completions are often improperly modeled in instances such as design center and reference site interactions or design center and reference site interactions with a combined license (COL).

Open items and request for additional information (RAI) responses are not effectively modeled in the schedules. As a result, design centers typically maintain off-line or Excel-based tracking solutions for managing this data. In addition, the work breakdown structure in the safety schedules is not based upon deliverables. As a result, EPM does not provide a useful critical path tracking mechanism.

EPM DATA ARE OF HIGH QUALITY

The data in EPM are the foundation for which system outputs are developed; therefore, it is essential that data quality is preserved. Through the various methods discussed previously, the WPIT team identified several issues associated with the quality of the data in EPM. In general, these issues fell into three major categories: accuracy of project work estimates, maintenance of schedule and resource integrity, and the status of projects.

ACCURACY OF PROJECT WORK ESTIMATES

Many users have raised concerns over the accuracy of effort estimates within a given project schedule. Currently, the project worksheets that are used to develop new schedules and resources estimates are outdated and do not rely on information from recently completed reviews. In several instances, the estimates were either too large or too small. In addition, these estimates have not always been consistently applied to the same work in other project schedules. Users have also expressed concerns over contracting efforts not being incorporated into the schedules. Users would benefit from development of realistic resource estimates that capture all work associated with a project schedule that are based on both historical data and staff experience.

MAINTENANCE OF SCHEDULE AND RESOURCE INTEGRITY

One of the most frequently raised concerns was that project schedules were, more often than not, out of date and did not reflect the current state of reviews. Some of the reasons cited for this concern were known schedule delays not being captured in the project schedules, and schedule change requests either not being processed on time or not being processed at all. The relationship between projects within a design center can also contribute to schedules being inaccurate. When a schedule delay occurs within a design certification review, an analysis is not always performed to determine whether this delay affects other schedules in that same design center. There should be controls in place to ensure the integrity of schedules.

Several users also identified issues with maintaining accurate resources assignments within a project schedule. To support the various resources analysis that are conducted (e.g., over allocations), controls should be put in place to ensure updates are made in EPM when a staff resource changes.

STATUS OF PROJECTS

Relative to the status of projects, many users have identified the need to either develop a new statusing approach or redefine the existing definitions. The general consensus is that the current definitions being used do not clearly identify the true status of project activities. In addition, the WPIT team found that many technical reviewers were implementing workarounds to statusing (e.g., statusing at 99% complete) to enable time charges to a given activity code beyond the completion of the deliverable. This is being done to account for efforts being expended past the deliverable dates that are not accounted for in the schedule (e.g., concurrence process, chapter days). Schedules should be reassessed to capture all of a reviewer's efforts, such that statusing efforts can follow established guidelines. The WPIT team also found that several users would benefit from having HRMS actual data incorporated into EPM. Users feel that this would help to provide the context needed to support a realistic status of efforts on a project. To further facilitate capturing the true status of a project, many users expressed the need to incorporate the contractors' status into EPM.

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STAFF UNDERSTAND AND MANAGE ONGOING TASKS AND PRIORITIES

The most recent set of surveys and the previous assessment demonstrate that EPM is not everyone's preferred means to understand and manage ongoing tasks and priorities, as discussed below.

MY TASKS

Most technical reviewers will view "My Tasks" at least once per month, but they are not satisfied with the quality of the data. While they value the overview it provides, they consider the default views and ability to format to be cumbersome. Many users are frustrated by the instability of the system and some do not trust it to incorporate status updates. It is not clear if this is an overall system problem, or specific to some users. Some technical reviewers download "My Tasks" to a spreadsheet, which they then sort and filter to obtain useful information.

There was no consensus among reviewers of how and when to update their status. Some used "My Tasks," some contacted project managers, and some notified their branch chiefs or technical leads in response to "Late Reports." While most users were aware of the "blue card" defining status milestones, they did not necessarily follow these recommendations. There was also no consensus among technical reviewers of how and when to request a date change.

SCHEDULING

Many project managers reported that they relied on personal communication with the reviewers, rather than EPM data, to evaluate their project status. They fed any status, resource and date changes back to EPM through regular meetings with NPLS portfolio managers, but many felt the time it took for changes to be incorporated (up to 8 days) was too long.

REPORTS

Many branch chiefs use data from EPM, along with their knowledge of work not tracked in EPM, to generate their own schedules and milestone charts. Some maintain these files on SharePoint or network drives so they are available for use by staff. Some managers find the project-focused reports in EPM are not useful for providing the overall status across design centers.

PRIORITIES

Currently, EPM does not distinguish project priorities, which are instead passed down through the management chain. Several project managers observed they are not made aware when resources are pulled from their project to work on higher priority assignments.

STAFF CAN FORECAST WORK

The current version of EPM does not include the level of forecasting required to successfully support NRO personnel in their assignments. Non-licensing work and administrative time is not included in the schedules making it difficult to determine resource loading or predict future resource and budget requirements. EPM should include the capability to perform "what-if" analyses on variations of resource levels and dates; managers would find this to be a valuable tool when evaluating options. EPM should provide a means for entering staff unavailability (e.g., vacation, short-term assignments) to assist in identifying schedule conflicts and resources that are over or under-allocated. Users should have access to reports that include planned, actual, and percent completion data for current and future work, historical hours spent on projects and tasks, and resource assignments for current and future work.

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Robust forecasting tools are necessary for NRO staff to model future work and provide input to the budget formulation.

EPM IS USER-FRIENDLY

During discussions with WPIT members, as well as in previous assessments, EPM users emphasized the need for the tool to be more user-friendly. Many of those surveyed appreciated the relative ease of finding documents in the SharePoint portal sections of EPM, as well as creating and routing RAIs in the eRAI system. Users of EPM would like at least this level of user-friendliness to be applied to the EPM scheduling and reporting systems.

The user's interface with EPM could be improved through various means, such as:

- Simplification of the user interface
- Additional training and guidance
- Various role-based reports
- Convenience tools such as automatic reminders

SIMPLIFICATION

The EPM tool includes numerous features and methods of customization. While these features create a powerful system, many users find the complexity confusing and cumbersome. In general, there appear to be too many "clicks" required to access desired information. In addition, there is often too much information on a screen. Users would benefit from fewer steps to obtain needed information. In addition, users often requested the ability to create and save more simple custom views in areas such as the Project Center and My Tasks.

TRAINING AND GUIDANCE

Many users identified the need for additional training and guidance on the use of EPM. Some guidance documents, including brochures and procedures, were developed early in the implementation of EPM. EPM users, however, are not generally aware of or using these documents. Other software packages in use at the NRC include features such as "tooltips" with pop-up advice, help menus, user manuals, quick reference sheets, and refresher training. For everyday activities, as well as more infrequent evolutions, the staff and managers surveyed feel that this additional assistance would be very beneficial.

REPORTING

Most users surveyed do not frequently view the standardized Crystal Reports in EPM. Similar to the discussion above, the variety and complexity of these reports is often overwhelming for users. As a result, many users develop their own customized reports, ranging from Gantt charts drawn in colored pencil, to spreadsheets of due dates selected manually from dozens of schedules, to custom Crystal Reports created by staff who have the software. While requests for specific reports vary and development of individualized reports for each user would be nearly impossible, users have expressed a strong desire to be involved in developing specific reports suited to their role.

CONVENIENCE TOOLS

The development of various convenience tools for users would also enhance the user-friendliness of EPM. For example, EPM users suggested developing email reminders of near-term or late tasks, integration of due dates with Outlook calendars, and automatic notification of new assigned tasks. Users

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would benefit from an exploration of standard EPM features that could integrate the schedules in EPM with the software tools they use daily.

Of the more than 600 user comments tabulated by WPIT, nearly one quarter related to the need for EPM to be more user-friendly. Enhancements to the EPM interface, therefore, would be extremely effective in improving the integration of EPM into NRO culture. The "Conclusions and Recommendations" section below provides additional information on a path forward in this area.

EPM IS CONSISTENT

The working group identified several items that will need to be addressed before EPM can be considered consistent. Currently, the schedules do not have a similar look and feel for similar work across design centers. The work break down structure and task naming conventions vary between design centers. Some task descriptions do not describe the scope of work for the task nor do they identify the deliverable due at the end of the task. Schedules do not consistently reflect standard definitions for phases and deliverables, and there is no concise set of tasks used consistently across the design centers. In addition, there are no standard conventions or guidance for specific work activities such as closing open items or statusing a task to 100%. Lastly, the level of detail in schedules (e.g., chapter versus section tasks), including the activity codes assigned to tasks or task groups, is not consistent across schedules. Many staff perceive the current level of detail to be too great.

EPM IS FLEXIBLE

The current implementation of EPM appears to have been done in a "one size fits all" solution that does not reflect the needs of different organizational users and falls short of taking advantage of the features of the current platform. Further, the system appears to have been implemented in a way that does not adequately support both resource and performance management. With regard to resource management, the technical branches are not currently able to extract from the system information that focuses on utilization of staff resources leaving them unable to optimize. A solution is needed that would give the technical resource branches the ability to balance resource demand (project needs) with supply (resource capacity) across multiple projects and sub-programs (i.e., licensing, oversight, and advanced reactors). This solution would also allow them to track all resource work (both licensing and non-licensing).

Recognizing that performance management is different from resource management, the system needs to track performance in a way that clearly focuses on achieving cost and schedule commitments. The process is normally demand driven and is centered on a single project's resources needed to achieve cost/schedule goals. In this sense cost and schedule metrics should be established in order to guide when a project is within standard. Currently there are no metrics, which makes it difficult to process project performance when discussed at organizational project performance meetings.

Ultimately, the current system implementation has not recognized the roles of different users and their information needs in project execution. There is a tendency to think that the current software solution is going to provide everything users need or that users need everything it produces. Without clearly defined deliverables and information for the various users the system becomes rigid and difficult to manage because it understates the organizational needs, missing critical requirements for program success.

EPM PROJECT FOLLOWS CHANGE CONTROL PROCESSES

NRO projects are not executed in accordance with a project plan, change control guidelines, or a change control process. Change control is one of the most difficult problems facing NRO project managers. Many project managers and technical managers have adopted an informal process of handling change requests. Misunderstandings have arisen from this informality, and the data integrity and quality have suffered, as shown in unreliable earned value management reports of project performance.

The working group and the 2008 NRO EPM Self-Assessment identified a lack of a formal change control process to integrate and coordinate changes throughout the licensing review project cycle. There is no reasonable rigor applied consistently across NRO to process change requests, which in turn has resulted in poor data quality and integrity. In summary, there is no coordinated review of requested changes to the projects (both content and procedures); no identification of all task impacts; no translation of these impacts into project performance, cost, and schedule; no evaluation of the benefits and costs of the requested changes; no identification of alternative changes that might accomplish the same ends; no process to accept or reject changes; no communication of the changes to all concerned parties; no assurance the changes are properly implemented; and no regular reports that summarize all changes to date and their project impacts.

SOFTWARE CHANGES ARE CONTROLLED

The software tools that are encompassed under the umbrella of EPM have been changed with minimal user input. The 2008 NRO EPM Self-Assessment and the working group have identified that a stable, consistent software change process does not exist for EPM. System patches and repairs have been installed without the knowledge of the end users and resulted in unanticipated issues. According to the 2008 NRO EPM Self-Assessment, some needed patches have not been installed. EPM Resource staff do not communicate to affected users if fixes have been implemented or are complete. It is not clear who decides which software changes are selected, when they are reviewed for cost benefit and how they are subsequently implemented.

Changes to be implemented are not systematically evaluated for user impact. Users are not consulted or aware of the potential impacts prior to software being installed. Within EPM, it was identified that key software tools were either changed or eliminated and these tools were viewed by end users as essential to identifying and tracking resource constraints in order to manage multiple projects. This lack of understanding resulted in removing a tool available for budget impact estimation and caused the staff to develop a variety of inefficient workarounds to obtain needed information.

Ineffective communication of pending patches or fixes and their likely impact on end users prevent the staff from anticipating the effect of software changes. Processes could be established and implemented to provide consistency and a stable platform which would allow end users to exercise EPM with more confidence.

CONCLUSIONS AND RECOMMENDATIONS

Based on the findings and the strategic vision for EPM, WPIT proposes two high-level changes, as well as a series of improvements that can be developed over time. Making the two high-level changes is essential to ensure implementation of further improvements.

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EPM PROGRAM MANAGER

An EPM Program Manager position is established and assigned the responsibility to lead the rest of the change management process for enhancing EPM, implement the recommendations contained in this report, and manage continuous improvement and functionality of EPM. It needs to be clear to all EPM users who is responsible for managing implementation of EPM as a project and for defining requirements, managing future enhancements, and implementing changes to ensure EPM fulfils the vision above.

STEERING COMMITTEE

A steering committee is formed to ensure that user needs continue to be solicited and addressed and that EPM serves the needs of the office. This group needs to have sufficient independence, responsibility, and authority to monitor resolution of WPIT and other recommendations. All major changes are reviewed and approved by this group.

A draft charter for the steering committee is provided in Enclosure 1. It is intended that this charter be signed by the Office Director to communicate the importance of this effort.

NEAR-TERM RECOMMENDATIONS (1 TO 6 MONTHS)

ESTABLISH AND MAINTAIN A SENSE OF URGENCY AND IMPORTANCE IN USING EPM THROUGHOUT NRO

A sense of urgency is a key component of the change management process. Without this sense of urgency, enhancements to EPM may be postponed indefinitely. Therefore, continued management communication (e.g., through direct communications, all-hands meetings, and web announcements) on the importance of both using and enhancing EPM is critical to the success of these recommendations. While communication initiatives of both WPIT and the proposed EPM steering committee are important, management attention and oversight is key to ensuring that NRO staff understand and meet their responsibilities related to EPM. To establish and maintain a sense of urgency and facilitate management attention and oversight, performance metrics should be established for both system use and project performance. These metrics can be developed and tracked down to the end user but measured for the office. This would provide the visibility needed to further improve EPM and sustain this improved state.

DEFINE ROLES AND RESPONSIBILITIES FOR ALL EPM USERS AND OWNERS

To ensure consistent use of EPM across the office, NRO should establish and communicate to staff clear expectations for each user group (technical reviewers, project managers, branch chiefs) and each supporting function (analysts, schedulers, project managers) specifying their responsibility for maintaining accurate information in the schedule.

ESTABLISH A PROJECT CHANGE CONTROL PROCESS WITH CLEARLY DEFINED ROLES, RESPONSIBILITIES, TIMEFRAMES, AND THRESHOLDS FOR APPROVAL

The office should follow simple guidelines, applied with reasonable rigor, to establish an effective change control procedure. Project managers should control the projects in accordance with approved change and earned value management control criteria. Project managers should ensure project scope, schedule, and cost are managed against the control criteria. A change control procedure should be developed with clearly defined roles, responsibilities, timeframes, and thresholds for approval.

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ESTABLISH A SOFTWARE CHANGE CONTROL PROCESS THAT SOLICITS USER INPUT, CONSIDERS THE IMPACT OF CHANGES ON USERS, AND COMMUNICATES THE CHANGES TO USERS PRIOR TO IMPLEMENTATION

The process of controlling software change is essential to establishing a stable platform that users will trust. NRO should develop and implement simple guidelines and establish an effective change management process that provides users with the impact of proposed software changes. A major change in fit, form or software function should be communicated sufficiently in advance to all affected stakeholders. Proposed software changes should be reviewed by stakeholders, prior to being installed.

DEVELOP PROCESS, WITH CRITERIA, TO DEFINE THE WORK CAPTURED IN EPM

To provide more accurate forecasting and to be able to realistically perform resource loading, both licensing and non-licensing work should be included in EPM. A process should be developed that identifies which non-licensing work will be entered into EPM and who would have the ability to enter and make changes to those tasks. The process could include a set of criteria for determining the work that will be entered into EPM. In addition, it should provide access for entering and changing tasks based on the category of the task.

DEVELOP AND PROVIDE QUICK REFERENCE GUIDES

Quick reference guides should be developed to provide the staff with step-by-step directions on performing common tasks such as changing work status, printing reports, finding activity codes, and locating and manipulating schedules. These quick reference guides should be easily accessible from the NRO SharePoint site.

MEDIUM-TERM RECOMMENDATIONS (6 TO 12 MONTHS)

CONDUCT BENCHMARKING AND IDENTIFICATION OF BEST PRACTICES IN THE PUBLIC AND PRIVATE SECTORS

The “benchmarking” of organizations that use an EPM tool as a means to coordinate work activities should be used as an ongoing self-assessment to compare their performance and best practices with internal activities, with the ultimate goal of identifying changes that can make significant improvements to the efficiency and effectiveness of the agency’s safety reviews. Typical benchmarking programs include analyzing and acting on the information collected by implementing features that can be adapted to our programs, monitoring improvements and conducting ongoing benchmarking activities, emulating the best of the best practices found, capitalizing on existing strengths, and eliminating weaknesses.

INTERACT WITH USERS TO IDENTIFY AND CREATE ROLE-SPECIFIC REPORTS

As discussed in the “EPM is user-friendly” section above, many users develop their own customized reports rather than using standardized reports currently available. Users have expressed a strong desire to be involved in developing specific reports suited to their role. Interacting with users to develop a concise set of reports suited to each of the various NRO roles (e.g., technical reviewer, branch chief) would leverage the abilities of the EPM support staff and reduce the effort spent by individual users. While developing the initial requirements for the reports would require time and resources, users would find an immediate benefit once the reports are available.

INTERACT WITH USERS TO IDENTIFY NEEDS AND IMPROVEMENTS FOR “MY TASKS”

The EPM Program Manager should interact with users to understand how “My Tasks” is used, investigate the reported unreliability of the system, and explore other methods for statusing and summarizing ongoing tasks. The result should be either resolution of the perceived problems with “My Tasks” or replacement of “My Tasks” with a new process. The final product should incorporate user-friendly features requested by users, including the ability to format, and should be introduced so there is a clear understanding of role-specific responsibilities, including error reporting.

ESTABLISH AND COMMUNICATE NRO PROJECT PRIORITIES AND LINK TO EPM TASKS

To identify current licensing project priorities, EPM should be modified to reflect a simple method of highlighting the priority of projects (e.g., color-coding of EPM tasks). This would allow staff and project managers to be promptly notified of changes when resources are adjusted from a project to work on higher priority assignments. This recommendation could also result in more frequent monitoring by all users when confidence is established in the schedules and the priorities.

LONG-TERM RECOMMENDATIONS (GREATER THAN 12 MONTHS)

STANDARDIZE DESIGN CENTER INPUTS, OUTPUTS, AND WORK BREAKDOWN STRUCTURE

An effort to standardize future design center inputs and outputs, and work breakdown structure should be undertaken to develop consistency across the design centers. Through better standardization of work breakdown structure and clear naming conventions among design centers, it will be more straightforward to build schedules with a similar look and feel for the same work across the centers. While there may be a desire to maintain the same level of detail provided in current schedules, it is recommended to assign activity codes at the milestone level and/or to group similar reviews under the same activity code.

IDENTIFY ADDITIONAL TRAINING NECESSARY TO IMPLEMENT DEFINED ROLES AND RESPONSIBILITIES TO OBTAIN MAXIMUM BENEFIT FROM EPM

Effective use of EPM requires that staff understand how to enter, use, and analyze the data that resides in EPM. Key elements of training that need to be implemented include the following:

- A high level overview of EPM roles and responsibilities should be provided as a presentation during an all-hands type meeting.
- The current classroom training for EPM should be evaluated and enhanced with input from users and further tailored with role-specific information. Staff should be required to take this training when they begin to use EPM.
- Elements of the enhanced classroom training should be included in refresher training that is required for all EPM users both periodically and as significant system changes are made.
- In addition to the instructor led classes, webinars, web-based refresher classes, and short web-based training videos should be available for specific tasks for which staff may need assistance.
- Project Managers should be provided with training on the value and use of earned value management as it exists in NRO.
- Staff in various roles should be provided with training on the standard reports that are available with a focus on the meaning of the data and options for tailoring the reports to meet various needs. As needed, staff should have access to training on the use of Crystal Reports to create custom reports.

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DEVELOP AND ISSUE ADDITIONAL GUIDANCE FOR USERS

Surveys of EPM users have revealed the need to develop and issue additional guidance on the use of EPM. With the improvements in EPM that will result from implementation of the WPIT recommendations, technical guidance for the use of EPM could include the following:

- Prioritizing daily tasks including licensing and non-licensing work
- Customizing and sorting EPM views
- Establishing real time tasking for emergent work with alarms and notifications for new work
- Transmitting electronic versions of deliverables and access for viewing all work in office
- Adjusting completion dates for EPM tasks with justification where the critical path is not affected
- Requesting additional task hours
- Navigating EPM standard content and format by design center and application
- Searching EPM for assignments by resource and by task
- Using the Help Button
- Establishing automatic alerts when an RAI is modified in the workflow process
- Locating references (e.g., guidance, application documents, and safety evaluations) for an assigned review
- Entering draft safety evaluation reports into the workflow process

Additional guidance should also be developed for project managers and management in the use of the improved EPM.

PROVIDE A MECHANISM TO PERFORM "WHAT-IF" ANALYSES ON SCHEDULES

Management should be provided with a method for modeling various scenarios with current schedules to determine the feasibility of implementing changes to time frames or resources. Performing "what-if" analyses will allow managers to determine the effects of various schedule compression techniques before making final decisions.

COMMUNICATION STRATEGIES

Once the WPIT's report and recommendations are accepted by NRO management, the report will be made available on the NRO website. Other methods (e.g., posters, emails, presentations at division all-hands meetings) can also be used to communicate the team's results, as well as to describe ongoing efforts to improve EPM and users' roles in these efforts.

ENCLOSURE 1: DRAFT CHARTER FOR EPM STEERING COMMITTEE

This enclosure provides a draft charter for the EPM Steering Committee. It is intended that a document containing this charter, revised as necessary, will be signed by the Director of NRO.

PURPOSE

The Enterprise Project Management (EPM) Steering Committee ensures that user needs continue to be solicited and addressed throughout the implementation of EPM in the Office of New Reactors (NRO).

ACTIVITIES

The EPM Steering Committee:

- Receives periodic updates on actions taken to address the recommendations of the Work Process Improvement Team (WPIT)
- Reviews and approves all major changes to the EPM user interface
- Assesses user needs on a periodic basis to identify and prioritize improvements to EPM tools
- Briefs NRO management and communicates with NRO staff on progress related to EPM improvements

AUTHORITY

The EPM Steering Committee, through its chair, reports directly to the Director of NRO on its activities.

The Committee is given authority by the Director of NRO to provide user approval for changes to the EPM system. This user approval is one requirement for software changes under the EPM software change control process.

The Committee is also given authority by the Director of NRO to obtain periodic briefings from NRO staff on EPM topics, as well as to survey NRO staff periodically to gauge progress in enhancing EPM.

The Director of NRO retains authority for approving conceptual recommendations for major EPM improvement initiatives, such as those identified in the WPIT progress report and documented in this charter as milestones. When the EPM Steering Committee identifies additional improvement initiatives derived from user feedback, the Committee presents these to the Director for approval, then continues in its oversight role in consultation with the EPM Program Manager to ensure that approved initiatives are implemented.

SCOPE

The EPM Steering Committee focuses on end users' interface with EPM tools, as defined below.

- "End users" are defined as the NRO staff and management who use EPM tools (e.g., technical reviewers, inspectors, project managers, branch chiefs, managers).
- "Interface" in this context means viewing, reporting on, and requesting changes to data found in the EPM system.
- "EPM tools" includes the tools in the "Scheduling" tab in EPM (<http://epm.nrc.gov>), specifically My Tasks, the Project Center, and the Resource Center. The term "EPM tools" is also used to refer to reports that draw on EPM data (e.g., Crystal Reports, dashboards).

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MEMBERSHIP

The members of the EPM Steering Committee are selected to provide a cross-section of NRO EPM users, both organizationally and functionally. The original membership of WPIT is provided as an example; although some WPIT members are willing to continue service as EPM Steering Committee members, this consistency is not essential. Additional team members with specific expertise may be needed in the future.

- Christian Araguas – Technical Assistant (ARP)
- Jeff Ciocco – Licensing Project Manager (DNRL)
- Theresa Clark – Technical Assistant (DSRA)
- Samantha Crane – Inspector and Technical Reviewer (DCIP)
- Allen Fetter – Environmental Project Manager (DSER)
- Mark Lombard – Manager (DSRA)
- Mike McCoppin – Branch Chief (DNRL)
- Greg Hatchett – Branch Chief (DSER)
- Michelle Hayes – Technical Reviewer (DSRA)
- Ed Roach – Branch Chief (DCIP)
- Thomas Scarbrough – Technical Reviewer (DE)
- Sue Strosnider – Program Analyst (PMDA)

FREQUENCY OF MEETINGS

The EPM Steering Committee meets at least once a month at a mutually agreed-upon time and location. Committee members are responsible for identifying suitable times and making reasonable arrangements to be present. If more frequent meetings are requested to assess potential EPM changes or to monitor near-term recommendations for EPM improvement, these will be scheduled at a time when at least 75 percent of the team members can be present.

TIME PERIOD OF ACTIVITY

This charter remains valid for 18 months from date of signature. At this point, the Director of NRO will review this charter for any necessary scope adjustments.

The need for an EPM Steering Committee, however, is ongoing to ensure continued functionality and improvement of EPM as used in NRO.

MILESTONES

The EPM Steering Committee will direct its own activities as described under the “Authority” and “Scope” sections above. Some high-level milestones, however, are provided below. All times are relative to the date the charter is signed.

- **+1 month:** Hold kick-off meeting and develop plan for implementing the charter, as well as overseeing the initial WPIT recommendations.
- **+6 months:** Report to Director of NRO on completion of the short-term WPIT recommendations.
- **+12 months:** Report to Director of NRO on completion of the medium-term WPIT recommendations.
- **+18 months:** Report to Director of NRO on progress related to the long-term WPIT recommendations, as well as a recommendation on whether to continue the EPM Steering Committee.

*Work Process Improvement Team Assessment Report
March 2011*

COMMUNICATIONS

The members of the EPM Steering Committee are expected to serve as the advocates for the EPM enhancement activities, including updating their peer groups on plans and progress. This communication will continue informally. In addition, the EPM Steering Committee will take advantage of formal communication opportunities, including:

- NRO website news postings, at least every 2 months
- Presentations at division and office all-hands meetings, visiting each division through one of the venues at least every 6 months
- Presentations to NRO management at program meetings, at least every 6 months

From: Jackson, Christopher
Sent: Wednesday, March 23, 2011 5:45 PM
To: ODriscoll, James; Grady, Anne-Marie
Subject: RE: Proposed RAI on 6.2.4 for US-APWR Other Defined basis for GDC 56 lines from RWSP to suction of SI and CS/RHR

Great issue Jim –

I completely agree with your points. Please put the RAI in the system

A few minor comments ...

(b)(5)

Again, great issue,
CJ

From: ODriscoll, James
Sent: Wednesday, March 16, 2011 11:03 PM
To: Jackson, Christopher; Grady, Anne-Marie
Subject: Proposed RAI on 6.2.4 for US-APWR Other Defined basis for GDC 56 lines from RWSP to suction of SI and CS/RHR

Chris,
Please see the proposed RAI below and comment.

(b)(5)

(b)(5)

RAI:

(b)(5)

(b)(5)

(b)(5)

From: [SNL Energy](#)
To: [Flanders, Scott](#)
Subject: Webinar: FERC's Transmission NOPR (Why all the fuss?)
Date: Wednesday, March 23, 2011 10:37:35 AM



Join us for an informative discussion of this controversial rule and its implications.

If you have trouble viewing this email, [click here](#).

FERC's Transmission NOPR (Why all the fuss?)



Thursday, March 31 • 1:30-3:00 p.m. ET

Registration: www.snlcenter.com/nopr

FERC's landmark transmission planning and cost allocation rule, proposed in September 2010, has divided an industry still grappling with how power lines should be built and who should pay for them. Comments on the Notice of Proposed Rulemaking (NOPR) poured in last year, some in general support and others in adamant opposition. A group of senators, concerned that the rulemaking would stick their constituents with the bill for costly transmission projects, recently introduced legislation to counter it.

Join a panel of experts for a lively discussion on the rule's most controversial elements and how they could impact your short- and long-term planning strategy.

Panelists:

- **Patricia Alexander** – Advisor, Dickstein Shapiro LLP
- **Joseph T. Kelliher** – Executive Vice President, Federal Regulatory Affairs, NextEra Energy, Inc.
- **Clair J. Moeller** – Transmission Asset Management, Midwest Independent Transmission System Operator, Inc.

Moderator: Glen Boshart – Senior Industry Editor, SNL Energy

Read panelist bios [here](#).

Agenda:

- Is the rule necessary?
- Would it adequately account for regional transmission planning differences?
- What kind of public policy goals should be considered and what kind should not?
- How should the costs of regional, high-voltage transmission lines be allocated?
- Is FERC's proposal necessary to offer guidance on an issue absent from federal legislation, or is transmission cost allocation and planning best left up to policymakers?

- State regulators across the country have spoken out in opposition to the NOPR, warning that it would intrude on matters reserved for state authorities. Despite FERC's assurances, do these regulators have a point?
- Should incumbent utilities keep their right of first refusal to build new lines?
- What impact might this provision have on both incumbent utilities and merchant transmission developers?

Register or get more info: www.snlcenter.com/nopr

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11212

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From: Ashley, Clinton
Sent: Wednesday, March 23, 2011 8:25 PM
To: Carneal, Jason
Cc: Jackson, Christopher
Subject: RE: help - if possible

(b)(5)

Clint

From: Carneal, Jason
Sent: Wednesday, March 23, 2011 1:42 PM
To: Ashley, Clinton
Subject: help - if possible

Clint:

OGC had the following comment on a paragraph in Section 6.3:

(b)(5)

Thanks,

Jason

JASON CARNEAL
PROJECT MANAGER
U.S. NUCLEAR REGULATORY COMMISSION
NRC/DNRL/NARP (T-6J4)
301-415-3813

From: McKirgan, John
Sent: Wednesday, March 23, 2011 8:55 PM
To: Lee, Samuel
Cc: Jackson, Christopher
Subject: FW: AP1000 Final SE Chapter 23 - Concurrence

Sam, Chris had some good comments on Ch 23.E Changes to Potable Water System and main control room envelope. I wanted to make sure you didn't have any objections.

Are you also reviewing Ch 23? Any issues we should be aware of?

Thanks,

John

From: Jackson, Christopher
Sent: Tuesday, March 22, 2011 1:42 PM
To: Grady, Anne-Marie; McKirgan, John
Subject: RE: AP1000 Final SE Chapter 23 - Concurrence

John,

I have reviewed the document and have a few comments. Attached is a mark-up.

I have reviewed each of these individually but this is the first time I saw all changes together. Unfortunately it is a little confusing because a number of the changes are related but not integrated. For example, the potable water system and the control room changes are related but written up separately. This is the case for a few of the changes. At this point there is not much we can do to integrate.

A few minor comment –

(b)(5)

A few major comments –

(b)(5)

(b)(5)

CJ out!

From: Grady, Anne-Marie
Sent: Monday, March 21, 2011 4:46 PM
To: McKirgan, John
Cc: Jackson, Christopher
Subject: RE: AP1000 Final SE Chapter 23 - Concurrence

John,

(b)(5)

Anne-Marie

From: McKirgan, John
Sent: Monday, March 21, 2011 10:43 AM
To: Jackson, Christopher; Grady, Anne-Marie
Cc: Wagage, Harry
Subject: FW: AP1000 Final SE Chapter 23 - Concurrence

Folks, Please look at your sections of the attached Ch 23 and give me a recommendation for concurrence or give me comments/edits as soon as possible. This is a short turn around. Thanks. John

Henry, your section is not in yet.

Thanks.

John

From: Buckberg, Perry
Sent: Monday, March 21, 2011 8:39 AM
To: Donoghue, Joseph; Terao, David; McKirgan, John; Segala, John; Lee, Samuel; Jackson, Terry; Shams, Mohamed; Jenkins, Ronaldo; Kowal, Mark
Cc: Hsii, Yi-Hsiung; Budzynski, John; Honcharik, John; Makar, Gregory; Ray, Neil; Downey, Steven; McKenna, Eileen; VanWert, Christopher; Forsaty, Fred; Ford, Tanya; Wagage, Harry; Drozd, Andrzej; Stubbs, Angelo; Hernandez, Raul; Wheeler, Larry; Zhang, Deanna; Chopra, Om; Patel, Pravin; Le, Hien; Tjader, Theodore; Chapman, Travis
Subject: AP1000 Final SE Chapter 23 - Concurrence

Branch Chiefs,

Please review the attached marked-up version of Chapter 23 and concur/comment in reply by CoB **March 25, 2011**. The attached shows all of the changes made since the Advanced Final SE chapter was issued.

Both this marked-up version and a clean version of AP1000 Final Safety Evaluation (FSE) draft Chapter 6 has been placed in the [SharePoint](#) (link is below).

(b)(5)

Thanks,

Perry Buckberg

Senior Project Manager

Office of New Reactors

AP1000 Projects Branch

x1383 T-07E31

The SharePoint folder (Design Certification Review - AP1000 Design / Project Documents / All AP1000 DCA Documents / Tool 25 FSE Chapters) is:

<http://epm.nrc.gov/NRCPWA/Design%20Certification%20Review%20-%20Westinghouse%20AP1000/Project%20Documents/Forms/Default.aspx?RootFolder=%2fNRCPWA%2fDesign%20Certification%20Review%20%2d%20Westinghouse%20AP1000%2fProject%20Documents%2fAll%20AP1000%20DCA%20Documents%2fTool%2025%20%2d%20FSE%20Chapters&FolderCTID=&View=%7bDE1B422C%2dDFCA%2d4B68%2dA34D%2d2EF3460A463A%7d>

- **AP1000 SharePoint** - (Tool 25 - FSE Chapters)
 - Chapters for Concurrence – clean
 - Chapters for Concurrence – mark-ups

From: Jackson, Christopher
Sent: Wednesday, March 23, 2011 4:49 PM
To: Hsij, Yi-Hsiung
Subject: RE: AP1000 Final SE Chapter 6 - Concurrence

Thanks Gene,

It is interesting to note that the non-prop RAI response never mentioned the IFM and MVG. The prop version does mention these components but I can not imagine these would be proprietary.

CJ

From: Hsij, Yi-Hsiung
Sent: Wednesday, March 23, 2011 4:39 PM
To: Jackson, Christopher
Cc: McKirgan, John; Hayes(NRO), Michelle; Donoghue, Joseph
Subject: RE: AP1000 Final SE Chapter 6 - Concurrence

Chris,

Yes, it is OK except that "intermediate flow mixing" should be "intermediate flow mixer."

Gene

From: Jackson, Christopher
Sent: Wednesday, March 23, 2011 11:31 AM
To: Hsij, Yi-Hsiung
Cc: McKirgan, John; Hayes(NRO), Michelle
Subject: RE: AP1000 Final SE Chapter 6 - Concurrence

Thanks Gene –

Are you looking into the IFM and MVG comment?

CJ

From: Hsij, Yi-Hsiung
Sent: Wednesday, March 23, 2011 12:14 PM
To: Jackson, Christopher
Cc: McKirgan, John; Hayes(NRO), Michelle
Subject: RE: AP1000 Final SE Chapter 6 - Concurrence

Chris.

It was an unit conversion error. "3.0 kg (6 lb)" should be "2.73 kg (6 lb)."

Gene

From: Jackson, Christopher
Sent: Wednesday, March 23, 2011 6:28 AM
To: Hsij, Yi-Hsiung; McKirgan, John; Hayes(NRO), Michelle
Subject: FW: AP1000 Final SE Chapter 6 - Concurrence

Gene,

Can you take a look at this sentence? It was in the ISL mark-up Can you confirm it is OK?

CJ

(b)(5)

From: McKirgan, John
Sent: Monday, March 21, 2011 8:29 PM
To: Jackson, Christopher; Grady, Anne-Marie
Subject: FW: AP1000 Final SE Chapter 6 - Concurrence

Chris, Anne-Marie.

Can you please review this SE and give me a recommendation for concurrence by 3/25?

PS Michelle has agreed to look at her stuff.

Thanks,

John

From: Buckberg, Perry
Sent: Friday, March 18, 2011 11:21 AM
To: Donoghue, Joseph; Terao, David; McKirgan, John
Cc: Hsij, Yi-Hsiung; Budzynski, John; Honcharik, John; Makar, Gregory; Ray, Neil; Downey, Steven; McKenna, Eileen; VanWert, Christopher; Forsaty, Fred; Ford, Tanya; Wagage, Henry; Drozd, Andrzej
Subject: AP1000 Final SE Chapter 6 - Concurrence

Branch Chiefs,

Please review the attached marked-up version of Chapter 6 and concur/comment in reply by CoB **March 25, 2011**. The attached shows all of the changes made since the Advanced Final SE chapter was issued. In addition, please see the tech editor's [specific comments/questions](#) 1 thru 6 below and address separately in an e-mail to me only if needed.

Both this marked-up version and a clean version of AP1000 Final Safety Evaluation (FSE) draft Chapter 6 has been placed in the [SharePoint](#) (link is below).

(b)(5)

Thanks,

Perry Buckberg

Senior Project Manager

Office of New Reactors

AP1000 Projects Branch

x1383 T-07E31

Specific Comments/Questions

1)

2)

(b)(5)

3)

Please confirm the revised statement conveys the authors intent. The proposed edits add the language used in the RAI response.

4)

5)

(b)(5)

6)

Please verify this revision conveys the authors intent. CFRA is not defined in the technical specifications or DCD Section 6.4.

The SharePoint folder (Design Certification Review - AP1000 Design / Project Documents / All AP1000 DCA Documents / Tool 25 FSE Chapters) is:

<http://epm.nrc.gov/NRCPWA/Design%20Certification%20Review%20-%20Westinghouse%20AP1000/Project%20Documents/Forms/Default.aspx?RootFolder=%2fNRCPWA%2fDesign%20Certification%20Review%20%2d%20Westinghouse%20AP1000%2fProject%20Documents%2fAll%20AP1000%20DCA%20Documents%2fTool%2025%20%2d%20FSE%20Chapters&FolderCTID=&View=%7bDE1B422C%2dDFCA%2d4B68%2dA34D%2d2EF3460A463A%7d>

- **AP1000 SharePoint** - (Tool 25 - FSE Chapters)
 - Chapters for Concurrence – clean
 - Chapters for Concurrence – mark-ups

From: Conly, John
To: Aitken, Diane; Barrie, Ashley; Bell, Russ; Bird, Bobby; Borsh, Gina; Buschbaum, Denny; Bywater, Russell; Caldwell, Jan; Carver, Ronald; Certrec, Ciocco, Jeff; Clouser, Tim; Collins, Elmo; Conly, John; Cosentino, Carolyn; Degeyter, Brock; Evans, Todd; Flores, Rafael; Frantz, Steve; Freitag, Al; Hamzehee, Hossein; Hoshi, Masaya; Ishida, Mutsumi; Johnson, Michael; Kawanago, Shinji; Keithline, Kimberley; Kellenberger, Nick; Koenig, Allan; Kramer, John; Lucas, Mitch; Madden, Fred; Matthews, David; Matthews, Tim; McConaghy, Bill; Monarque, Stephen; Moore, Bill; ComanchePeakCOL Resource; Onozuka, Masanori; Paulson, Keith; Plisco, Loren; Reible, Robert; Rund, Jon; Simmons, Jeff; Singal, Balwant; Sirirat, Nan; Sprengel, Ryan; Takacs, Michael; Tapia, Joe; Tindell, Brian; Turner, Bruce; Volkening, David; Vrahoretis, Susan; Williamson, Alicia; Willingham, Michael; Woodlan, Don
Cc: Hill, Craig
Subject: Submittal to the NRC
Date: Wednesday, March 23, 2011 4:00:46 PM
Attachments: TXNB-11017 RAI 183 Supp.pdf

Luminant has submitted the attached letter to the NRC providing supplemental information for RAI No. 5117 (CP RAI #183) on station blackout procedures. If there are any questions regarding this submittal, please contact me or contact Don Woodlan (254-897-6887, Donald.Woodlan@luminant.com).

Thanks,

John J. Conly

COLA Project Manager
(254) 897-5256

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al_freitag@mnes-us.com
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kak@nei.org
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regina.borsh@dom.com
diane.aitken@dom.com

SUPPLEMENTAL RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

Comanche Peak, Units 3 and 4

Luminant Generation Company LLC

Docket Nos. 52-034 and 52-035

RAI NO.: 5117 (CP RAI #183)

SRP SECTION: 08.04 – Station Blackout

QUESTIONS for Electrical Engineering Branch (EEB)

DATE OF RAI ISSUE: 10/19/2010

QUESTION NO.: 08.04-1

The regulatory basis for this question is discussed in NUREG-0800, Standard Review Plan (SRP), Section 8.4 and Regulatory Guide 1.155.

The US-APWR DCD, Tier 2, Section 8.4.2.2, "Conformance with Regulatory Guidance," states that the applicant's conformance with Position C.3.4 of Regulatory Guide 1.155, "Station Blackout," would be demonstrated by providing procedures and training to cope with Station Blackout (SBO). US-APWR DCD, FSAR Section 13.5, "Plant Procedures," explains that the development of administrative and operating procedures to be used by the operating organization (plant staff) is designated as the responsibility of the COL Applicant. Therefore, a COL applicant referencing the US-APWR design is responsible for SBO procedures, which include (1) Station Blackout Response Guidelines, (2) AC Power restoration Guidelines and (3) Severe Weather Guidelines. Confirm whether these procedures and training are addressed in the COL, Part 2, FSAR with references to the DCD FSAR description. If these procedures are not addressed in the COL FSAR, provide the procedures and revise the FSAR to reflect the addition of these procedures.

SUPPLEMENTAL INFORMATION:

Although Luminant's response to this question stated that additional revision of the FSAR is not required, based on a subsequent teleconference with the NRC, Luminant has revised FSAR Section 8.4 to refer to Subsection 13.5.2.1.

Impact on R-COLA

See attached marked FSAR Revision 1 page 8.4-1

Impact on S-COLA

None; this response is site-specific.

Impact on DCD

None.

Comanche Peak Nuclear Power Plant, Units 3 & 4
COL Application
Part 2, FSAR

8.4 STATION BLACKOUT

This section of the referenced DCD is incorporated by reference with ~~no~~the following departures and/or supplements.

RCOL2_08.0
4-1 S01

CP SUP 8.4(1) Add the following text after the ninth paragraph of DCD Subsection 8.4.2.2.

The procedures to cope with SBO are addressed in Section 13.5 and the training is addressed in Section 13.2. In particular, although not specifically referenced, SBO procedures are discussed in FSAR Subsection 13.5.2.1. This subsection addresses Operating and Emergency Operating Procedures as well as the Procedure Generation Package. The Station Blackout Response Guideline, the AC Power Restoration Guideline, and a Severe Weather Guideline are covered by the discussions in FSAR 13.5.2.1.

From: Karas, Rebecca on behalf of Coffin, Stephanie
To: Flanders, Scott; Cook, Christopher; Karas, Rebecca; NRO_Division_Directors; NRO_Deputy_Division_Directors; Kokaiko, Lawrence; Mohseni, Aby; Davis, Jack; Norato, Michael; Ray, Neil; DeMarco, Deborah; Zaki, Tarek; Scott, Michael; Elkins, Scott; Gibson, Kathy; Jackson, Rolonda; Coffin, Stephanie
Cc: Akstulewicz, Frank; Matthews, David; Schum, Constance; Donoghue, Joseph
Subject: FW: Center For Nuclear Waste Regulatory Analysis (CENTER) Presentation to NRO Regarding Providing Technical Assistance in the Advanced Reactor program.

When: Thursday, March 24, 2011 1:30 PM-2:30 PM (GMT-05:00) Eastern Time (US & Canada).
Where: TWFN-T7A01

Note: The GMT offset above does not reflect daylight saving time adjustments.

~~*~*~*~*~*~*~*~*

Nilesh and I talked. Stephanie called and said someone senior from DSER really needs to go to this. I can discuss with you. Cliff is WAH that day, and Nilesh is out.

-----Original Appointment-----

From: Coffin, Stephanie
Sent: Wednesday, March 23, 2011 10:26 AM
To: Coffin, Stephanie; Karas, Rebecca; NRO_Division_Directors; NRO_Deputy_Division_Directors; Kokaiko, Lawrence; Mohseni, Aby; Davis, Jack; Norato, Michael; Ray, Neil; DeMarco, Deborah; Zaki, Tarek; Scott, Michael; Elkins, Scott; Gibson, Kathy; Jackson, Rolonda; Coffin, Stephanie
Cc: Akstulewicz, Frank; Matthews, David; Schum, Constance; Donoghue, Joseph
Subject: FW: Center For Nuclear Waste Regulatory Analysis (CENTER) Presentation to NRO Regarding Providing Technical Assistance in the Advanced Reactor program.
When: Thursday, March 24, 2011 1:30 PM-2:30 PM (GMT-05:00) Eastern Time (US & Canada).
Where: TWFN-T7A01

POP

Purpose: Discuss NRO's technical assistance requirements in the Advanced Reactor program area. Center manager's will provide information on capabilities/skills/disciplines available to NRC to support the NRO staff.

Outcome: Mutual understanding of the NRO's needs and possible Center assistance in supporting NRO. Discuss path forward (e.g., visit to SwRI/Center by NRO technical staff and manager's possible laboratory tours).

Process: Brief discussion of NRO's needs and Center's capabilities/disciplines available. NRO question and answer session.

From: [Akstulewicz, Frank](#)
To: [NRO Deputy Division Directors](#); [NRO Division Directors](#); [Holahan, Gary](#); [Johnson, Michael](#)
Subject: brainstorming for Session 3
Date: Thursday, March 24, 2011 1:19:40 PM
Attachments: [Session 3 - SES retreat - march 30.pptx](#)

Mike Mayfield and I have concluded that it would be difficult to do extensive preplanning for a session that is heavily dependent on the outcome of the session before. However, not to be deterred by the near impossible, we have taken a shot at an outline that could be followed to document the next logical steps to communicate to a wide range of audiences the outcomes and timelines resulting from Session 2

We would appreciate any and all comments on our outlined strategy.

Session 3

Communication of decisions and followup actions

Objective

- The objective of this session is to define:
 - Key messages
 - The audience
 - The owners
 - The timeline

Key Messages

- Depending on the outcomes achieved in Session 2, it will be necessary to develop the key messages that are to be communicated around or about those outcomes.
- Message 1:
- Message 2:
- Message 3:

The Audience

- Who are the persons, stakeholders or interested groups (both internal and external) that should be informed?
- Internal entities -
- External entities -

The responsible spokespersons

- The spokespersons will be dependent on the list of parties notified in the slide before. Broadly we can discuss them as internal and external
- Internal parties -
- External parties -

Timeline

Communication must be timely to be effective. In essence we have developed a mini communication plan with the completion of this activity

We will need to construct a separate timeline for each party

How will we communicate?

Will we use verbal, or nonverbal or both?

Internal parties –

External parties -

From: [Snyder, Amy](#)
To: [Lauron, Carolyn](#); [Akstulewicz, Frank](#)
Cc: [Flanders, Scott](#); [Dent, Kimberly](#)
Subject: RE: *Pending* Additional DSER Comments on Chairman's Monthly
Date: Thursday, March 24, 2011 9:07:24 AM

Thank you.
Much appreciated. ☺
Amy

Amy M. Snyder
Technical Assistant for Licensing Operations
Office of New Reactors
Division of New Reactor Licensing
T6F24
M.S. T6C20M



(301) 415-6822 FAX:301 415-6640
amy.snyder@nrc.gov

From: Lauron, Carolyn
Sent: Thursday, March 24, 2011 9:01 AM
To: Snyder, Amy; Akstulewicz, Frank
Cc: Flanders, Scott; Dent, Kimberly
Subject: *Pending* Additional DSER Comments on Chairman's Monthly

Hi –

Scott just called and he has comments on the monthly report. As soon as I get them from him, I'll contact Amy.

Thanks,
Carolyn
2736

From: [Snyder, Amy](#)
To: [Hatchett, Gregory](#); [Cruz, Jeffrey](#)
Cc: [Lauron, Carolyn](#); [Joshi, Ravindra](#); [Sutton, Mallecia](#); [Akstulewicz, Frank](#); [Flanders, Scott](#)
Subject: RE: ACTION: Please provide additional information for the Vogtle input to the Semiannual Report to Congress- as soon as possible.
Date: Thursday, March 24, 2011 9:44:34 AM

Thank you.
Appreciate you.
Amy

Amy M. Snyder
Technical Assistant for Licensing Operations
Office of New Reactors
Division of New Reactor Licensing
T6F24
M.S. T6C20M



(301) 415-6822 FAX:301 415-6640
amy.snyder@nrc.gov

From: Hatchett, Gregory
Sent: Thursday, March 24, 2011 9:43 AM
To: Snyder, Amy; Cruz, Jeffrey
Cc: Lauron, Carolyn; Joshi, Ravindra; Sutton, Mallecia; Akstulewicz, Frank; Flanders, Scott
Subject: RE: ACTION: Please provide additional information for the Vogtle input to the Semiannual Report to Congress- as soon as possible.

Amy,

Mallecia will provide you with the revised language for the FSEIS. The final impact statement will be published tomorrow in the *Federal Register* by the EPA and NRCs notice of availability, if not in the *Federal Register* today, it will be tomorrow.

Thanks,

Greg

From: Snyder, Amy
Sent: Thursday, March 24, 2011 9:38 AM
To: Cruz, Jeffrey; Hatchett, Gregory
Cc: Lauron, Carolyn; Joshi, Ravindra; Sutton, Mallecia; Akstulewicz, Frank
Subject: ACTION: Please provide additional information for the Vogtle input to the Semiannual Report to Congress- as soon as possible.
Importance: High

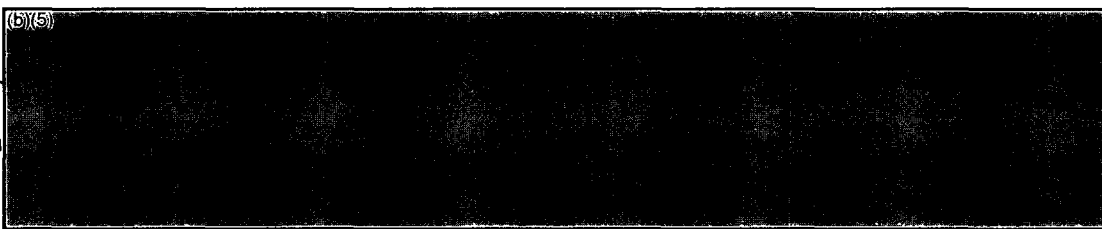
Vogtle COLA

On March 28, 2008, Southern Nuclear Operating Company (SNOC) submitted a COLA for two AP1000 units to be located at its Vogtle site near Augusta in Burke County, Georgia.


The initial application also referenced the Vogtle ESP application, Revision 5, dated December 23, 2008. The SER for an ESP application for the Vogtle site was issued by the NRC staff in February 2009. The ESP for the Vogtle site was issued on August 26, 2009. Since then, three amendments were issued (on May 21, 2010, June 25, 2010, and July 9, 2010) to the ESP Permit.

In a letter dated October 29, 2010 (ML102310362), the staff established a new schedule to rebaseline the review so that it will be consistent with the DCD schedule contained in the June 21, 2010, letter to Westinghouse. The NRC staff is scheduled to complete the FSER in June 2011.

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(b)(5)

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Thank you.
amy

Amy M. Snyder
Technical Assistant for Licensing Operations
Office of New Reactors
Division of New Reactor Licensing
T6F24
M.S. T6C20M



(301) 415-6822 FAX:301 415-6640
amy.snyder@nrc.gov

From: [Jones, Henry](#)
To: [Lynett, Patrick](#)
Cc: [Eric](#); [Raione, Richard](#); [Chokshi, Niles](#); [Flanders, Scott](#)
Subject: RE: DC + SIAM
Date: Thursday, March 24, 2011 10:50:00 AM

Pat.

Thanks for the effort. Perhaps another opportunity will arise in the near future.

Henry

From: Lynett, Patrick [<mailto:plynett@tamu.edu>]
Sent: Wednesday, March 23, 2011 11:25 AM
To: Eric
Cc: Jones, Henry
Subject: RE: DC + SIAM

Eric, Henry-

No, I never made it into DC last week unfortunately. Jim P (long last name – he is at the NRC) emailed me to call him, but we somehow never managed to connect over the course of a day and a half. He was out of the office and my cell signal wasn't that good. He was supposed to give me the contact person and place.... Anyhow, I showed up at the front gate of DC without any contact info, and they turned me around and showed me the way back out. Oh well – but thanks for trying to set it up – always tough on short notice but last week was particularly tough.

Pat

Patrick J. Lynett
Associate Professor
<http://ceprofs.civil.tamu.edu/plynett>

From: Eric [<mailto:egeist@usgs.gov>]
Sent: Wednesday, March 23, 2011 10:15 AM
To: Lynett, Patrick
Subject: DC + SIAM

Dear Pat,

Henry was asking about your Diablo Canyon visit below. I'm at the SIAM Geosciences meeting this week -- nice citation of your past work in some of the CFD talks...Eric

Begin forwarded message:

From: "Jones, Henry" <Henry.Jones@nrc.gov>
Date: March 22, 2011 11:17:31 AM PDT
To: Eric <egeist@usgs.gov>

Subject: RE: Yesterday's presentaion

Last week, I provided some anticipated answers for a televised NRC meeting of our Chief of Staff and Commissioners. The big presentation is tomorrow afternoon. I finally figured out how to make the animations work in PowerPoint and now I am go to go :)

Thanks again to USGS for your support. The animations and maps are excellent!

By the way, any word from Pat regarding Diablo Canyon?

Henry

-----Original Message-----

From: Eric [mailto:egeist@usgs.gov]

Sent: Tuesday, March 22, 2011 12:57 PM

To: Jones, Henry

Subject: Yesterday's presentaion

Dear Henry,

Just curious -- how did yesterday's presentation go? ...Eric

From: Flanders, Scott
To: Chokshi, Niles; Jones, Henry; Seber, Dogan; Wang, Weijun
Cc: Raione, Richard; Cook, Christopher; Karas, Rebecca
Subject: RE: Kudos
Date: Thursday, March 24, 2011 12:00:00 PM

Yes, a tremendous by all three of you. I heard very positive feedback from several people.

Scott

From: Chokshi, Niles
Sent: Wednesday, March 23, 2011 4:58 PM
To: Jones, Henry; Seber, Dogan; Wang, Weijun
Cc: Flanders, Scott; Raione, Richard; Cook, Christopher; Karas, Rebecca
Subject: Kudos

Great presentations! I have already received requests to have your presentations available to other staff members. Let's think about how we do that, given we have some plant-specific information.

From: [Flanders, Scott](#)
To: [Akstulewicz, Frank](#)
Cc: [Lauron, Carolyn](#); [Snyder, Amy](#)
Subject: RE: monthly report
Date: Thursday, March 24, 2011 11:42:00 AM

I just provided my comments to Carolyn. I had several comments that I feel must be incorporated. We can discuss.

Scott

From: Akstulewicz, Frank
Sent: Wednesday, March 23, 2011 4:15 PM
To: Flanders, Scott
Subject: monthly report

Scott

We have the final version of the March monthly report ready to go to Michael. Needs to be there tomorrow. Are we waiting for input from DSER or can we send on.

From: RobinsonII, Richard on behalf of Coffin, Stephanie
To: NRO Division Directors; NRO Deputy Division Directors; Kokaiko, Lawrence; Mohseni, Aby; Davis, Jack; Norato, Michael; Ray, Neil; DeMarco, Deborah; Zaki, Tarek; Scott, Michael; Elkins, Scott; Gibson, Kathy; Jackson, Rolonda; Coffin, Stephanie; Karas, Rebecca
Cc: Akstulewicz, Frank; Matthews, David; Schum, Constance; Donoghue, Joseph; Flanders, Scott; Cook, Christopher; Roach, Edward; Junge, Michael; Budhi Sagar; Wesley Patrick; Todd Mintz; John Stamatkos; Gordon Wittmeyer; Sitakanta Mohanty; Patrick Mackin; Magruder, Stewart; Reckley, William
Subject: Center For Nuclear Waste Regulatory Analysis (CENTER) Presentation to NRO Regarding Providing Technical Assistance in the Advanced Reactor program.
Attachments: CNWRA Presentation 3-24-11 Rev 1 (2).pdf

When: Thursday, March 24, 2011 1:30 PM-2:30 PM (GMT-05:00) Eastern Time (US & Canada).
Where: TWFN-T7A01

Note: The GMT offset above does not reflect daylight saving time adjustments.

~~*~*~*~*~*~*~*~*

Please see the attached presentation slides for this afternoon's meeting

When: Thursday, March 24, 2011 1:30 PM-2:30 PM (GMT-05:00) Eastern Time (US & Canada).
Where: NRO - TWFN - 07A-01

Note: The GMT offset above does not reflect daylight saving time adjustments.

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POP

Purpose: Discuss NRO's technical assistance requirements in the Advanced Reactor program area. Center manager's will provide information on capabilities/skills/disciplines available to NRC to support the NRO staff.

Outcome: Mutual understanding of the NRO's needs and possible Center assistance in supporting NRO. Discuss path forward (e.g., visit to SwRI/Center by NRO technical staff and manager's possible laboratory tours).

Process: Brief discussion of NRO's needs and Center's capabilities/disciplines available. NRO question and answer session.

**Center for Nuclear Waste Regulatory Analyses
Support to the U.S. Nuclear Regulatory Commission
Office of New Reactors**

Licensing of Integral Pressurized Water Reactors

March 24, 2011



Southwest Research Institute

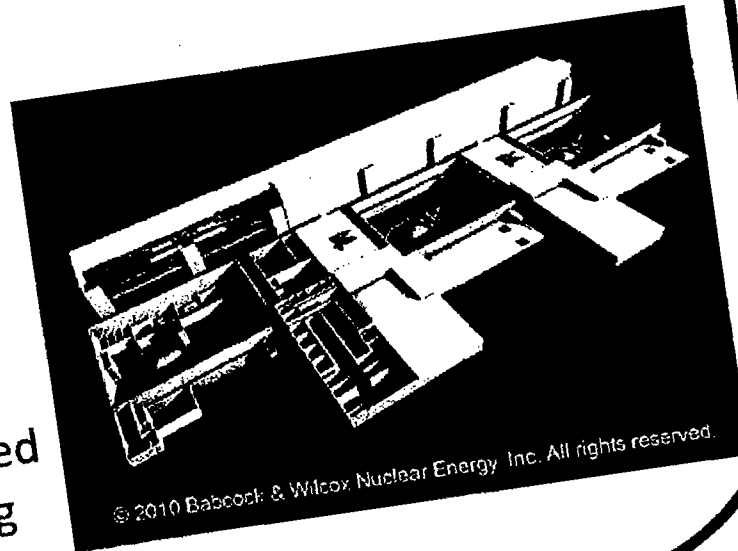
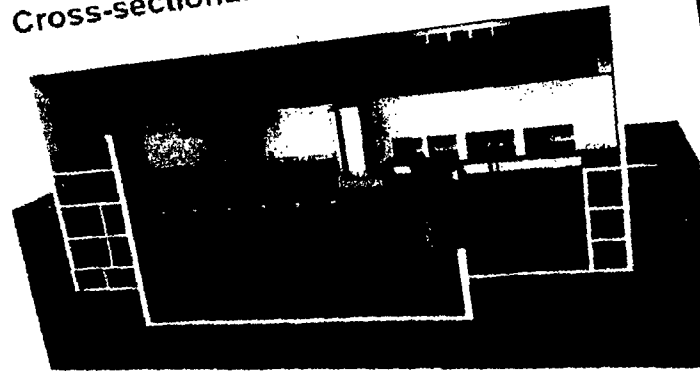
Presentation Overview

- Source documents
 - RIS 2011-02
 - SECY-10-0034
 - NUREG-0800 Sections
 - 10 CFR Part 52
 - 10 CFR Part 50
- Areas of focus
 - Aircraft impact (slides 3–5)
 - Fire events (slides 6–8)
 - Flooding/water infiltration (slides 9–11)
 - Seismic analysis (slides 12–14)
 - Structural analysis (slides 15–17)
 - Nondestructive evaluation (slides 18–20)

Potential Issues Aircraft Impact Analysis

- Reactors and subsystems below grade presents unique challenges
 - Lower profile would reduce impact frequency
 - Structural effects of impact different than traditional NPPs (i.e., impact angle)
 - If impact occurs near structure, need to assess the force-load transfer from ground impact to structure
- Smaller radionuclide inventory per reactor basis, but a potential for more reactors in a small footprint
- NuScale: water filled reactor pool is shared between reactors with bioshield covering and spent fuel pool in same structure

Cross-sectional view of 6 modules

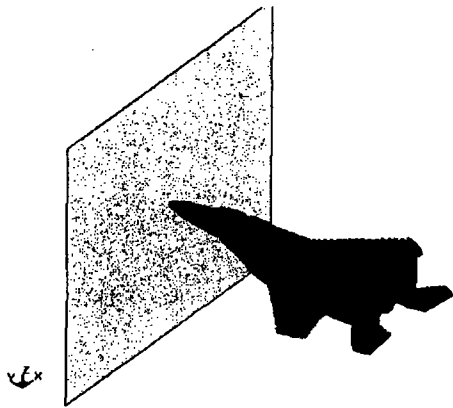


Approaches to Evaluating Potential Aircraft Crash Impacts

- U.S. Nuclear Regulatory Commission (NRC) regulations require safety review of nuclear facilities license applications for aircraft crash hazards
- Perform review to ensure applications meets 10 CFR 52.47 and applicable 10 CFR 50.150 requirements
- Analyze
 - Impact and displacement of bioshield and water in reactor cooling pool
 - Potential for jet fuel to enter reactor cooling pool and affect intended functions
 - Possible structural damage to facility from nearby ground impact
 - Potential for loss of all onsite power (station blackout)

Experience and Expertise

- Assessed aircraft crash frequency and developed safety evaluation report for Yucca Mountain, ISFSIs (Private Fuel Storage, Diablo Canyon, Humboldt Bay, Idaho Spent Fuel), Pa'ina Hawaii Irradiator Facility
- Developed finite element models of aircraft impact on concrete structures in support of Yucca Mountain license application review



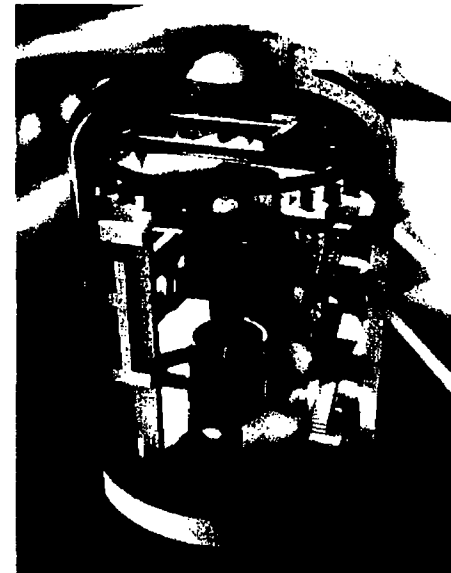
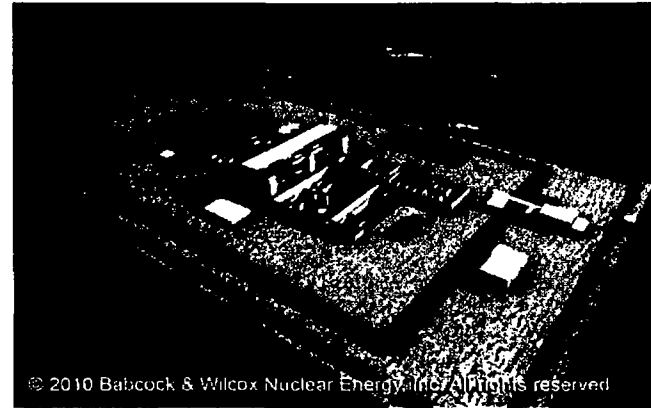
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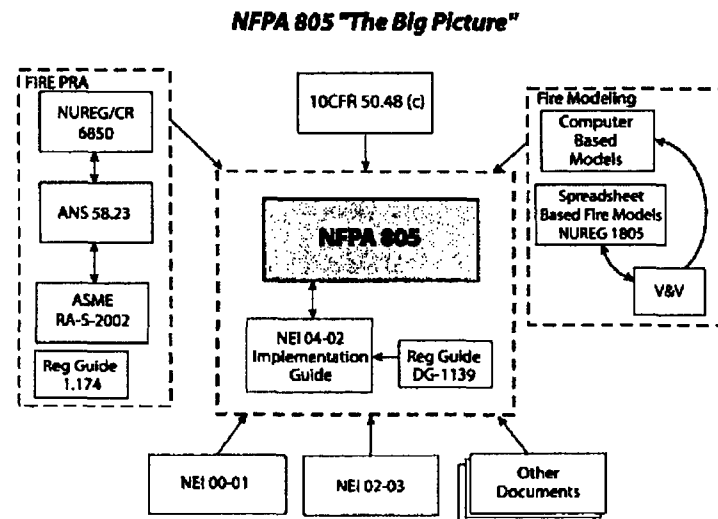
Potential Fire and Explosion Hazards

- Facility below-grade presents unique challenges
 - Smoke/fire behavior
 - Providing life safety
 - Design and operation of HVAC system
 - Removal of waste water
- Facility may be in remote location
 - Need to consider forest fires
 - Adequacy of water and resources needed for fire protection
 - Onsite personnel versus offsite emergency first responders
- NuScale:
 - Connected spent fuel pool and containment cooling pool
- New standard NFPA-805 departs from deterministic models and relies on probabilistic risk assessment (PRA)



Approaches to Address Potential Fire and Explosion Hazards

- Reviews based on RG 1.189
 - 10 CFR 50.48(a)(4) - description and analysis of the fire protection design features
 - NFPA 805 approach requires expertise in fire analysis, general probabilistic risk assessment and plant systems analysis, human reliability analysis (HRA), and electrical analysis



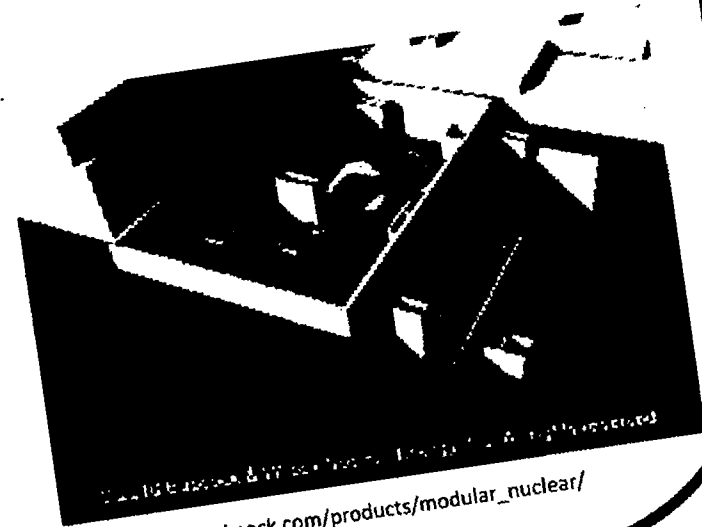
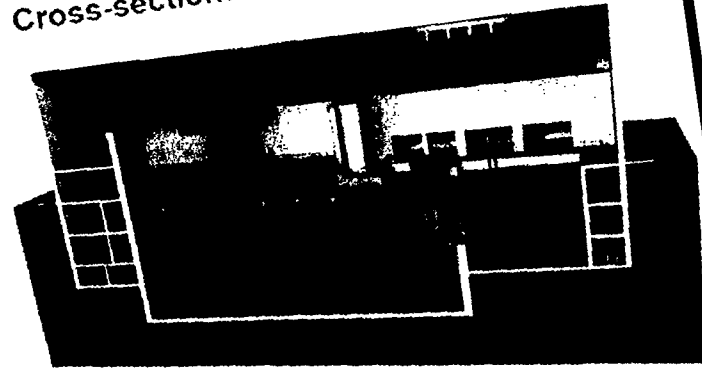
Experience and Expertise

- Provided expertise to support NRC licensing reviews
 - Yucca Mountain Repository, Nevada; Diablo Canyon ISFSI, California; Idaho Spent Fuel Facility, Idaho; Humboldt Bay ISFSI, California
 - Private Fuel Storage Facility, Utah; effects of propane tank release including vapor cloud explosions and Wild fire/ range fire assessment (ignition frequency and damage potential assessment)
- Performed independent fire analysis to support SFST on identifying risk of transportation of spent nuclear fuel
 - Effects of diesel pool fire (locomotive; tanker truck)
 - Analyzed road and rail accidents to identify frequency of severe accidents

Potential Flooding Hazards

- Reactors and subsystems below grade
 - Hurricane storm surge
 - Tsunami runup
 - Water infiltration into structure
- NuScale:
 - Water displacement of bioshield or near-neutrally buoyant reactor vessel
 - Control room is below grade
 - Water infiltration could contaminate reactor cooling pool water (also introduce debris)

Cross-sectional view of 6 modules



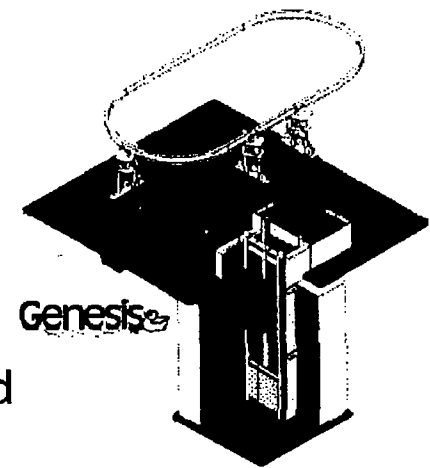
http://www.babcock.com/products/modular_nuclear/

Approaches to Evaluating Flooding Hazards

- Application reviews based on RG 1.59 and SRP Section 2.4.2
- Examine both most severe and less severe flood conditions
 - Both static and dynamic conditions
 - Consistent with the initiating event consistent with 10 CFR Part 100 Appendix A
- Evaluate how various probable maximum flood levels would affect safety-related structures, systems, and components
 - Forces required to displace bioshield, reactor vessel
 - Debris deposition
 - Model water ingress of substructures
- Examine any proposed drainage systems, including grading to drain local intense precipitation away from safety-related structures, systems, and components

Experience and Expertise

- Assessed flooding analyses and developed safety evaluation report for MOX Construction Authorizations Request National Enrichment Facility, AREVA Eagle Rock Enrichment Facility, Private Fuel Storage Facility, GE Hitachi Global Laser Enrichment Facility
- Developed independent site-scale groundwater flow and transport models for Yucca Mountain region
- Reviewed license application for Pa'ina irradiator and performed independent analysis to consider tsunami and hurricane flooding
- Developed methodology for simulating landslide generated tsunami for application in risk mitigation and hazard management



Seismic and Faulting Hazards

- Facilities may be located in more diverse geological settings with high seismic hazard
 - Charleston
 - Eastern Tennessee
 - New Madrid
 - Intermountain west
 - San Andreas/Cascadia
 - Alaska
- Below grade facilities presents unique challenges
 - Site response different than above ground structures
 - Liquefaction and direct fault disruption hazards may be enhanced
- Complex soil-structure interactions



Approaches to Evaluating Seismic and Faulting Hazards

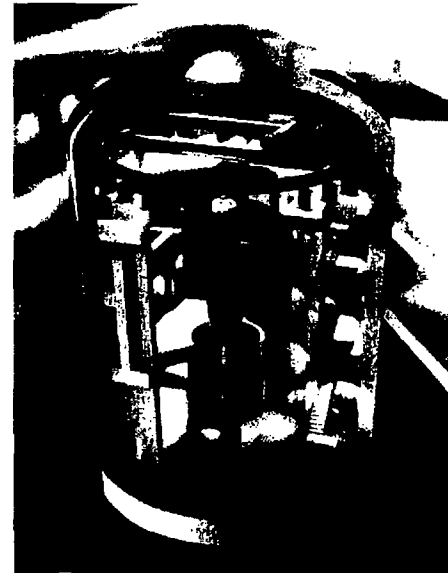
- Site reviews based on RG 1.208
 - Site-specific or regional seismic investigations
 - Seismic source characterization
 - Probabilistic seismic hazard assessment (PSHA)
 - Deaggregation of mean PSHA Hazard for controlling earthquakes and distances
 - Ground motion attenuation (far field and site response)
 - Site-specific ground motion response spectra consistent with 10 CFR Part 100.23
 - Development of SSE consistent with Appendix S of 10 CFR Part 50
 - Evaluation of potential for direct fault displacement, including methods in NUREG/CR-5562, Regulatory Guide 1.132, and NUREG/CR-5503
 - Evaluate liquefaction potential per RG 1.198
- Additional sensitivity studies to assess uncertainty in PSHA and site response, if needed

Experience and Expertise

- Provided NRC with safety analysis for facilities across the U.S. including high seismic areas (Savannah River, Paducah, Yucca Mountain, Skull Valley, Diablo Canyon, and Humboldt Bay)
- Developed staff guidance to conduct seismic margin analysis assessment for Yucca Mountain review (HLWRS-ISG-01)
- Developed and implemented tools to conduct a review of the Yucca Mountain seismic event sequence analyses
- Reanalyzed slope stability for all uranium tailings piles under new earthquake ground motion conditions for the Western US
- Conducted independent studies of seismic source characteristics in support of ASLB hearings
 - Detailed review of paleoliquefaction data at Savannah to assess alternative recurrence models for the Charlestown earthquake
 - Alternative fault source models for private fuel storage site at Skull Valley, Utah
 - Assessment of GPS strain-rate data on Yucca Mountain PSHA

Potential Structural Analysis Issues for iPWRs

- Below grade facility presents unique challenges
 - Dynamic soil-structure interaction of below grade shear wall and foundation system
 - Seismic stability of the media surrounding the structure
- NuScale:
 - Reaction of neutrally buoyant reactor/containment vessel
 - Seismic restraints and dampening

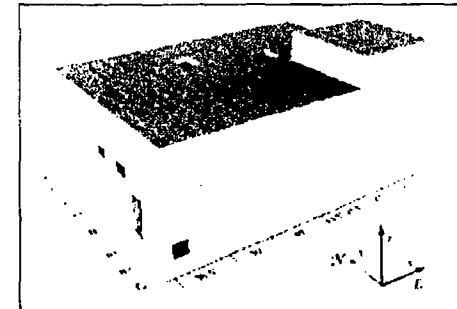


Approaches to Structural Analysis

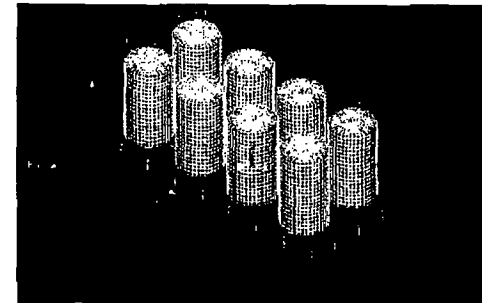
- Detailed safety evaluation of structural components per NRC Regulatory Guides 1.94 and 1.216 and NUREG-0800 chapter 3
- 3-D dynamic soil-structure interaction
 - LS-DYNA 960, SASSI, SAP2000
- 3-D dynamic analysis of the interaction of the structure and seismic dampening system
- Support on-site inspections in areas of expertise (e.g., reinforced concrete columns, shear walls, steel columns, and foundations)

Experience and Expertise

- Assessed structural analyses and developed safety evaluation report for the Louisiana Energy Services National Enrichment Facility, American Centrifuge, International Isotopes, and the MOX Fuel Fabrication Facility, Yucca Mountain
- Supported ISFSI licensing providing 3-D independent assessment of SSI for cask fuel storage to show cask remained upright (ABAQUS)
- Evaluated potential for direct fault disruption and safe set-back distances for Yucca Mountain



Soil-Structure Interaction SASSI model for Canister Transfer Building



Soil-Structure Interaction Model for Cask Fuel Storage Design Tested for Design-Basis Earthquake

Potential Issues for Nondestructive Evaluation of iPWRs

- Limited access to pressure vessel and components (physical/radiation)
 - Welds, steam generator, bolted connections, CRD mechanisms, and valves
- Greater reliance on containment barriers
 - Higher performance of containment welds
 - Greater reliance on flanged connections in the primary pressure boundary
- NuScale:
 - Containment is completely under water
 - Normal and accident condition operation depends highly on proper operation of valves around the RPV
 - 73.2 ft. of tubing in helical steam generator (≈ 1000 tubes), internal to reactor vessel, tubes in compression instead of tension
- mPower:
 - Decreased inspection opportunity due to extended refueling period
 - Active components (pumps) inside reactor vessel

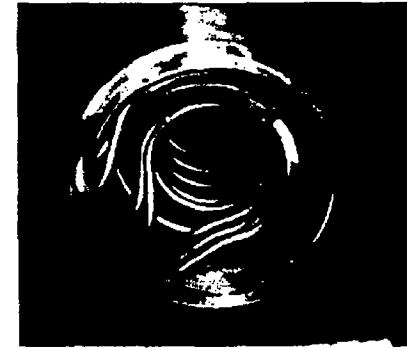


Approach to Evaluating Issues with Nondestructive Evaluation

- Ensuring Multiple Fission Barrier Integrity
 - RPV weld inspection likely similar to existing boiling water reactor plants
 - Ensure designs provide sufficient access to all components requiring in-service inspection as part of the licensing process
 - Assess radiation environment of components requiring inspection (i.e., can all inspections be done with components away from fuel?)
 - Evaluate frequency and requirements for periodic inspection of containment welds and bolting systems
 - Establish inspection requirements and techniques for RPV valves (NuScale)
 - Confirm performance of NDE systems for helical steam generator (NuScale)

Experience and Expertise

- Experience with nuclear power plant inspection techniques based on work on license renewal applications (NRR/DLR)
- Performed materials and corrosion testing to support design certification of fuel repository systems
- Materials development and evaluation experience
- Experience with monitoring probes and sensors that are applicable to modern reactor designs



Summary and Conclusions

- Extensive experience conducting safety evaluations on a broad range of nuclear facilities for the U.S. NRC
- More than two decades of regulatory experience
- Long-term, experienced technical staff
 - Wide range of technical expertise
 - Multi-discipline approach
- Worked within the project management structure and management procedures, including work in collaborative teams, used by the U.S. NRC to conduct licensing reviews
- Independent and free from conflict of interest

Backup Slides

Introduction to Southwest Research Institute



- Private, non-profit applied research and development organization
- Headquarters in San Antonio, TX
- 1,200 acre research grounds
- Organized in 12 operating divisions
- Expertise in essentially every area of engineering and physical sciences
- Nearly 2 million square feet of laboratories, test facilities, and offices
- Aerospace Electronics and Information Technology
- Applied Physics
- Applied Power
- Automation and Data Systems
- Chemistry and Chemical Engineering
- Engine, Emissions and Vehicle Research
- Fuels and Lubricants Research
- Geosciences and Engineering
- Mechanical Engineering
- Signal Exploitation and Geolocation
- Space Science and Engineering
- Training, Simulation, and Performance Improvement

Introduction to CNWRA

- Fall 1987: CNWRA established as a federally funded research and development center at SwRI, Supporting the NRC Commission
- 1992: CNWRA charter opened to pursue work for clients outside NRC
- 2005: CNWRA reorganized as a department within the Geosciences and Engineering (GED) Division
- Organization
 - Matrix management
 - Integrated across disciplines to effectively solve client problems

Primary Areas of Technical Expertise

- Civil Engineering
- Computer Sciences
- Fire analysis and fire protection engineering
- Geochemistry / Radiochemistry
- Geological Engineering
- Geophysics
- Health Physics
- Hydrology / Climatology
- Material Sciences and Corrosion
- Mechanical Engineering
- Mining Engineering
- Nuclear Engineering
- Performance and Risk Assessment
- Quality Assurance
- Rock Mechanics
- Structural engineering
- Structural Geology
- Volcanology

Current Scope of Activities

- A Federally Funded Research and Development Center; chartered to support NRC Nuclear Waste Policy Act activities
 - Full-service support to the High-Level Waste Repository Safety Program
 - Safety reviews and analyses in interim storage and transportation
 - Non-HLW determinations
- A source of technical assistance to NRC outside the CNWRA charter
 - Reactor licensing renewals
 - Sourced for NFPA-805 (work expected beginning summer 2011)
 - Environmental evaluations
 - Uranium recovery and processing
 - Decommissioning of nuclear materials facilities
 - Fuel cycle facilities; licensing reviews and integrated safety analyses
- A source of technical assistance for International Radioactive Waste Management Programs

Structural Analysis

- MOX Fuel Fabrication Facility
 - Assessment of disposition of engineering change requests (ECR), nonconformance reports (NCR), and condition reports (CR) on as-built design of reinforced concrete columns, shear walls, and foundations
 - Pre-inspection record review, on-site record review, licensee interview, plant walk-down, and input to inspection report
 - Findings on adequacy of disposition on reinforced concrete columns and shear walls, and partial use of controlled low strength material as foundation backfill of BMP, BAP, and BSR
 - Identification of noncompliance with NRC approved design, codes, and standards
 - Identification of inspection follow-up item (e.g., need for assessment of cumulating effects arising out of disposition of numerous ECRs, NCRs, and CRs)

Structural Analysis (continued)

- Louisiana Energy Services National Enrichment Facility
 - Assessment of disposition of engineering change requests (ECR), nonconformance reports (NCR), and request for information (RFI) on as-built design of reinforced concrete shear walls and slabs, steel columns, and foundations
 - Selection of ECR, NCR, and RFI related to as-built design of structures and foundations where significant changes exist between license application design and the as-built design
 - Pre-inspection record review, on-site record review, licensee interview, plant walk-down and remedial action confirmation, reinforcement placement and concrete pouring inspection, and input to inspection report
 - Findings on adequacy of disposition of reinforced concrete structural members, steel structural members, and footings of Separation Building Module (SBM) 1001 and Cylinder Receipt and Dispatch Building (CRDB) 1100
 - Design office record review for technical basis for license amendment request
 - Identification of Inspection Follow-up Item (IFI) (e.g., need for assessment of settlement and soil-structure interaction analysis)

Structural and Geotechnical Capabilities (continued)

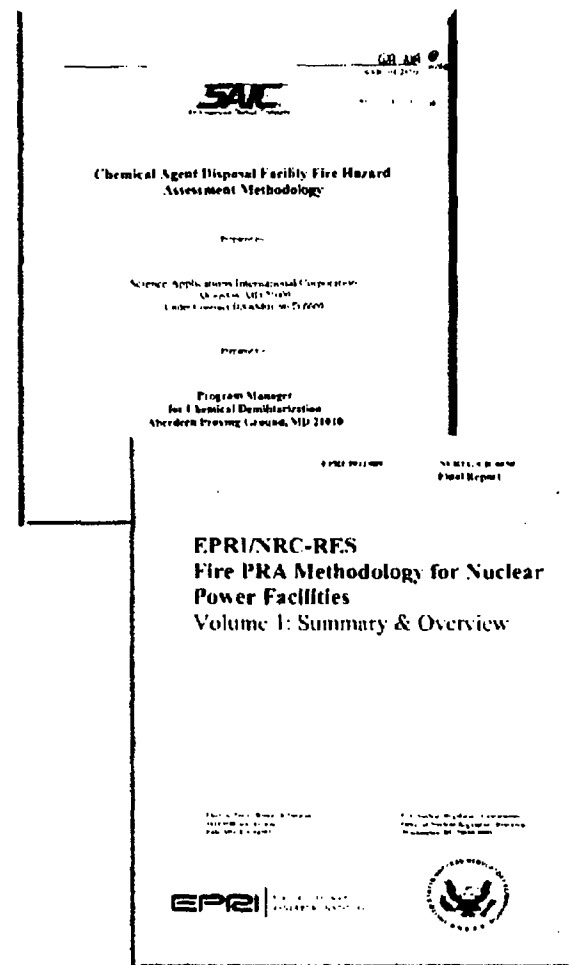
- Uranium reclamation radon barrier soil cover construction inspection
 - Radon barrier cover compaction in accordance with industrial standards
 - Moisture content measurements
- Safety evaluation report preparation for FCSS and SFST licensed facilities (design bases, geotechnical site parameters, analysis and design methodologies, and structural and foundation design and analysis)
- Structural and geotechnical software validation
 - LS-DYNA 960, SAP2000, ProShake
- Prelicensing audit observation of repository facility
 - Soil-structure interaction
 - Seismic design

Experience and Capabilities: Fire/Explosion Hazard Assessment

- Licensing experience
 - Yucca Mountain Repository, Nevada
 - Private Fuel Storage Facility, Utah
 - Diablo Canyon ISFSI, California
 - Idaho Spent Fuel Facility, Idaho
 - Humboldt Bay ISFSI, California
- Wild fire/range fire assessment
 - Ignition frequency and damage potential assessment
- Effects of diesel pool fire
 - Locomotive
 - Tanker truck
- Effects of propane tank release including vapor cloud explosions

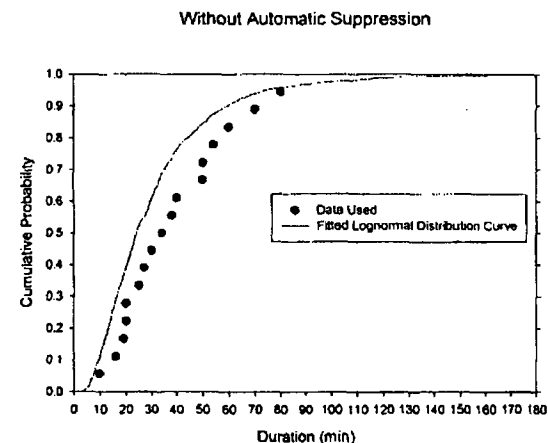
Yucca Mountain Repository Fire Hazard Assessment

- Waste Handling Facilities fire initiating frequency
 - Chemical agent disposal facility fire hazard assessment methodology (Science Application International Corporation)
 - Fire PRA methodology for nuclear power Facilities (EPRI/NRC-RES NUREG/CR-6850)
 - National Fire Protection Association (NFPA)
 - Structure fires in Radioactive Material Working Facilities and Nuclear Energy Plants of noncombustible construction
 - Fires in or at industrial, chemical, hazardous chemical, and Plastic Manufacturing Facilities: 1988–1997 unallocated annual averages and narratives
- Effectiveness of fire protection systems



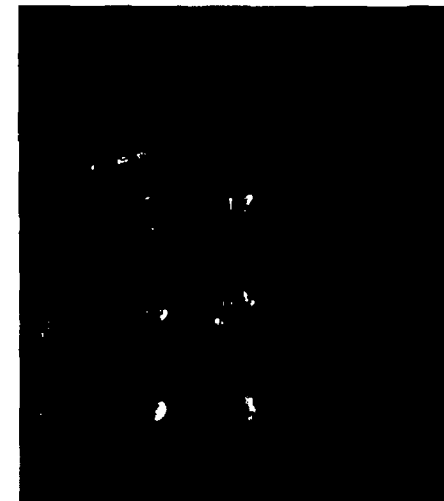
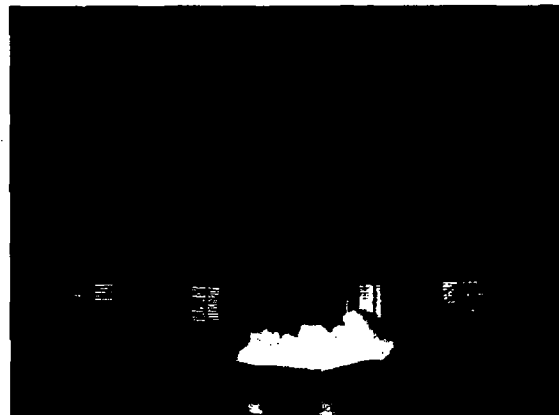
Fire Hazard Assessment: Yucca Mountain (continued)

- Distribution of facility ignition frequency to rooms
 - Likelihood of a fire originating from a particular class of equipment (e.g., welders, motors, electrical equipment, etc.)
 - Scoring methodology
- Fire propagation probability
 - Historical information on fire propagation
 - Local fire ignition: fire within a room containing waste plus fire in surrounding room
 - Frequency of large fires
- Fire event sequence assessment
 - Fire severity in terms of duration and intensity uncertainties
 - Conditional probability of fire damaging waste package target



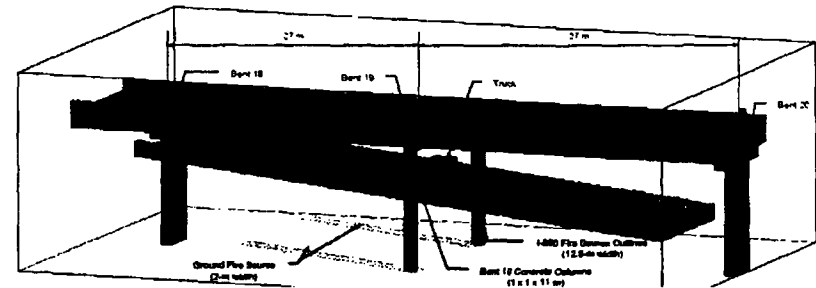
Capabilities: Fire Testing and Experimental Verification

- Enhances confidence in findings
- Validation and verification exercise
- SwRI Fire Technology Department
 - Standard and non-standard testing
 - Customized testing
 - Indoor area for large-scale fires
 - Heat release rates in excess of 25 megawatts

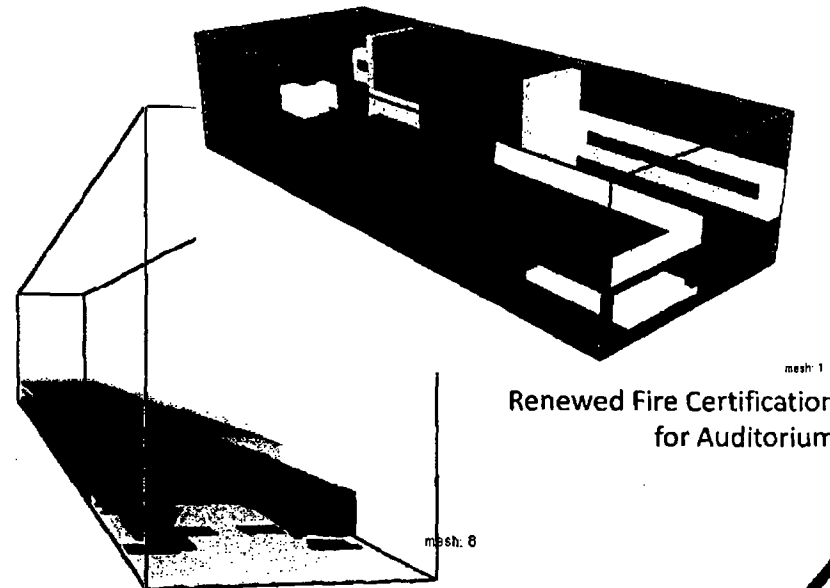


MacArthur Maze Fire: Modeling

- Develop fire simulations to evaluate thermal conditions
- Knowledge of how geometry affects fire progression
- Understanding of intrinsic material properties used for fire modeling



MacArthur Maze Fire

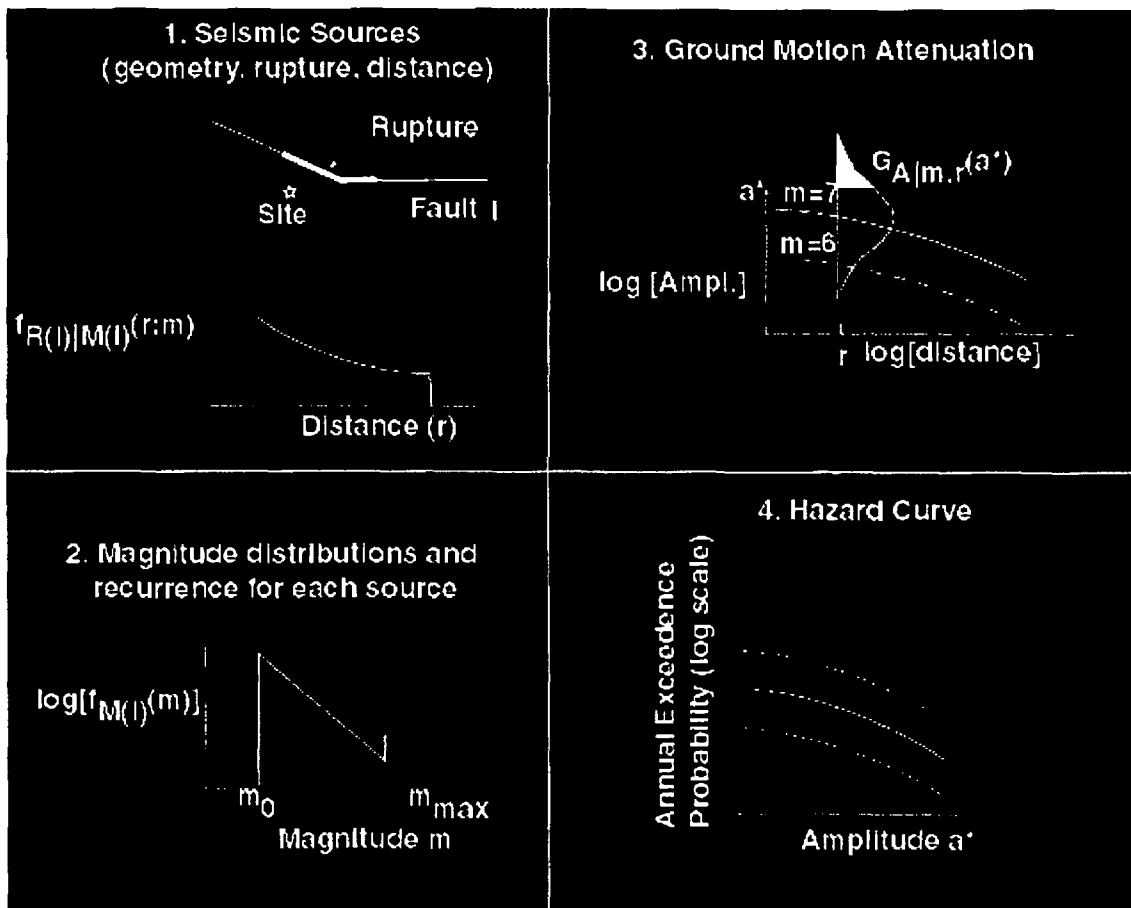


Newhall Pass Tunnel Fire

Renewed Fire Certification
for Auditorium

Seismology: Probabilistic Seismic Hazard Assessment (PSHA) (SER 2.5)

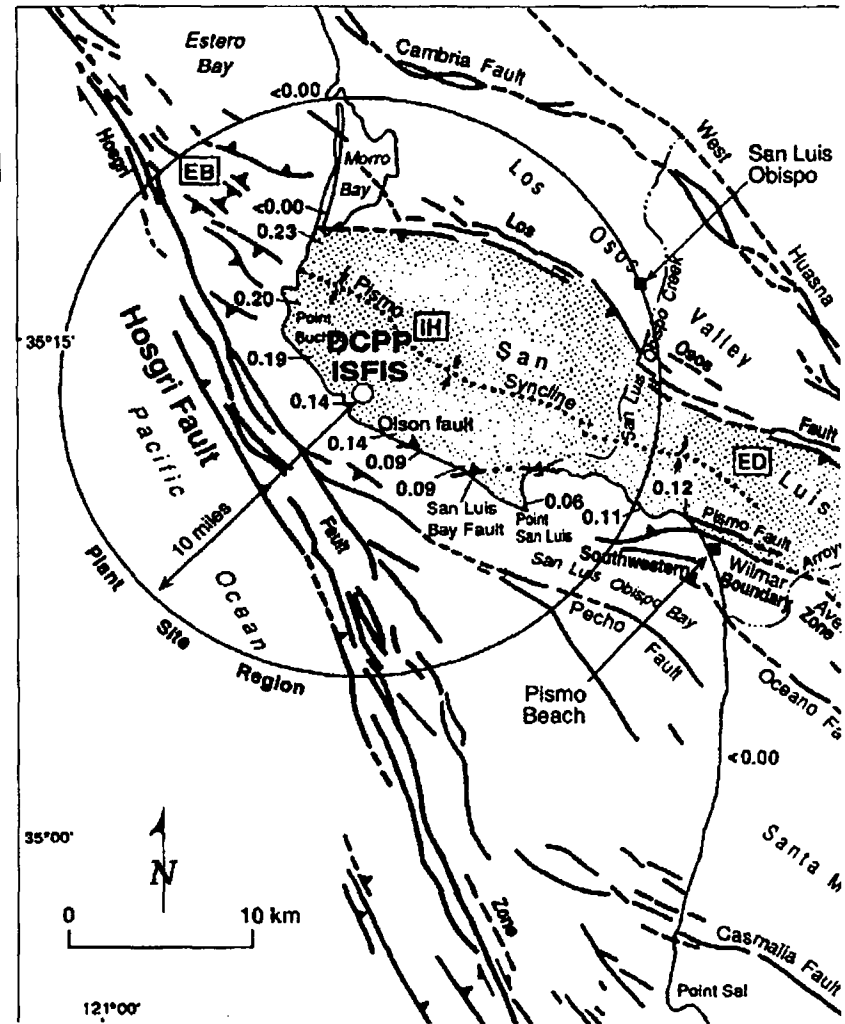
- Conducted and evaluated PSHA
 - PFS Facility
 - Idaho Spent Fuel Facility
 - Humboldt Bay ISFSI
 - Yucca Mountain Repository



Geology: Seismic Sources (SER 2.5)

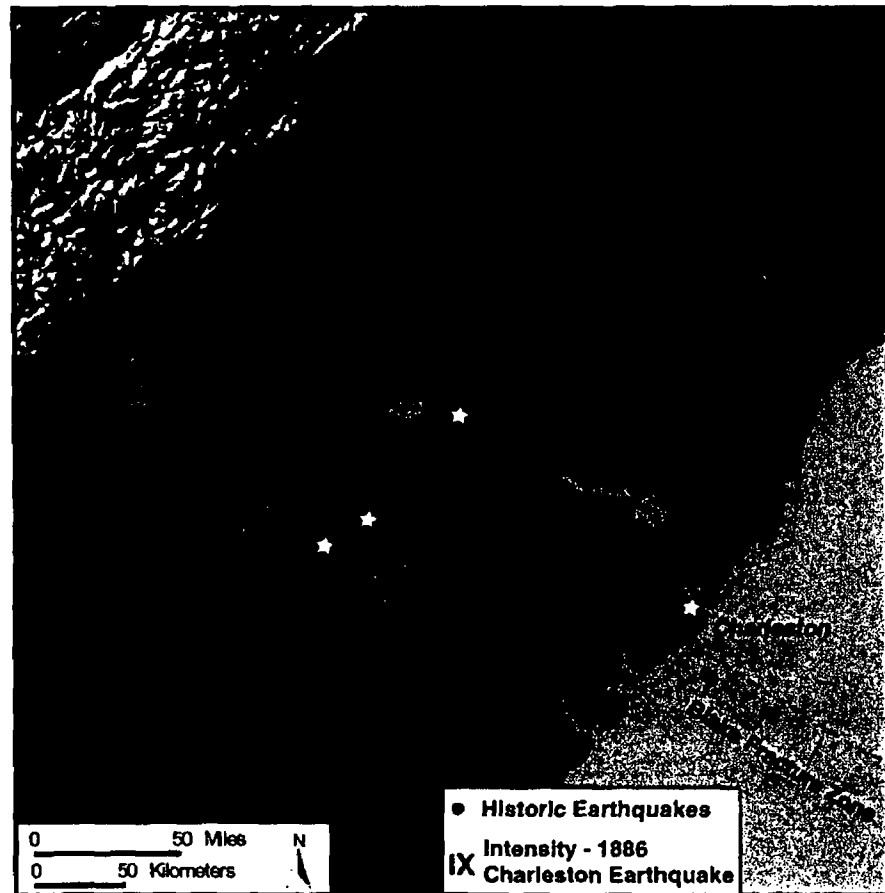
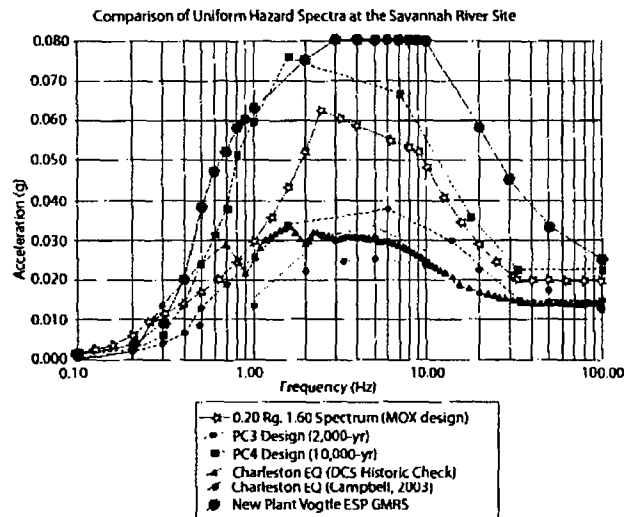
Licensing experience

- Diablo Canyon ISFSI
- Three-Mile Island damaged fuel ISFSI
- PFS Facility
- Idaho Spent Fuel Facility
- Humboldt Bay ISFSI
- LES National Enrichment Facility
- USEC American Centrifuge Plant
- MOX Fuel Fabrication Facility
- GE-Hitachi Enrichment Facility
- AREVA Eagle Rock Enrichment
- Yucca Mountain Repository



Geology: CEUS Paleoliquefaction (SER 2.5)

- MOX fuel fabrication facility, Aiken, SC
 - Detailed review of paleoliquefaction data
 - Assessed recurrence models for the Charlestown earthquake



Ensuring Multiple Fission Barrier Integrity

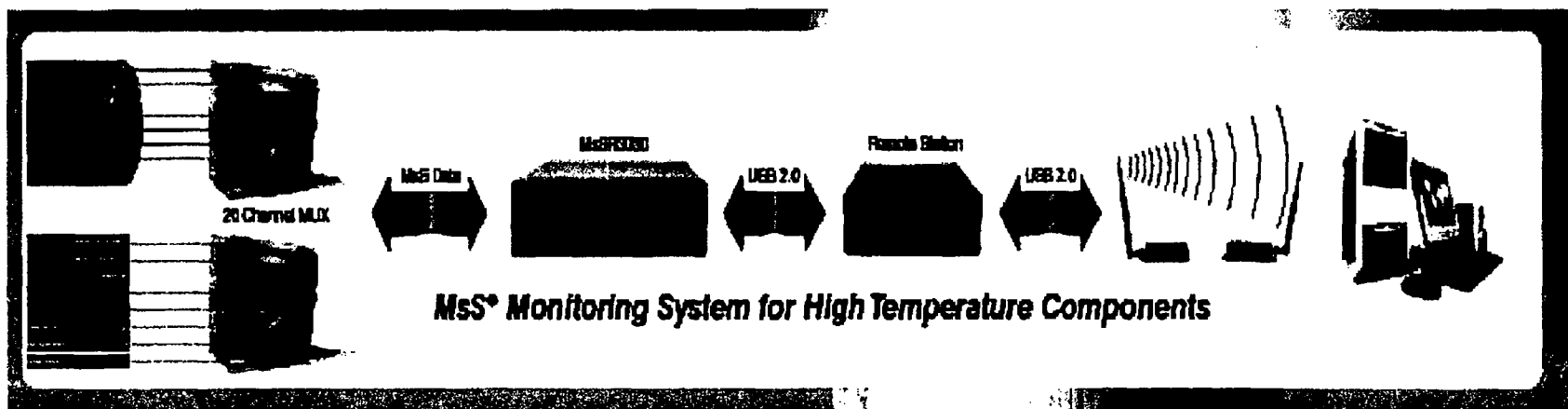
- RPV weld inspection requirements should be similar to existing BWR plants
- Performance of NDE systems for the helical tubing SG should be confirmed
- Higher performance required of containment means that periodic inspections of the containment welds may be required
- Greater reliance on flanged connections in the primary pressure boundary means that periodic inspection of bolting systems will be required
- Normal and accident condition operation depends highly on proper operation of valves around the RPV – inspection requirements and techniques must be established

Access Engineering

- Sufficient access to all components requiring in-service inspection should be ensured as part of the licensing process
- Radiation environment of components requiring inspection should also be examined (i.e., can all inspections be done with components away from fuel?)

Alternative to Periodic ISI

- Division 18 Sensor Systems and NDE Technology of SwRI are evaluating permanently placed sensors on the vessels to monitor various geometries using phased sensor technologies
- Sensors can potentially be placed around the RPV and at critical flanged connections



Development Work

- SwRI is presently
 - Developing monitoring probe technology
 - Developing multiplexed, multiprobe data acquisition, imaging, and analysis technology and associated algorithms to allow automated analysis for certain applications
- Need to evaluate location of probes to insure adequate inspection/monitoring data
- Need to evaluate periodicity of probe data acquisition
- Need to develop algorithms for automated analysis of other pertinent applications

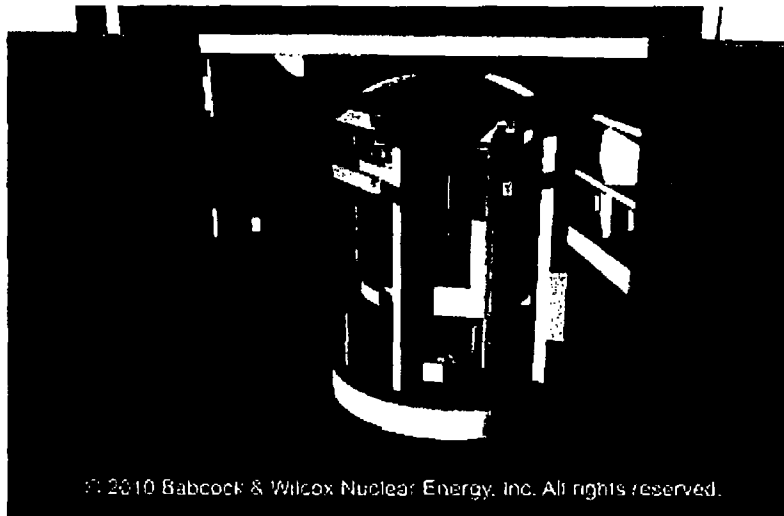
NUREG-0800 Sections

- Plant Description
- Site Characteristics
- Design of SSC&E
- Reactor
- Reactor Coolant System
- Engineered Safety Features
- Instrumentation & Controls
- Electric Power
- Auxiliary Systems
- Steam & Power Conversion
- Radioactive Waste Management
- Radiation Protection
- Conduct of Operations
- Initial Test Program & ITAAC
- Accident Analysis
- Technical Specs.
- QA
- Human Factors Engineering
- Severe Accidents

Babcock & Wilcox mPower™ Reactor

B&W mPower™ - Basic Design

- A pressurized water reactor with the reactor core, steam generator, pressurizer, control rod drive mechanism (CRDMs) and reactor coolant pumps are combined into a common pressure vessel (no large-pipe LOCA)
- Modular: multi-unit plant from 1 to 10+ reactors
- Containment: underground

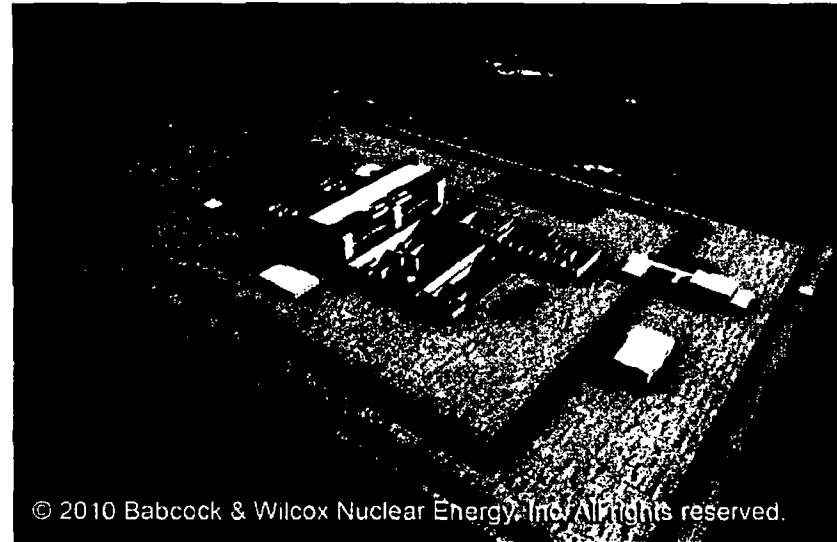


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http://www.babcock.com/products/modular_nuclear/

B&W mPower™ - Basic Design

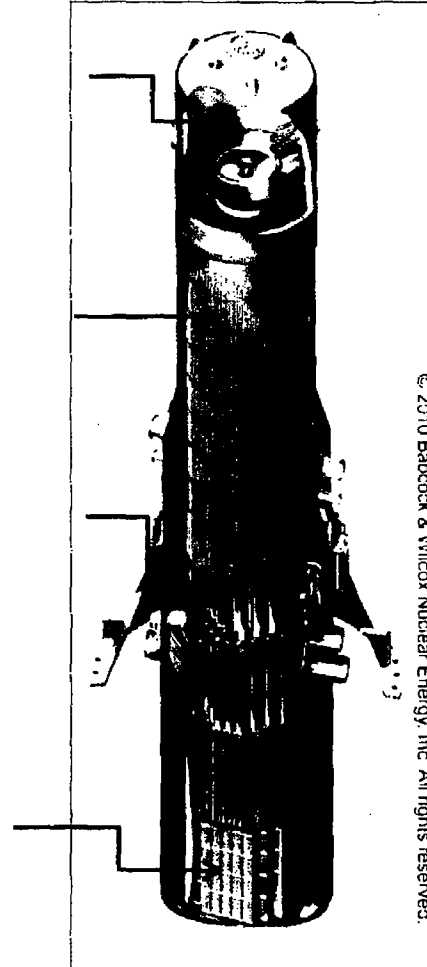
- North American shop-manufactured
 - U.S. and Canadian facilities
- 3 year construction cycle
- No on-site nuclear steam supply system (NSSS) construction
- Rail-shippable NSSS



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http://www.babcock.com/products/modular_nuclear/

B&W mPower™ - Basic Design



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http://www.babcock.com/products/modular_nuclear/

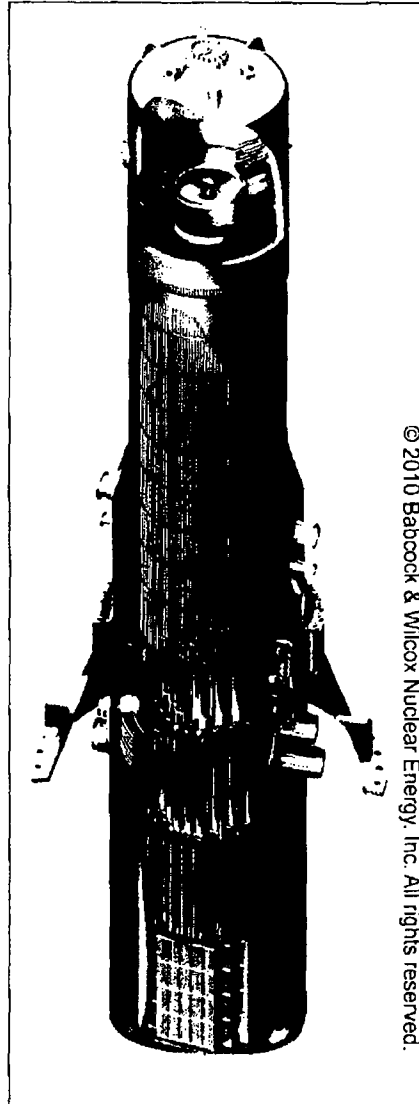
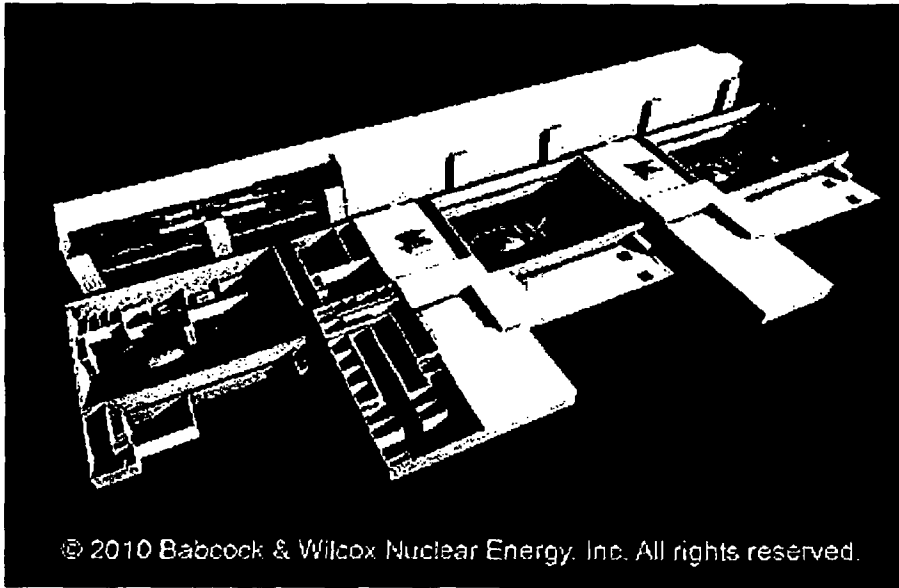
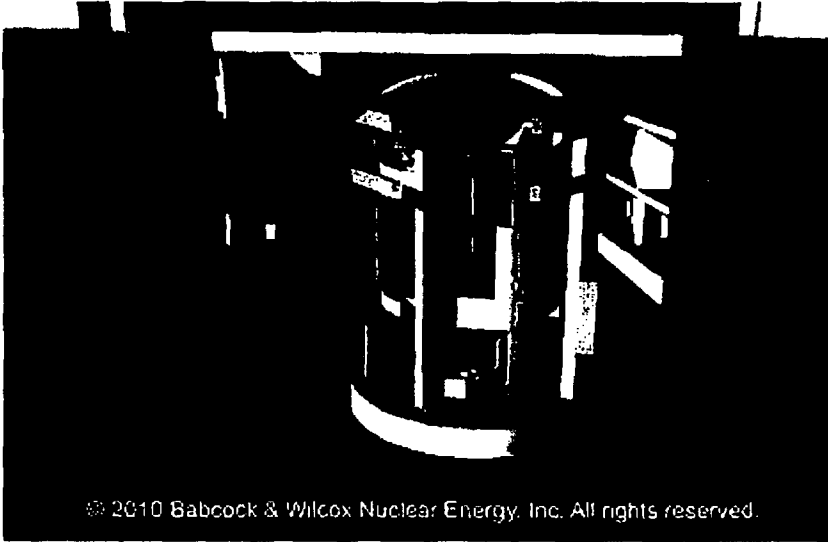
B&W mPower™ - Basic Design

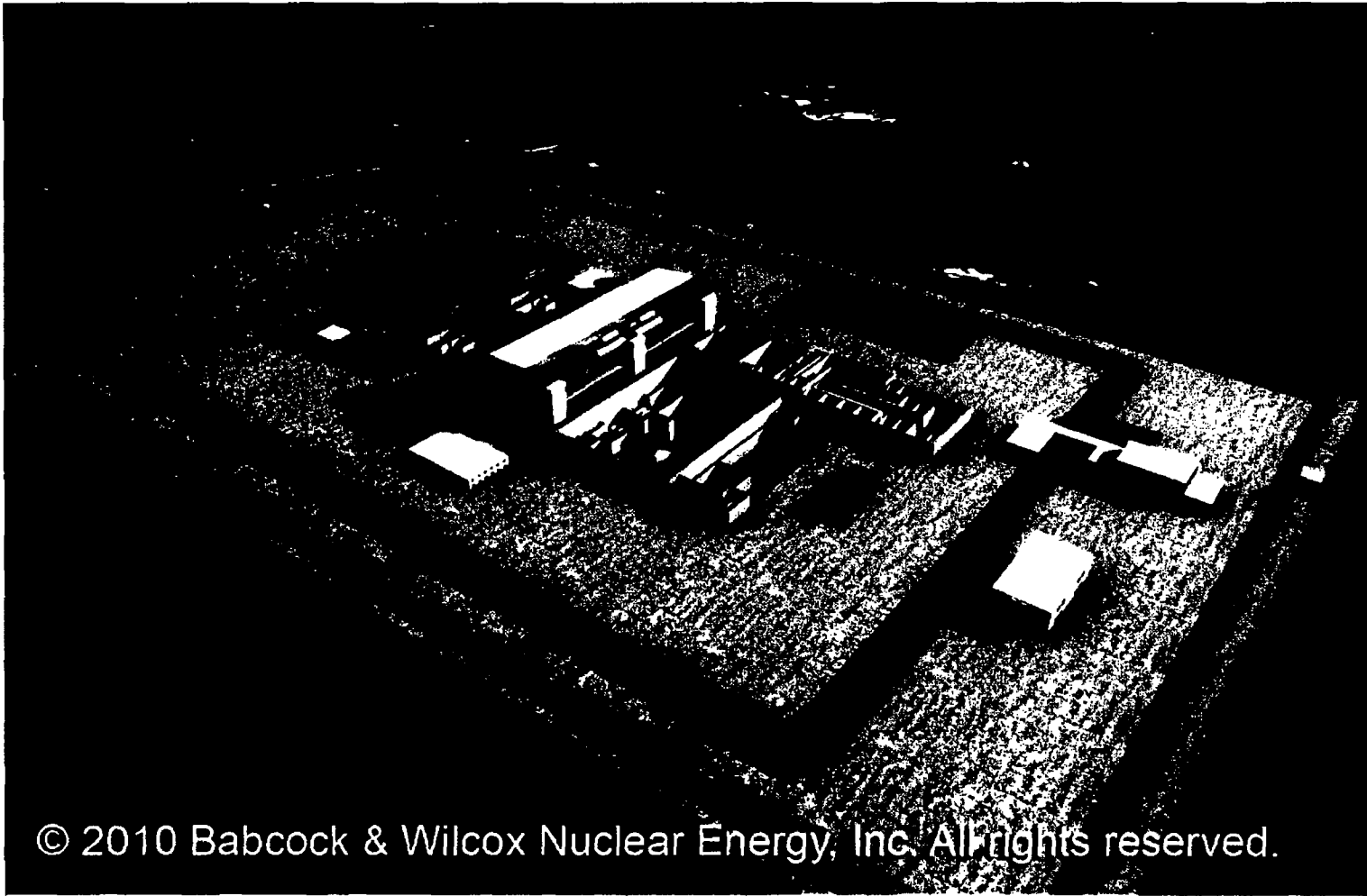
- Uses PWR fuel (17x17 pin array)
 - UO₂ pellets enriched to 4.95 wt%
 - Fuel rod clad: zircaloy-4
- Reactor has a 4+ year operating cycle between refueling
 - Single cycle for fuel, reaches design discharge burnup requirements of 36 GWd/MTU
 - Design has spent fuel storage capacity for life of the reactor (60 year design life)

B&W mPower™ - Basic Design

- Controlling Excess Reactivity
 - To control excess reactivity uses
 - Nonintegral burnable poison rods (BPR) [$\text{Al}_2\text{O}_3\text{-B}_4\text{C}$, 1 to 8 wt%]
 - Integral fuel burnable poison rods (FBPR) [Fuel rods, U-235 enrichment at 3.95 wt% and Gd_2O_3 at 3 wt%]
 - Control rod sequences are changed periodically in order to re-distribute and flatten core power and burn profiles
 - The use of Poisons and displacement of water results in harder spectrum produces more Pu

Images from B& W site:
http://www.babcock.com/products/modular_nuclear/





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NuScale Modular Reactor

Overview

Plant Characteristics

Power Generation Module

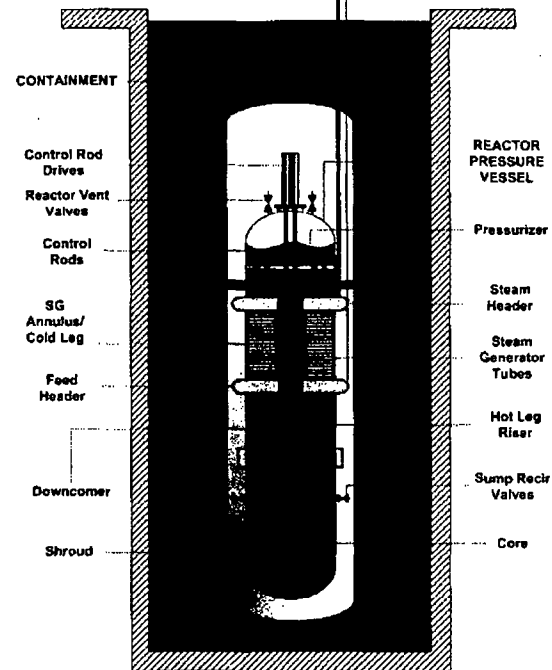
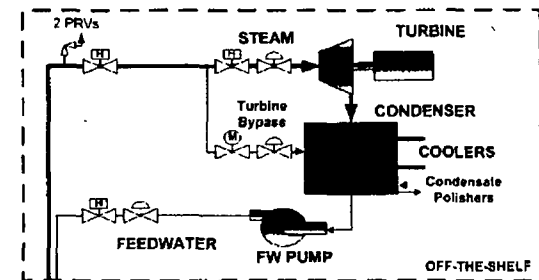
- Reactor Type PWR
- Electrical Output 45 MWe
- Steam Generator Number Two independent tube bundles
- Steam Generator Type Vertical, once-through, helical tubes
- Steam Generator Tube Number ~1000
- Steam Cycle Superheated
- Turbine Type 3600 rpm, single pressure
- Steam Flow 56.1 kg/s (445,000 lb/hr)

Reactor

- Thermal Power 150 MWt
- Reactor Pressure and Core Exit Temperature $P < 10.4 \text{ MPa}$ (1500 psig), 575 K (575 F)
- Primary Coolant Mass Flow Rate ~600 kg/s (4.76E6 lb/hr)
- Fuel 24 -17x17 fuel bundles, half height, UO₂, 4.95% enriched
- Refueling Intervals 24 months

System Design

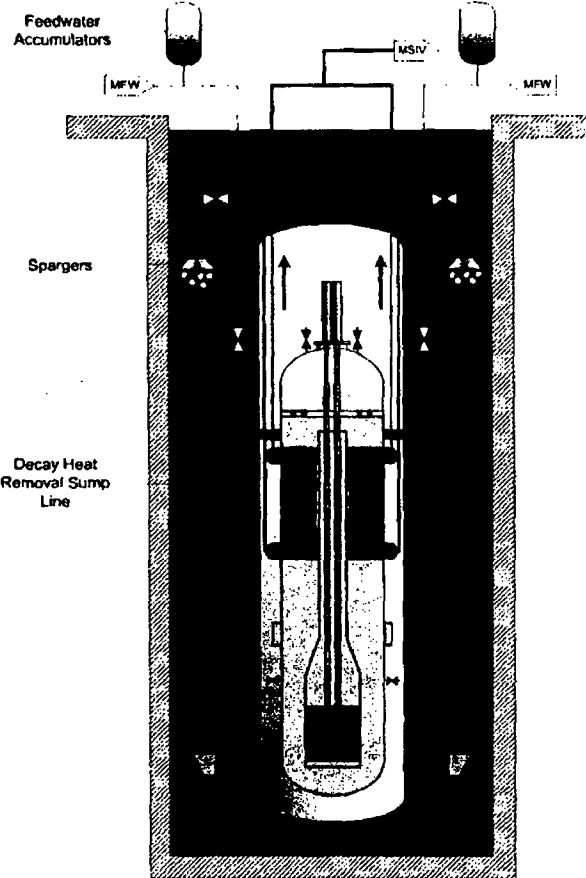
- Light water reactor design
- Integrated containment vessel and reactor system (60' x 14' Dia.)
- Containment vessel submerged in water below ground level
- Passive cooling system uses natural circulation/convection for coolant flow
- Passive safety systems (each capable of 7 percent decay heat removal)
- Decay heat removal system (DHRS)
- Containment heat removal system (CHRS)
- COTS turbine-generator set
- 1 to 24 units (45—1,080 MWe) per facility



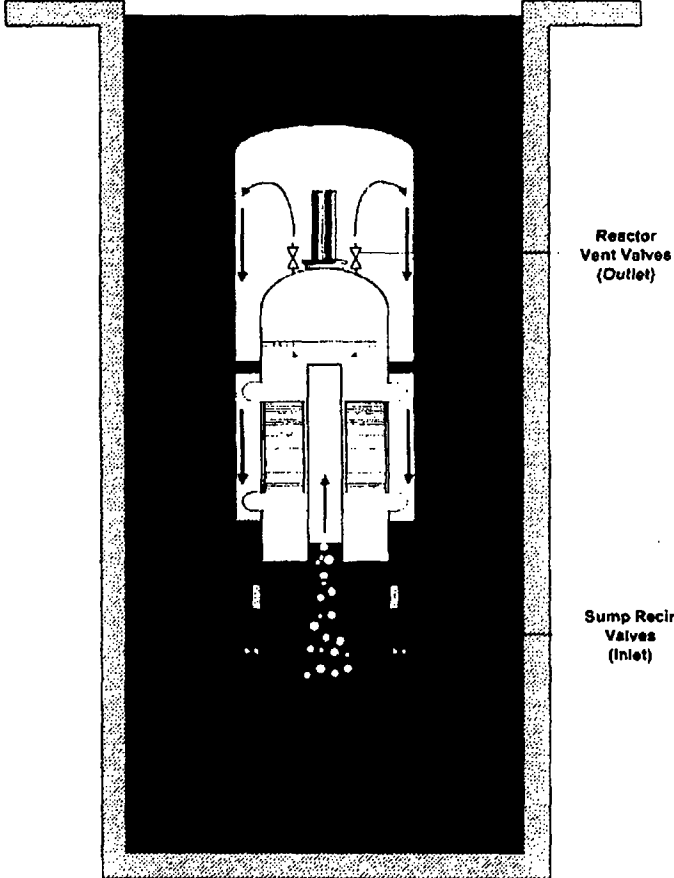
Reactor Vessel Design

- 9 ft OD , 45 ft long
- 3.0 in carbon steel vessel with internal stainless steel liner
- Vacuum between containment and reactor vessels
- Operating pressure: <10.4 MPa (1,500 psig)
- Natural circulation flow (no pumps)
- Steam Generator
 - Two independent helical coil tube bundles
 - Two feed water inlets
 - Two main steam outlets
- Core shroud and riser
- Four CRDMs/16 control rod clusters
- Two reactor vent valves
- Two sump valves
- One flange location

Reactor Vessel Safety



Decay Heat Removal System

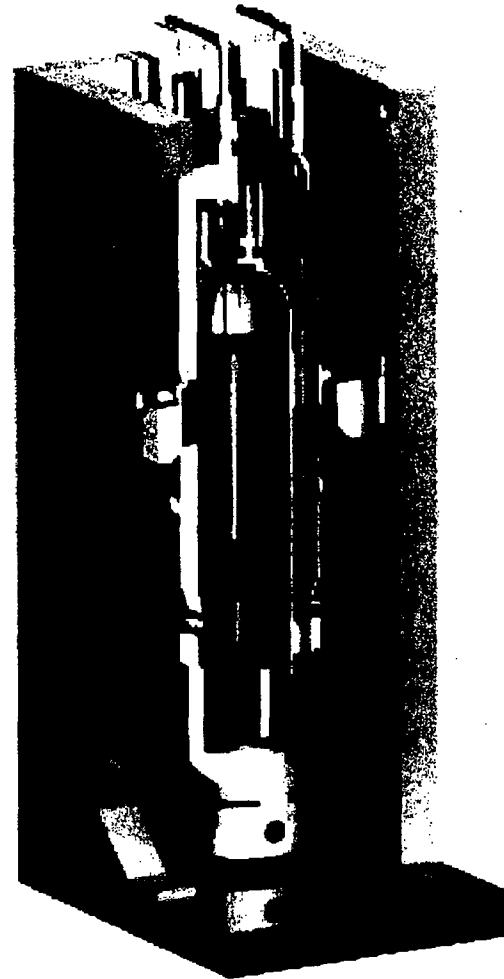


Containment Heat Removal System

DK 1601 of 1892

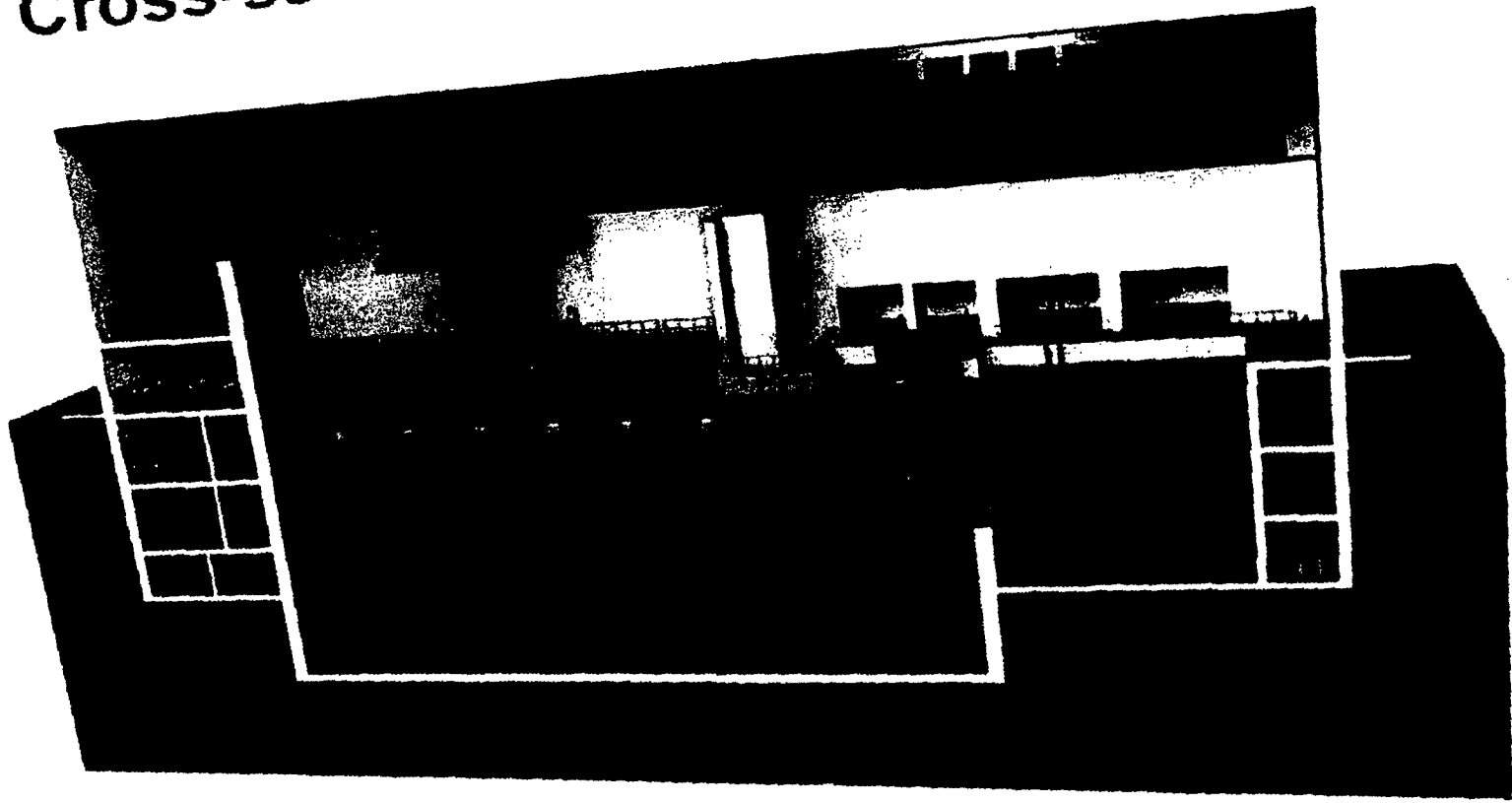
Materials

- Carbon steel containment
- Carbon steel vessel, stainless steel lined
- Standard PWR-type fuel (half-height)
- Stainless steel/Inconel steam generators



Operation

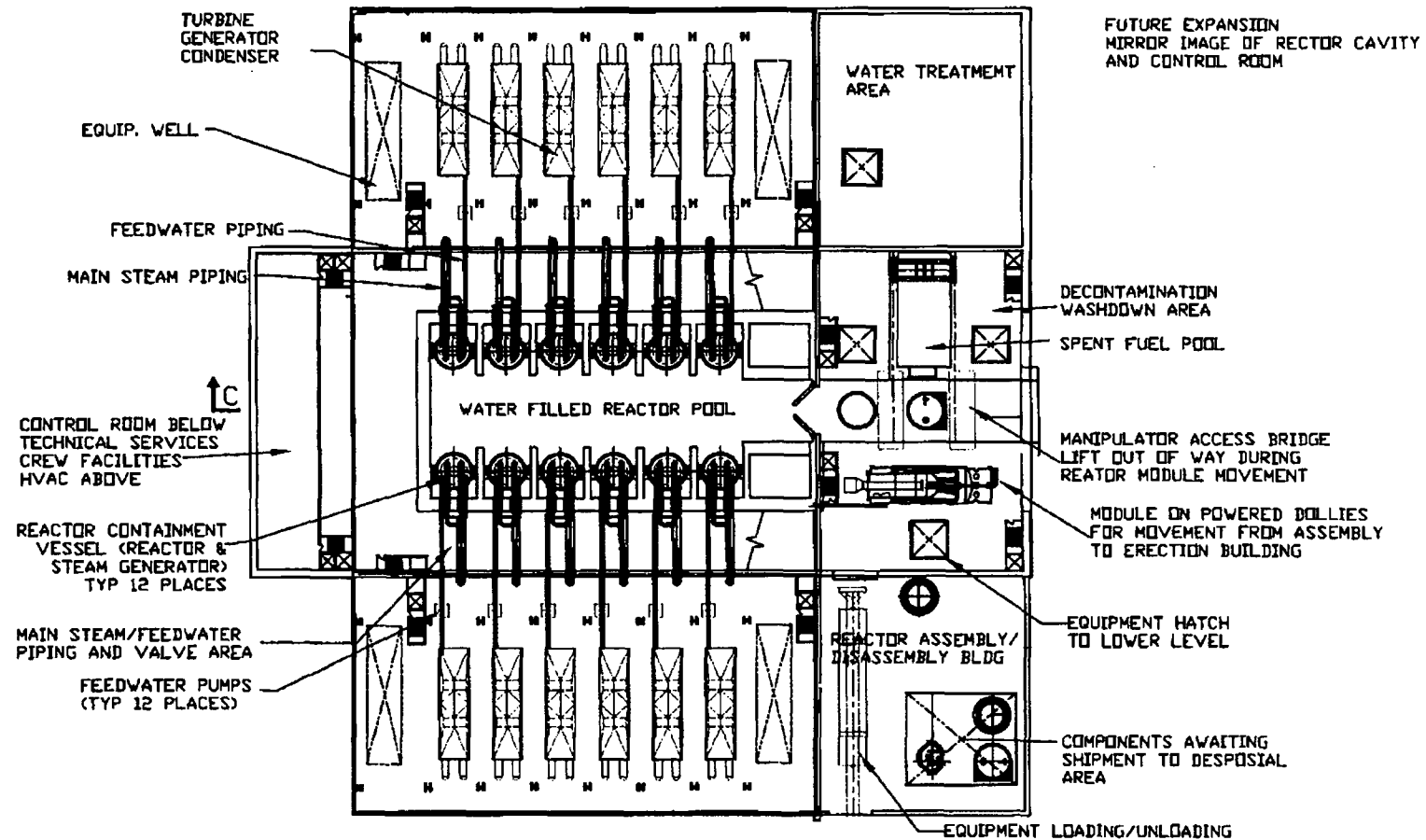
Cross-sectional view of 6 modules



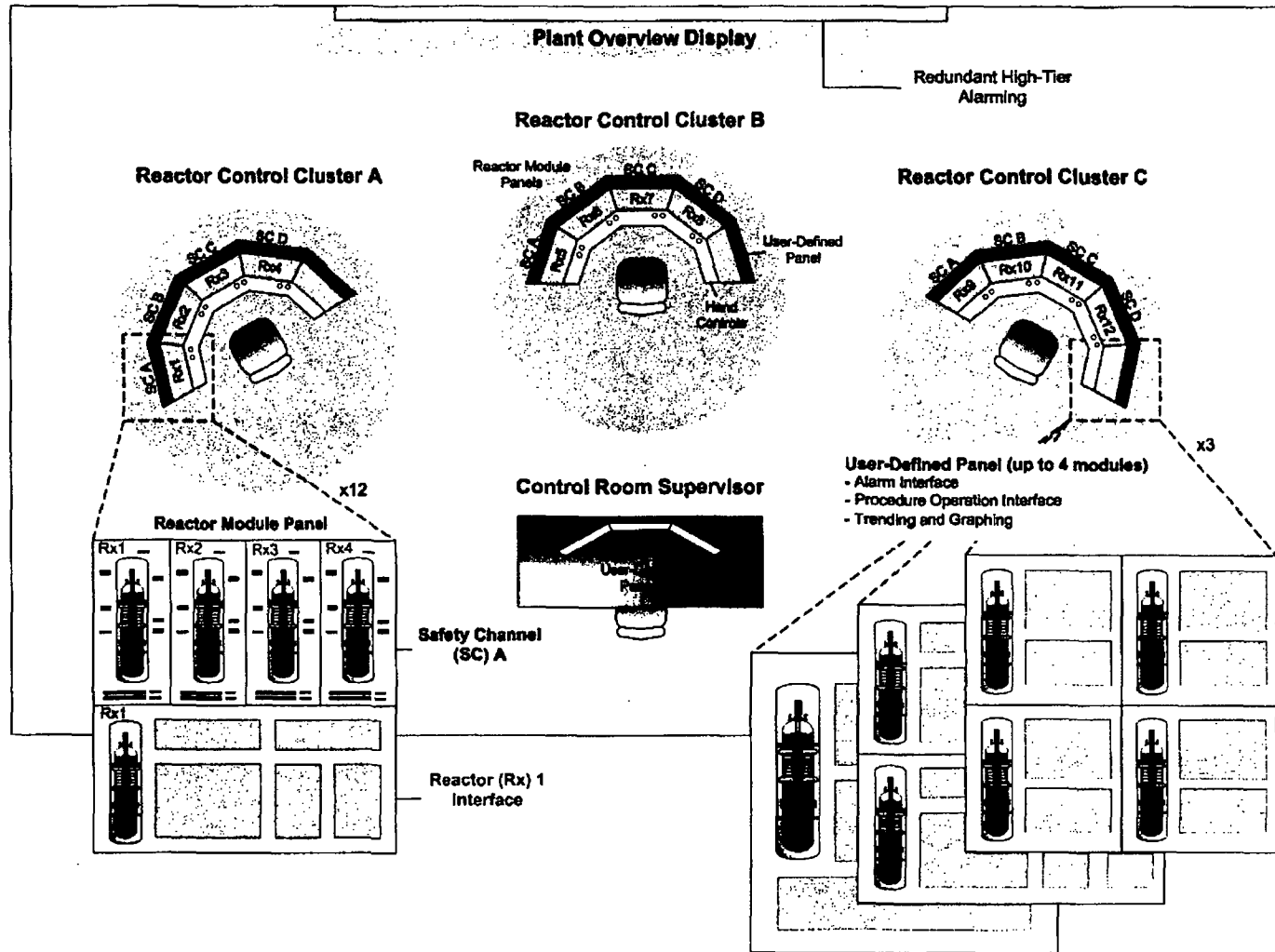
DK 1603 of 1892

Operation

Plan View of 12 Modules



Operation



From: Burrows, Sheryl
To: NRO Distribution; Zabler, Marian; Weisman, Robert; Kirkwood, Sara; Moulding, Patrick; Spencer, Michael; Roach, Edward; Price, Sarah; Martin, Jody; Liaw, Stephanie; Barss, Dan; Williams, Vince; Huyck, Doug; Correia, Richard; McDermott, Brian; Sanfilippo, Nathan; Burnell, Scott; Shane, Raeann; Rakovan, Lance; Hannah, Roger; Rihm, Roger; Ellmers, Glenn; Landau, Mindy; Akstulewicz, Frank; Matthews, David; Tonacci, Mark; Mizuno, Geary; Tartal, George; Burton, William; Jasinski, Robert; Bavor, Bruce; Galvin, Dennis; Holahan, Gary; Johnson, Michael
Subject: Availability of Proposed Rule for Economic Simplified Boiling Water Reactor Design Certification
Date: Thursday, March 24, 2011 1:10:45 PM
Attachments: ESBWRDesignCert.pdf

This notice is being sent to interested stakeholders to announce the availability of the proposed rule for 10 CFR Part 52, "ESBWR Design Certification." The NRC is proposing to amend its regulations to certify the ESBWR standard plant design. This action is necessary so that applicants or licensees intending to construct and operate an ESBWR design may do so by referencing this design certification rule (DCR). The applicant for certification of the ESBWR design is GE-Hitachi Nuclear Energy (GEH). The public is invited to submit comments on this proposed DCR, the generic design control document (DCD) that would be incorporated by reference into the DCR, and the environmental assessment (EA) for the ESBWR design.

The proposed rule was published for comment in the Federal Register today (76 FR 16549-16570). The proposed rule will also be available on the Federal eRulemaking Portal <http://www.regulations.gov> under Docket ID NRC-2010-0135.

Comments on the proposed rule will be accepted through June 7, 2011. Submit comments on the information collection aspects of this rule by April 22, 2011. Comments received after these dates will be considered if it is practical to do so, but assurance of consideration cannot be given to comments received after these dates. Comments should include the Docket ID NRC-2010-0135 in the header or subject line.

The attached Federal Register notice explains how to submit comments.

FOR FURTHER INFORMATION CONTACT: Mr. George Tartal, Office of New Reactors, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; telephone at 301-415-0016; e-mail: George.Tartal@nrc.gov; or Amy Cubbage, Office of New Reactors, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; telephone 301-415-2875; e-mail: Amy.Cubbage@nrc.gov.

Sheryl Burrows
Project Manager
Rulemaking and Guidance Development Branch
Division of New Reactor Licensing
Office of New Reactors
Phone: 301-415-6086

Security settings or invalid file format do not permit using ESBWRDesignCert.pdf (244666 Bytes).

From: Whitaker, Barbara
To: Lauron, Carolyn; Flanders, Scott; Chokshi, Niles; Segala, John; Schum, Constance
Cc: Sweeney, Beverly; Dehn, Janine; Burrows, Sheryl; Grimes, Charemaque; Campbell, Steve
Subject: RE: DSER Response T-7F18 is currently occupied: Task Force
Date: Thursday, March 24, 2011 4:42:57 PM

Awaiting my call? Scott is in a meeting! I'll speak with him tomorrow.

Thanks for your assistance.

Barbara Whitaker

MANAGEMENT ANALYST

NRO-PMDA

T-6D22

301-415-7456



From: Lauron, Carolyn
Sent: Thursday, March 24, 2011 4:36 PM
To: Whitaker, Barbara; Flanders, Scott; Chokshi, Niles; Segala, John; Schum, Constance
Cc: Sweeney, Beverly; Dehn, Janine; Burrows, Sheryl; Grimes, Charemaque; Campbell, Steve
Subject: RE: DSER Response T-7F18 is currently occupied: Task Force

Who did you talk to this morning? You called me within the last 2 hours – I wasn't here most of the morning.

Scott is awaiting your call.

From: Whitaker, Barbara
Sent: Thursday, March 24, 2011 4:34 PM
To: Lauron, Carolyn; Flanders, Scott; Chokshi, Niles; Segala, John; Schum, Constance
Cc: Sweeney, Beverly; Dehn, Janine; Burrows, Sheryl; Grimes, Charemaque; Campbell, Steve
Subject: RE: DSER Response T-7F18 is currently occupied: Task Force

Hi:

My records indicate T7F18 is vacant as I discussed with you this morning. ADM's inspection of TWFN 7th floor this morning determined T7F18 was unoccupied. The Task Force has to be co-located. Therefore, whomever the person is in T7F18 may have to be moved to T7E59 until the end of July.

Barbara Whitaker

MANAGEMENT ANALYST

NRO-PMDA
T-6D22
301-415-7456



From: Lauron, Carolyn
Sent: Thursday, March 24, 2011 4:24 PM
To: Whitaker, Barbara; Flanders, Scott; Chokshi, Nilesh; Segala, John; Schum, Constance
Cc: Sweeney, Beverly; Dehn, Janine; Burrows, Sheryl; Grimes, Charemagne; Campbell, Steve
Subject: DSER Response T-7F18 is currently occupied: Task Force
Importance: High

Hi –

T-7F18 is currently occupied by one of the DSER Branch Chiefs.

Please come by and discuss further with Scott.

Thanks,
Carolyn
2736

From: Whitaker, Barbara
Sent: Thursday, March 24, 2011 3:26 PM
To: Flanders, Scott; Chokshi, Nilesh; Segala, John; Schum, Constance
Cc: Sweeney, Beverly; Lauron, Carolyn; Dehn, Janine; Burrows, Sheryl; Grimes, Charemagne; Campbell, Steve
Subject: Task Force

Good afternoon:

HEADS UP! I have been informed by the Office of Administration the following office spaces will be utilized to accommodate the Task Force from now until the end of July:

T7F12 and T7F18 (Non-Bargaining)

T7F20, F09 and J06 (Bargaining)

Barbara Whitaker

MANAGEMENT ANALYST

NRO-PMDA
T-6D22
301-415-7456

From: Whitaker, Barbara
To: Lauron, Carolyn; Flanders, Scott; Chokshi, Niles; Segala, John; Schum, Constance
Cc: Sweeney, Beverly; Dehn, Janine; Burrows, Sheryl; Grimes, Charemagne; Campbell, Steve
Subject: RE: DSER Response T-7F18 is currently occupied: Task Force
Date: Thursday, March 24, 2011 4:39:05 PM

My mistake. I spoke with you this afternoon. I'll speak with Scott.

Thanks.

Barbara Whitaker

MANAGEMENT ANALYST

NRO-PMDA

T-6D22

301-415-7456



From: Lauron, Carolyn
Sent: Thursday, March 24, 2011 4:36 PM
To: Whitaker, Barbara; Flanders, Scott; Chokshi, Niles; Segala, John; Schum, Constance
Cc: Sweeney, Beverly; Dehn, Janine; Burrows, Sheryl; Grimes, Charemagne; Campbell, Steve
Subject: RE: DSER Response T-7F18 is currently occupied: Task Force

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Scott is awaiting your call.

From: Whitaker, Barbara
Sent: Thursday, March 24, 2011 4:34 PM
To: Lauron, Carolyn; Flanders, Scott; Chokshi, Niles; Segala, John; Schum, Constance
Cc: Sweeney, Beverly; Dehn, Janine; Burrows, Sheryl; Grimes, Charemagne; Campbell, Steve
Subject: RE: DSER Response T-7F18 is currently occupied: Task Force

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Barbara Whitaker

MANAGEMENT ANALYST

From: [Schaaf, Robert](#)
To: [Brown, David](#); [Hart, Michelle](#); [Harvey, Brad](#); [Mazaika, Michael](#); [Quinlan, Kevin](#); [Imboden, Andy](#); [Galletta, Thomas](#); [Zalcman, Barry](#); [Emch, Richard](#); [Flanders, Scott](#); [Chokshi, Nilesh](#); [Karas, Rebecca](#)
Cc: [Braden, Michael](#); [Sisk, David](#); [Tammara, Seshagiri](#); [Dickson, Elijah](#)
Subject: FYI: EPA Defends Radiation Monitoring But Concerns Continue To Mount
Date: Thursday, March 24, 2011 4:53:18 PM

FYI, activist concerns regarding EPA's rad monitoring network...

<http://insideepa.com/201103242358739/EPA-Daily-News/Daily-News/epa-defends-radiation-monitoring-but-concerns-continue-to-mount/menu-id-95.html>

Bob

~~ALL~~
RES

From: Johnson, Michael
To: Sprogeris, Patricia
Subject: FW: OIG's Most Recent Audit Report: OIG-11-A-08, Audit of NRC's Implementation of 10 CFR Part 21, Reporting of Defects and Noncompliance - March 23, 2011
Date: Thursday, March 24, 2011 5:08:00 PM
Attachments: OIG-11-A-08, Audit of NRC's Implementation of 10CFR Part 21, Reporting of Defects and Noncompliance FINAL REPORT 03.08.11 (pb).pdf

Please print this out for me. Thanks.

From: Wiggins, Jim
Sent: Thursday, March 24, 2011 3:54 PM
To: Johnson, Michael
Subject: FW: OIG's Most Recent Audit Report: OIG-11-A-08, Audit of NRC's Implementation of 10 CFR Part 21, Reporting of Defects and Noncompliance - March 23, 2011

Not much here to shed light on the CSFI issue.

From: Bosco, Paulette
Sent: Wednesday, March 23, 2011 11:25 AM
To: /o=USNRC/ou=First Administrative Group/cn=Recipients/cn=4018eeaf-314116c0-1b3a5e41-6a56e863; Ash, Darren; Boyce, Thomas (OIS); Brenner, Eliot; Burns, Stephen; Cohen, Miriam; Collins, Elmo; Dean, Bill; Doane, Margaret; Dyer, Jim; Greene, Kathryn; Hackett, Edwin; Haney, Catherine; Hawken, Roy; Howard, Patrick; Johnson, Michael; Kelley, Corenthis; Leeds, Eric; McCrary, Cheryl; McCree, Victor; Miller, Charles; Muessle, Mary; Poole, Brooke; Satorius, Mark; Schmidt, Rebecca; Sheron, Brian; Vietti-Cook, Annette; Virgilio, Martin; Weber, Michael; Wiggins, Jim; Zimmerman, Roy; Boger, Bruce; Burns, Stephen; Campbell, Andy; Casto, Chuck; Dapas, Marc; Dorman, Dan; Grobe, Jack; Hayden, Elizabeth; Howell, Art; Krupnick, David; Lew, David; Moore, Scott; Pederson, Cynthia; Schaeffer, James; Stewart, Sharon; Tracy, Glenn; Uhle, Jennifer; Wert, Leonard; Williams, Barbara
Cc: Wilson, Timothy; Foster, Vicki; Gordon, Judy; Zane, Steven
Subject: OIG's Most Recent Audit Report: OIG-11-A-08, Audit of NRC's Implementation of 10 CFR Part 21, Reporting of Defects and Noncompliance - March 23, 2011

Attached please find the following Office of the Inspector General's Most Recent Audit Report:

OIG-11-A-08, Audit of NRC's Implementation of 10 CFR Part 21, Reporting of Defects and Noncompliance – March 23, 2011

ADAMS Accession Number: ML110820426

This report will be publicly available in ADAMS and on the NRC Web site on arch 24, 2011.

If you have any questions regarding this report, please contact RK Wild, Team Leader at 415-5948 or Vick Foster, Audit Manager at 415-5909.

Thank you.

E-Mail: paulette.bosco@nrc.gov

AUDIT REPORT

Audit of NRC's Implementation of 10 CFR Part 21,
Reporting of Defects and Noncompliance

OIG-11-A-08 March 23, 2011



All publicly available OIG reports (including this report) are accessible through
NRC's Web site at:

<http://www.nrc.gov/reading-rm/doc-collections/insp-gen/>



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
WASHINGTON, D.C. 20555-0001

OFFICE OF THE
INSPECTOR GENERAL

March 23, 2011

MEMORANDUM TO: R. William Borchardt
Executive Director for Operations

FROM: Stephen D. Dingbaum */RA/*
Assistant Inspector General for Audits

SUBJECT: AUDIT OF NRC'S IMPLEMENTATION OF 10 CFR PART
21, REPORTING OF DEFECTS AND NONCOMPLIANCE
(OIG-11-A-08)

Attached is the Office of the Inspector General's (OIG) audit report titled, *Audit of NRC's Implementation of 10 CFR Part 21, Reporting of Defects and Noncompliance*.

The report presents the results of the subject audit. OIG discussed the audit results and informal agency comments with agency management and staff during an exit conference on February 1, 2011, and during a meeting on February 23, 2011. OIG incorporated the agency's informal comments into this final report as appropriate. NRC management stated that the report will be helpful in adding clarity in the associated regulatory area and opted not to provide formal comments.

Please provide information on actions taken or planned on each of the recommendations within 30 days of the date of this memorandum. Actions taken or planned are subject to OIG followup as stated in Management Directive 6.1.

We appreciate the cooperation extended to us by members of your staff during the audit. If you have any questions or comments about our report, please contact me at 415-5915 or R.K. Wild, Team Leader, Nuclear Reactor Safety Team, at 415-5948.

Attachment: As stated

Electronic Distribution

Edwin M. Hackett, Executive Director, Advisory Committee
on Reactor Safeguards
E. Roy Hawkens, Chief Administrative Judge, Atomic Safety
and Licensing Board Panel
Stephen G. Burns, General Counsel
Brooke D. Poole, Director, Office of Commission Appellate Adjudication
James E. Dyer, Chief Financial Officer
Margaret M. Doane, Director, Office of International Programs
Rebecca L. Schmidt, Director, Office of Congressional Affairs
Eliot B. Brenner, Director, Office of Public Affairs
Annette Vietti-Cook, Secretary of the Commission
R. William Borchardt, Executive Director for Operations
Michael F. Weber, Deputy Executive Director for Materials, Waste,
Research, State, Tribal, and Compliance Programs, OEDO
Darren B. Ash, Deputy Executive Director
for Corporate Management, OEDO
Martin J. Virgilio, Deputy Executive Director for Reactor
and Preparedness Programs, OEDO
Mary C. Muessle, Assistant for Operations, OEDO
Kathryn O. Greene, Director, Office of Administration
Patrick D. Howard, Director, Computer Security Office
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and Environmental Management Programs
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and Safeguards
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Brian W. Sheron, Director, Office of Nuclear Regulatory Research
Corenthis B. Kelley, Director, Office of Small Business and Civil Rights
James T. Wiggins, Director, Office of Nuclear Security
and Incident Response
William M. Dean, Acting Regional Administrator, Region I
Victor M. McCree, Regional Administrator, Region II
Mark A. Satorius, Regional Administrator, Region III
Elmo E. Collins, Jr., Regional Administrator, Region IV

EXECUTIVE SUMMARY

BACKGROUND

The Nuclear Regulatory Commission (NRC) endeavors to protect the public health and safety and the environment through the regulation of the 104 operating nuclear power plants in the United States. The *Energy Reorganization Act of 1974, as Amended, Section 206, Noncompliance*¹ provides the statutory basis for NRC guidance and regulations that pertain to reporting component defects² in operating reactors. Specifically, Section 206 requires licensees that operate nuclear power plants to notify NRC of defects in basic components³ that could cause a substantial safety hazard.⁴

NRC uses Title 10, Code of Federal Regulations, Part 21, *Reporting of Defects and Noncompliance* (Part 21) to implement the provisions of Section 206. The primary NRC office responsible for Part 21 implementation among licensees with operating plants is the Office of Nuclear Reactor Regulation.

PURPOSE

The purpose of this audit was to determine if NRC's implementation of Federal regulations requiring reactor licensees to report defects contained in installed equipment is meeting the intent of the *Energy Reorganization Act of 1974, as Amended, Section 206, Noncompliance*.

¹ For the purposes of this report, *Energy Reorganization Act of 1974, as Amended, Section 206, Noncompliance* is referred to as Section 206.

² A defect is a deviation in a basic component delivered to a purchaser for use in operating nuclear power plants if, on the basis of an evaluation, the deviation could create a substantial safety hazard.

³ A basic component is a structure, system, or component that assures the integrity of the reactor coolant pressure boundary; the capability to shut down the reactor and maintain it in a safe shutdown condition; or the capability to prevent or mitigate the consequences of accidents. It is, essentially, a safety-related component.

⁴ A substantial safety hazard is the loss of safety function to the extent that there is a major reduction in the degree of protection provided to public health and safety. Safety functions are necessary to assure the integrity of the reactor coolant pressure boundary, the capability to shut down the reactor and maintain it in a safe shutdown condition, or the capability to prevent or mitigate the consequences of accidents that could result in certain potential offsite exposures.

RESULTS IN BRIEF

NRC staff has initiated action to better align NRC's defect reporting guidance with Section 206 of the *Energy Reorganization Act*. However, NRC will need to take further action so that NRC's implementation of Part 21 fully meets the intent of Section 206.

Despite Section 206 requirements for licensees that operate nuclear power plants to notify NRC of defects in basic components that could cause a substantial safety hazard, NRC staff have noted Part 21 reporting issues, and Office of the Inspector General (OIG) analysis of industry data indicate that there are apparent unreported Part 21 defects. These reporting issues exist because NRC regulations and guidance for implementing Section 206 are contradictory and unclear, and the NRC Baseline Inspection Program does not include requirements to inspect licensee reporting of Part 21 defects. Unless NRC takes action to fully implement Section 206, the margin of safety for operating reactors could be reduced.

RECOMMENDATIONS

This report makes five recommendations to improve NRC's implementation of Part 21. A list of these recommendations appears on pages 12-13 of this report.

AGENCY COMMENTS

On January 19, 2011, OIG issued the discussion draft of this report to the Executive Director for Operations. OIG subsequently met with NRC management officials and staff during a February 1, 2011, exit conference at which time the agency requested additional time in order to provide informal comments. OIG met with agency management and staff on February 23, 2011, to discuss these comments; afterward, OIG incorporated the informal comments into the draft report as appropriate. NRC management and staff reviewed the revised draft OIG report, found that the report will be helpful in adding clarity in the associated regulatory area, and opted not to provide formal comments.

ABBREVIATIONS AND ACRONYMS

CFR	Code of Federal Regulations
EQVB	Division of Engineering, Quality and Vendor Branch
IP	Inspection Procedure
LER	Licensee Event Report
NRC	Nuclear Regulatory Commission
NRR	Office of Nuclear Reactor Regulation
OIG	Office of the Inspector General

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I. BACKGROUND

The Nuclear Regulatory Commission (NRC) endeavors to protect the public health and safety and the environment through the regulation of the 104 operating nuclear power plants in the United States. The *Energy Reorganization Act of 1974, as Amended, Section 206, Noncompliance*⁵ provides the statutory basis for NRC guidance and regulations that pertain to reporting component defects⁶ in operating reactors. Specifically, Section 206:

- Requires licensees that operate nuclear power plants to notify NRC of defects in basic components⁷ that could cause a substantial safety hazard.⁸
- Requires NRC to define, by regulation, defects which could create a substantial safety hazard.
- Identifies the civil penalties that are to be imposed for noncompliance and posting requirements at licensees' facilities, and authorizes inspections and other enforcement activities needed to ensure compliance with the provisions.

NRC Component Defect Reporting Regulation

Title 10, Code of Federal Regulations (CFR), Part 21, *Reporting of Defects and Noncompliance (Part 21)* implements the provisions of Section 206. Part 21 requires that licensees inform NRC if they obtain

⁵ For the purposes of this report, *Energy Reorganization Act of 1974, as Amended, Section 206, Noncompliance* is referred to as Section 206.

⁶ A defect is a deviation in a basic component delivered to a purchaser for use in operating nuclear power plants if, on the basis of an evaluation, the deviation could create a substantial safety hazard.

⁷ A basic component is a structure, system, or component that assures the integrity of the reactor coolant pressure boundary; the capability to shut down the reactor and maintain it in a safe shutdown condition; or the capability to prevent or mitigate the consequences of accidents. It is, essentially, a safety-related component.

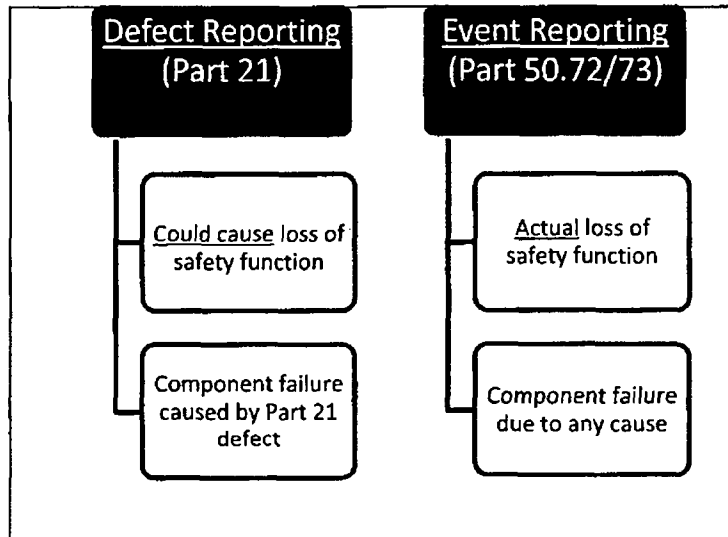
⁸ A substantial safety hazard is the loss of safety function to the extent that there is a major reduction in the degree of protection provided to public health and safety. Safety functions are necessary to assure the integrity of the reactor coolant pressure boundary, the capability to shut down the reactor and maintain it in a safe shutdown condition, or the capability to prevent or mitigate the consequences of accidents that could result in certain potential offsite exposures.

information that indicates that basic components fail to comply with regulatory requirements relating to substantial safety hazards or contain defects that could create a substantial safety hazard.

NRC revised Part 21 in 1991. Among other things, the revision was intended to reduce duplicative licensee reporting requirements, and allow for reporting of defects under NRC event reporting regulations. These NRC event reporting regulations are contained in Title 10, CFR, Part 50.72 and Part 50.73 (Part 50 Sections 72/73).⁹

There are differences between Part 21 and Part 50 Sections 72/73 reporting requirements. One difference is that Part 21 concerns itself with component defect reporting, whereas Part 50 Sections 72/73 describe event reporting. Consequently, the thresholds for reporting a component defect under Part 21 are different than those for Part 50 Sections 72/73, as shown in Figure 1.

Figure 1: Defect Reporting vs. Event Reporting Differences



Source: Office of the Inspector General analysis of reporting requirements.

Another difference between the Part 21 defect reporting and Part 50 Sections 72/73 event reporting requirements is that Part 21 defect reporting requires an evaluation *and* report if the defect *could* cause a loss of safety function, whereas Part 50 Sections 72/73 events require

⁹ Title 10, CFR, Part 50.72, *Immediate notification requirements for operating nuclear power reactors*, describes how licensees must notify NRC of events and conditions and Title 10, CFR Part 50.73, *Licensee event report system*, describes the type of events and conditions that must be reported to NRC in Licensee Event Reports.

reporting of only *actual* losses of safety function.¹⁰ In addition, Part 21 defect reporting requirements include individual component failures if the failures are caused by a defect. Part 50 Sections 72/73 would not require reporting of an individual component failure unless the failure caused a loss of safety function. Typically, safety functions are supported by multiple redundant components—such as multiple service water pumps—so that loss of a single component does not cause a loss of safety function.

To illustrate the difference, two nuclear power plants could experience the same basic component failure due to a defect that did not cause an event. Some licensees interpret this as reportable under Part 21, whereas others do not, since an event did not occur based on Part 50 Sections 72/73. However, Section 206 (which provides the statutory basis for Part 21) requires reporting of component defects that *could* cause a loss of safety function as well as those that did cause an actual loss of safety function. Part 50 Sections 72/73 only requires reporting if a failure *actually* caused a loss of safety function.

Office of Nuclear Reactor Regulation (NRR) Responsibility for Part 21 Implementation

The primary NRC office responsible for Part 21 implementation among licensees with operating plants is NRR. Two NRR divisions are responsible for monitoring and enforcing Part 21-related issues:

- Division of Engineering, Quality and Vendor Branch (EQVB).

¹⁰ Part 50 Sections 72/73 require power reactor licensees to notify NRC of any event or condition that at the time of discovery could have prevented the fulfillment of the safety function of structures or systems that are needed to (A) shut down the reactor and maintain it in a safe shutdown condition, (B) remove residual heat, (C) control the release of radioactive material, or (D) mitigate the consequences of an accident. Furthermore, Part 50 Sections 72/73 state that events required to be reported under Part 50 Sections 72/73 may include one or more procedural errors; equipment failures; and/or discovery of design, analysis, fabrication, construction, and/or procedural inadequacies. However, individual component failures need not be reported under Part 50 Sections 72/73 if redundant equipment in the same system was operable and available to perform the required safety function.

- EQVB is primarily responsible for reviewing nuclear reactor operating experience relevant to the quality of components regulated under Part 21. EQVB works closely with NRR's Operating Experience Branch to identify Part 21-related issues. EQVB also provides oversight through inspection and allegation follow-up of quality assurance and Part 21 implementation for component manufacturers.
- Division of Inspection and Regional Support, Operating Experience Branch.
 - The Operating Experience Branch is part of an NRC coordinated program to systematically collect and evaluate licensee operating experience, identify and resolve safety issues in a timely manner, and apply lessons learned from operating experience to support the agency goal of ensuring safety. Such reviews include evaluation of Part 50 Sections 72/73 licensee event reports (LER) for event occurrences that have Part 21 defective component implications.

II. PURPOSE

The audit objective was to determine if NRC's implementation of Federal regulations requiring reactor licensees to report defects contained in installed equipment is meeting the intent of the *Energy Reorganization Act of 1974, as Amended, Section 206, Noncompliance*. The report appendix contains information on the audit scope and methodology.

III. FINDING

NRC staff has initiated action to better align NRC's defect reporting guidance with Section 206 of the *Energy Reorganization Act*. However, NRC will need to take further action so that NRC's implementation of Part 21 fully meets the intent of Section 206.

Section 206 requires licensees that operate nuclear power plants to notify NRC of defects in basic components that could cause a substantial safety hazard. However, NRC staff have noted Part 21 reporting issues, and Office of the Inspector General (OIG) analysis of industry data indicate that there are apparent unreported Part 21 defects. These reporting issues exist because NRC regulations and guidance for implementing Section 206 are contradictory and unclear, and the NRC Baseline Inspection Program does not include requirements to inspect licensee reporting of Part 21 defects. Unless NRC takes action to fully implement Section 206, the margin of safety for operating reactors could be reduced.

Despite Reporting Requirements, There Are Unreported Part 21 Defects

Despite Section 206 requirements for licensees that operate nuclear power plants to notify NRC of defects in basic components that could cause a substantial safety hazard, examples indicate that there are defective components that should be reported under Part 21, but are not. Specifically, NRC headquarters and regional staff and OIG have identified apparent unreported Part 21 defects. Furthermore, NRC staff and licensees described examples of licensees' standard practice for reporting defective components that may result in the under-reporting of defects under Part 21.

Identification of Part 21 Reporting Defects

NRC staff identified examples of apparent unreported defective components that could cause a substantial safety hazard as described in LERs under Part 50 Sections 72/73, but were not reported as Part 21 defective components. Since mid-2009, when NRC inspectors became aware of potentially unreported defects during an inspection of a plant, agency staff have been evaluating LERs for potentially unreported defects under Part 21. Furthermore, NRR staff conducted an analysis of LERs

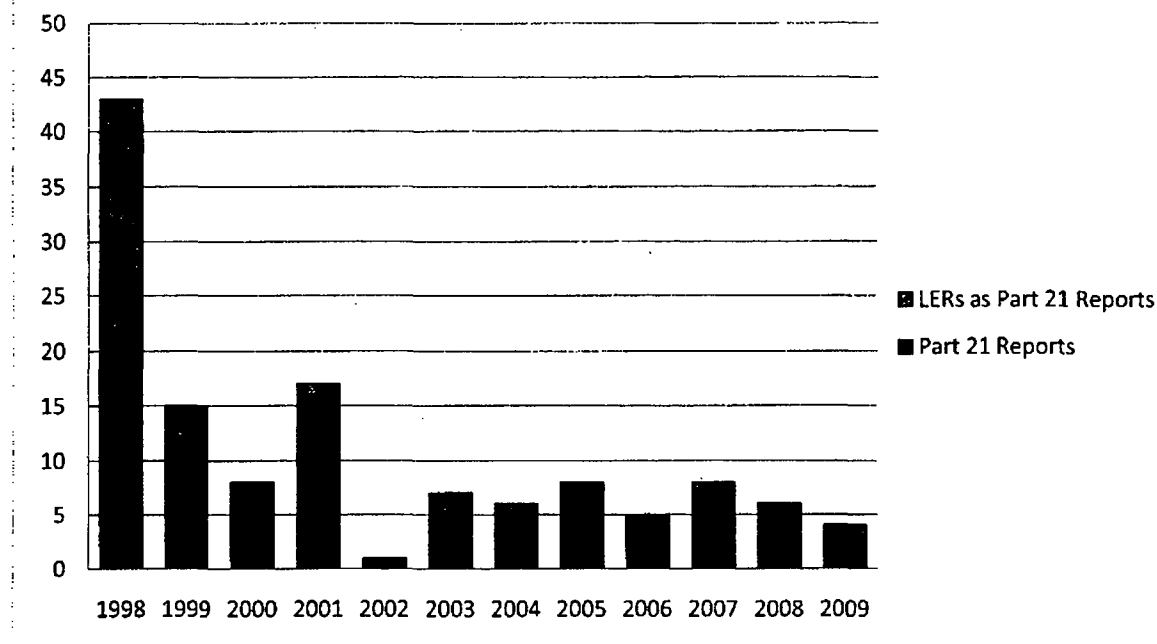
with potential Part 21 implications during the period December 2009 through September 2010, and identified 24 instances of LERs that had Part 21 implications but were not reported under Part 21.

OIG staff also identified examples of apparent unreported defective components. OIG independently analyzed LERs submitted under Part 50 Sections 72/73 and found some describing defective components that could cause substantial safety hazards, but were not reported to NRC under Part 21. During the period June 2009 through June 2010, OIG identified 11 LERs that contained apparent Part 21 reportable defects where the licensee had not indicated that it had conducted a Part 21 evaluation or provided a Part 21 report. Given that the period of review for OIG's analysis of LERs was different than the agency's review period, OIG auditors requested NRR staff to review the OIG analysis results. NRR staff concurred that 5 of the 11 LERs that OIG identified had apparent Part 21 reportable defects. NRR staff either did not support or could not determine if the remaining LERs also had potential Part 21 reportable defects based on the data available in the LERs.

Further, OIG reviewed three reactor control room logs recorded during the 4th quarter of 2009. OIG's analysis indicates that for every safety-related component failure that occurs and is reported, there are several that occur but do not meet the level of reportability using Part 50 Sections 72/73 reporting criteria.

OIG also calculated for each year the number of Part 21 reports filed by licensees since 1998. As Figure 2 indicates, there was a significant decline in the number of Part 21 reports after 2001. Figure 2 also indicates how many Part 21 reports were made through LERs according to Part 50 Sections 72/73 reporting criteria.

Figure 2: Part 21 Reports from Nuclear Power Plants, 1998-2009



Source: OIG analysis of NRC data.

Examples of Licensee Standard Practices for Reporting Defective Components

During the course of the review, OIG met with agency and industry stakeholders to ascertain licensees' standard practices for reporting defective components under Part 21. NRC staff and licensees described to OIG some examples of Part 21 reporting practices that indicate there are unreported defective components.

NRC senior resident inspectors described licensee Part 21 reporting practices that indicate unreported defective components. Four of seven senior resident inspectors interviewed by OIG described a practice wherein licensees (1) evaluate whether a defective component caused an event under 50.72 reporting criteria, but (2) fail to follow up with a Part 21 evaluation or submit a Part 21 report when the 50.72 evaluation concludes that the events caused by the defective component did not reach the threshold for reporting under Part 50 Sections 72/73. Senior resident inspectors provided OIG with the following examples:

- LERs that should have been reported under Part 21, but were not.

- The licensee belief that loss of safety function was required to conduct a Part 21 evaluation and report.¹¹
- A licensee that considers Part 50 Sections 72/73 event reporting evaluations to meet Part 21 defect reporting requirements, even if the Part 50 Sections 72/73 evaluation result is that the event is not reportable to NRC.
- A licensee that has opted not to conduct Part 21 evaluations or reports because, according to the licensee, current regulations and guidance do not require this as long as they did an event reporting evaluation.

NRC licensees also described their Part 21 reporting practices in a manner that further indicated the likelihood of unreported defective components. Some industry representatives stated that, as standard practice, they do not notify NRC of Part 21 defects unless the defects are reportable under Part 50 Sections 72/73 event reporting regulations. Based on interviews and analysis, OIG determined that licensees representing at least 28 percent of the operating reactor fleet do not, as standard practice, notify NRC of defects under Part 21 unless they are reportable under event reporting regulations.

NRC Regulations and Guidance for Implementing Section 206 Are Contradictory and Unclear

Part 21 component defect reporting issues exist because NRC regulations and guidance for implementing Section 206 are contradictory and unclear. Specifically, NRC regulations and guidance for implementing Section 206 contain stipulations that have been interpreted as not requiring a report under Part 21 if an LER was not required. This interpretation seemingly contradicts Section 206, which requires reporting of component defects that could cause substantial safety hazards. Furthermore, applicable NRC reportability guidance is not utilized by some licensees and NRC staff, and NRC's Baseline Inspection Program does not include requirements to inspect licensee reporting of Part 21 defects.

¹¹ As shown earlier in Figure 1, Part 21 requires reporting the defect if a failure *could* cause loss of safety function, not if it actually does.

NRC Regulations and Guidance Are Interpreted as Relieving Licensees of Defect Reporting Obligations

NRC regulations and guidance for implementing Section 206 contain stipulations that some licensees and NRC staff have interpreted as relieving licensees of their obligation to report to NRC defects in basic components that could cause a substantial safety hazard. This includes specific language in Part 21, a 1991 *Federal Register Notice* that summarized Part 21, and NRC guidance on event reporting in NUREG-1022.

The agency introduced some uncertainty regarding event reporting when it revised Part 21 in 1991. Part 21 Section 2(c), states:

For persons licensed to operate a nuclear power plant under part 50 ... of this chapter, evaluation of potential defects and appropriate reporting of defects under §§ 50.72, 50.73 ... satisfies each person's evaluation, notification, and reporting obligation to report defects under this part.

Moreover, the agency has interpreted language from the July 31, 1991, *Federal Register Notice*, Statement of Consideration as guidance to facilitate implementation of Part 21 Section 2(c). The Statement of Consideration provides the following sentence which can also be seen as contradictory to Section 206:

If the event is determined not to be reportable under §50.72 or §50.73, then the obligations of Part 21 are met by the evaluation.

Additionally, in October 2000, NRC revised NUREG-1022, which provides event reporting guidelines for Part 50 Sections 72/73. This 115-page guidance document offers a three-paragraph subsection on Part 21, which states (in part):

The only case where a defect in a basic component of an operating reactor might be reportable under Part 21, but not under §§ 50.72, 50.73 ... would involve parts on the shelf.¹²

This language effectively leaves NUREG-1022 in conflict with Section 206.

The combination of the changes to Part 21 and associated guidance have resulted in a lack of clarity for implementing Section 206. Given these written passages in Part 21.2(c), NUREG-1022, and the July 31, 1991, Statement of Consideration, some licensees have concluded that if they conduct evaluations consistent with event evaluation and reporting thresholds, then they have also met Part 21's evaluation and reporting requirements. Some NRC resident inspectors shared this interpretation as well. One resident inspector indicated to OIG that conducting a Part 50 Sections 72/73 evaluation and/or report fulfilled a licensee's Part 21 requirements. Another resident inspector asserted that Part 21 evaluations and reporting are more the responsibility of the vendor than the licensee.

To resolve confusion about implementing Part 21 component defect reporting and to better align NRC's defect reporting guidance with Section 206, NRC regional office personnel sought clarification from NRC management officials. However, NRC management officials have responded that defect reporting guidance and Part 21 itself have resulted in multiple interpretations of Part 21 reporting requirements, which presents an obstacle towards clarifying Part 21 reporting.¹³ Consequently, NRC has not yet established a position that would result in consistent interpretation and application of Part 21 guidance and regulations on the part of NRC staff and resident inspectors, as well as licensees.

¹² Parts on the shelf refer to components that are in a nuclear power plant's inventory that have not been installed.

¹³ For example, recent inspections uncovered a potential Part 21 violation at a nuclear power plant that NRC has not resolved for the past 2 years.

Applicable Reportability Guidance Is Not Used

Existing NRC guidance for implementation of Part 21 is applicable, but not all NRC staff and licensees use it. NUREG-0302, *Remarks Presented (Questions/Answers Discussed) at Public Regional Meetings to Discuss Regulations (10 CFR Part 21) for Reporting of Defects and Noncompliance*, published in July 1977, contains guidance for Part 21 implementation and reporting. NUREG-0302 was published in 1977—prior to the changes in 1991 that allowed reporting under Part 50 Sections 72/73—and, therefore, does not include guidance on reporting Part 21 defects under Part 50 Sections 72/73.

According to agency staff, NUREG-0302 is not frequently used by less experienced staff because it is “35 years old,” and is composed of public meeting summaries. Consequently, newer staff are not as familiar with NUREG-0302. Agency staff surmised that less experienced staff are more likely to use recent guidance, such as the Statement of Consideration, NUREG-1022, and less formal information obtained during training. Senior NRR staff also indicated that the question-and-answer format and numbering schematic in NUREG-0302 make it difficult to use. NRR staff agreed that the guidance in NUREG-0302 remains valid to this day, despite its lack of visibility to newer staff.

NRC Baseline Inspection Program Does Not Include Requirements To Inspect Licensee Reporting of Part 21 Defects

The NRC Baseline Inspection Program does not include requirements to inspect licensee reporting of Part 21 defects.¹⁴ Currently, the NRC Baseline Inspection Program does not include a reference to Part 21-related Inspection Procedures (IP). IP 36100, *Inspection of 10 CFR Parts 21 and 50.55(e) Programs for Reporting Defects and Noncompliance*, provides guidance to NRC inspectors for inspecting Part 21 reporting at operating nuclear power plants. Senior resident inspectors told OIG that they are aware of IP 36100, but there was no “hook” in the Baseline

¹⁴ The Baseline Inspection Program is an integral part of the NRC's reactor oversight process. Its objectives are to (1) obtain inspection information and performance indicators to assess safety performance of power reactor licensees, (2) determine the licensee's ability to identify and assess risk and effectively correct issues, (3) verify accuracy and completeness of performance indicators, and (4) provide a mechanism for the NRC to remain cognizant of plant status and conditions.

Inspection Program that would prompt an inspector to consider conducting an inspection using IP 36100.¹⁵

Incomplete Implementation of Section 206 Could Reduce the Margin of Safety for Operating Reactors

Incomplete implementation of Section 206 could reduce the margin of safety for operating nuclear power reactors as NRC may remain unaware of component failures that have resulted from manufacturing defects. Unless NRC takes further action to sufficiently implement Section 206, staff and stakeholders may not be notified of component defects. For example, given current interpretations of regulations and guidance related to defect reporting, a licensee might not report a basic component that failed due to a design defect. Other licensees that use the same component, as well as component manufacturers, may be unaware of the problem. Absent knowledge of manufacturing defects, NRC and its stakeholders will also not be able to trend such information.

Additionally, NRC inspectors face difficulties in enforcing defect reporting given the lack of clarity in Part 21 and related guidance. As noted earlier, NRC inspectors have found possible Part 21 reporting violations. However, pending resolution of the contradictory and unclear guidance and regulations, the agency has opted not to cite licensees for violations and not issue civil penalties for licensees' failure to notify NRC of defects in basic components that could cause a substantial safety hazard. Therefore, NRC is not fully enforcing the Part 21 regulation as required by Section 206. Furthermore, NRC has not levied any civil penalties or significant enforcement actions for nuclear power plant licensee Part 21 defect reporting lapses in at least the past 8 years.

Recommendations

OIG recommends that the Executive Director for Operations:

1. *Revise 10 CFR Part 21 for full conformity with the Energy Reorganization Act of 1974, As Amended, Section 206, Noncompliance.*

¹⁵ The Baseline Inspection Program does not currently include guidance for how inspectors should check for defective parts. NRR staff have indicated this is a condition that should be corrected.

2. Expedite publication of interim guidance that specifies requirements for Part 21 reporting in accordance with the *Energy Reorganization Act of 1974, As Amended, Section 206, Noncompliance*.
3. Correct the sections of NUREG-1022, *Event Reporting Guidelines 10 CFR 50.72 and 50.73, October 2000*, that are in conflict with the *Energy Reorganization Act of 1974, as Amended, Section 206, Noncompliance* and 10 CFR Part 21.
4. Review, revise as applicable, and reissue NUREG-0302, *Remarks Presented (Questions/Answers Discussed) at Public Regional Meetings to Discuss Regulations (10 CFR Part 21) for Reporting of Defects and Noncompliance, July 12 - 26, 1977*.
5. Incorporate Inspection Procedure 36100, *Inspection of 10 CFR Parts 21 and 10 CFR 50.55(e) Programs for Reporting Defects and Noncompliance* into the NRC Baseline Inspection Program.

IV. AGENCY COMMENTS

On January 19, 2011, OIG issued the discussion draft of this report to the Executive Director for Operations. OIG subsequently met with NRC management officials and staff during a February 1, 2011, exit conference at which time the agency requested additional time in order to provide informal comments. OIG met with agency management and staff on February 23, 2011, to discuss these comments; afterward OIG incorporated the informal comments into the draft report as appropriate. NRC staff reviewed the revised draft OIG report, found that the report will be helpful in adding clarity in the associated regulatory area, and opted not to provide formal comments.

SCOPE AND METHODOLOGY

The audit objective was to assess the extent to which NRC's implementation of Federal regulations requiring nuclear power reactor licensees to report defects contained in installed equipment is meeting the intent of the *Energy Reorganization Act of 1974, as Amended, Section 206, Noncompliance*. The audit scope was limited to NRC's regulatory responsibilities as they pertain to commercial nuclear power plants. To address the audit objective, OIG interviewed agency headquarters and regional staff, senior resident and resident inspectors, and selected licensee officials. OIG also reviewed NRC regulations and guidance as well as LERs and Part 21 reports for the period June 2009 through June 2010 and various inspection reports. OIG also analyzed control room logs for three reactor units, as well as agency-collected information pertaining to potentially unreported Part 21 defects.

Key documents reviewed include:

- *Energy Reorganization Act of 1974, as Amended, Section 206, Noncompliance.*
- *10 CFR Part 21, Reporting of Defects and Noncompliance.*
- *NUREG-0302, Rev 1, Remarks Presented (Questions/Answers Discussed) at Public Regional Meetings to Discuss Regulations (10 CFR Part 21) for Reporting of Defects and Noncompliance.*
- *Federal Register Notice, Vol. 56, No. 147, Statement of Consideration, Part 21.*
- *NUREG-1022, Rev 2, Event Reporting Guidelines for 10 CFR 50.72 and 50.73.*
- *Management Directive (MD) 8.18, NRC Generic Communications Program.*
- *Inspection Procedure 36100, Inspection of 10 CFR Parts 21 and 10 CFR 50.55(e) Programs for Reporting Defects and Noncompliance.*

- Agency Office Instructions.
- Agency Generic Communications.
- Nuclear industry guidance documents.

Auditors conducted interviews with agency and industry employees, including NRC managers and staff members at headquarters and the regions, and members of the nuclear industry.

We conducted this performance audit at NRC headquarters in Rockville, MD, from July 2010 through December 2010, in accordance with generally accepted Government auditing standards. Those standards require that the audit is planned and performed with the objective of obtaining sufficient, appropriate evidence to provide a reasonable basis for any findings and conclusions based on the stated audit objective. OIG believes that the evidence obtained provides a reasonable basis for the report findings and conclusions based on the audit objectives. Internal controls related to the audit objective were reviewed and analyzed. Throughout the audit, auditors were aware of the possibility or existence of fraud, waste, or misuse in the program.

Major contributors to this report were R.K. Wild, Team Leader; Kevin Nietmann, Senior Technical Advisor; Vicki Foster, Audit Manager; Timothy Wilson, Senior Management Analyst; and Diane Furstenau, Student Management Analyst.



China Meteorological Administration

**National Meteorological Center
Beijing, China**

RSMC for Environmental Emergency Response

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TO: Operational Contacts of National Meteorological Services in RAII,

IAEA, WMO Secretariat,

RSMC Tokyo, and

RSMC Obninsk

From: RSMC Beijing

Date: Mar 17, 2011

Time: 18:40 UTC

Dear Colleagues,

Please find attached the Joint Statement of RAII for Environmental Emergency Response (EER) distributed by RSMC Tokyo, RSMC Obninsk, and RSMC Beijing.

Best regards,
RSMC Beijing

Total No. of pages including this sheet: 3

1/3

DK 1637 of 1892

JOINT STATEMENT

by: RSMC Tokyo(JP), RSMC Obrninsk(RU) and RSMC Beijing(CN)

Emergency notified by the IAEA (Emergency)

Issued: 18:30 UTC, Mar. 17, 2011

RADIOLOGICAL EVENT DETAILS

Source:

Fukushima Dai-ichi, Japan

Location:

37.4206 degrees North latitude, 141.0329 degrees East longitude

Release date-time:

From: 22:00 UTC 14 Mar 2011

To: 04:30 UTC 16 Mar 2011

Comments:

Emergency Accident

RSMC Tokyo's model integrated for 122 hours while the model of RSMC Beijing and RSMC Obrninsk integrated only for 72 hours.

Weather Situation

Northwesterly winter monsoon flow prevails over the eastern and northern part of Japan. This condition is expected to continue up to around 00UTC 18 March. Its associated weak precipitation is expected around the Japan Sea side of Japan Islands and over the sea east of Japan. Then a high pressure system is expected to cover the most part of Japan Islands although an upper trough will pass the northern part of Japan temporarily.

Trajectories

RSMC Beijing forecasts the material released at 500m and 1500m goes to north-east during the first 48 hours, and then makes a clockwise turn; while at 3000m, the tracer is always going to the east during the 72 hours.

RSMC Tokyo predicts that the tracer released at 500m will move to the northeast in the first 72 hours from the start of emissions and then turn to the north during the rest of the forecast period. The tracer released at 1500m will move to the northeast in first 72 hours from the start of emissions and then turn to the north during the following 24 hours and then turn to the south during the rest of the forecast period. The tracer released at 3000m will move to the northeast in the first 24 hours from the start of emissions and then turn to the east during the following 48 hours and then turn to the

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northeast during the rest of the forecast period.

RSMC Obrinsk's simulation shows that the tracers at 500m moves to the west first and then goes to the southeast in the rest forecast period; the tracer at 1500m goes to the northeast in the first 24 hours and then turn to southeast.; while at 3000m the tracer moves to northeast in the first 36 hours then goes to east.

Exposure

For the both species, the three models forecast the exposure areas will spread toward southeast for the first hours and then spread to eastward for the rest of forecast period.

Depositions

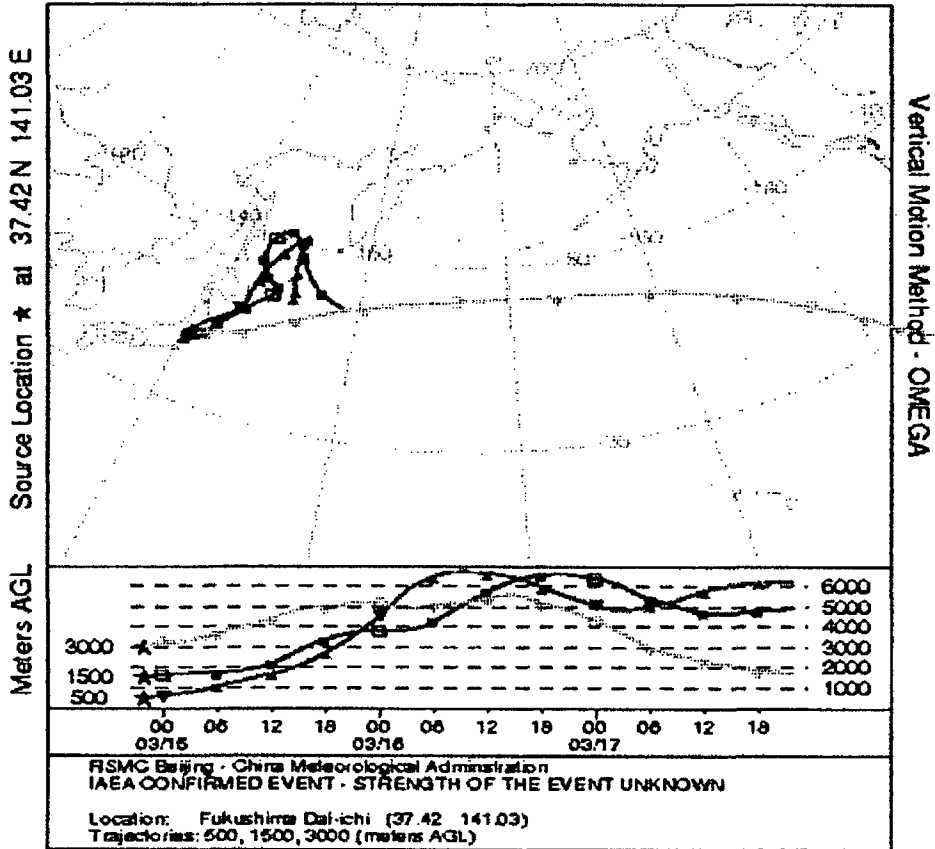
The simulation results of RSMC Beijing and RSMC Obrinsk show that deposition areas cover the central and eastern part of Japan and lays over the northwest of the Pacific Ocean; while RSMC Tokyo forecasts the deposition areas for the forecast period cover the eastern part of Japan and the western and eastern part of the North Pacific Ocean. The difference is mainly due to the different integrated time of the models.

Summary

There would be a hazard around eastern part of Japan and western part of the North Pacific Ocean.

END

RSMC BEIJING - CHINA METEOROLOGICAL ADMINISTRATION
 Forward trajectories starting at 22 UTC 14 Mar 11
 12 UTC 14 Mar CMAG Forecast Initialization

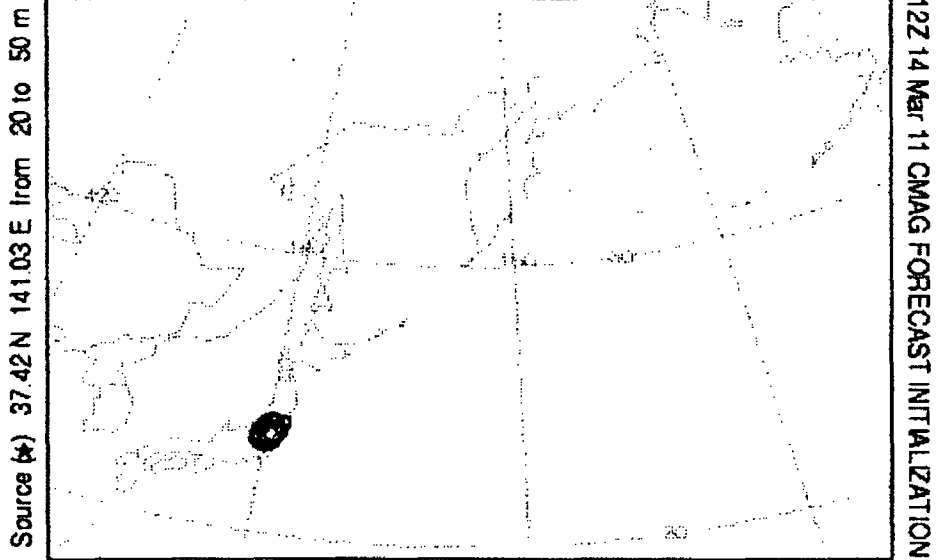


RSMC BEIJING - CHINA METEOROLOGICAL ADMINISTRATION

Exposure averaged between 0 m and 500 m (Bq-s/m³)

Integrated from 12z 14 Mar to 12z 15 Mar (UTC)

C137 Release Started at 22z 14 Mar (UTC)



1.0E-10 1.0E-11 1.0E-12 1.0E-13 1.0E-09 Maximum at square

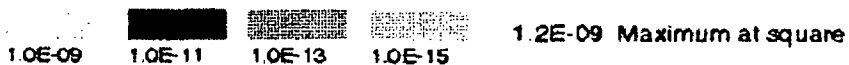
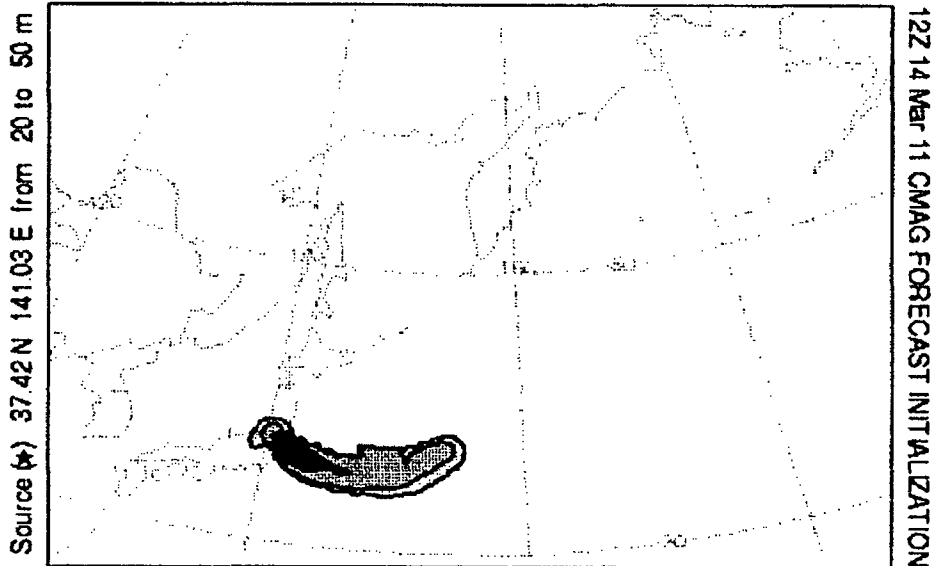
IAEA CONFIRMED EVENT - STRENGTH OF THE EVENT UNKNOWN
Location: Fukushima Dai-ichi (37.42 141.03)
Meteorology: GT215
Emission: 1.0 Bq of C137 over 30 hr
Distribution: Uniform between 20 m - 60 m agl
Deposition: Wet and Dry (0.1 cm/s)
Notes: Contours may change from map to map
Results based on default values

RSMC BEIJING - CHINA METEOROLOGICAL ADMINISTRATION

Exposure averaged between 0 m and 500 m (Bq-s/m³)

Integrated from 12z 15 Mar to 12z 16 Mar (UTC)

C137 Release Started at 22z 14 Mar (UTC)



IAEA CONFIRMED EVENT - STRENGTH OF THE EVENT UNKNOWN
Location: Fukushima Dai-ichi (37.42 141.03)
Meteorology: GT213
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Notes: Contours may change from map to map
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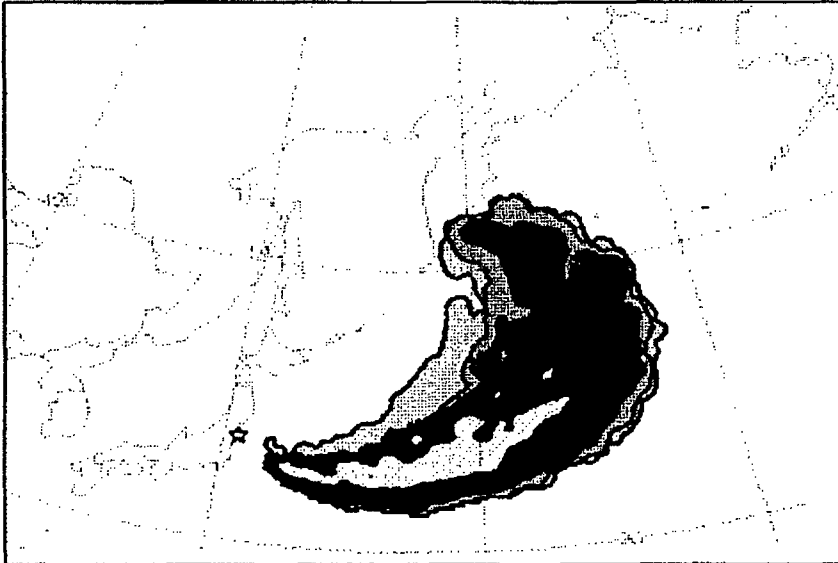
RSMC BEIJING - CHINA METEOROLOGICAL ADMINISTRATION

Exposure averaged between 0 m and 500 m (Bq-s/m³)

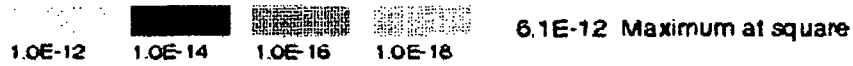
Integrated from 12z 16 Mar to 12z 17 Mar (UTC)

C-137 Release Started at 22z 14 Mar (UTC)

Source (*) 37.42 N 141.03 E from 20 to 50 m



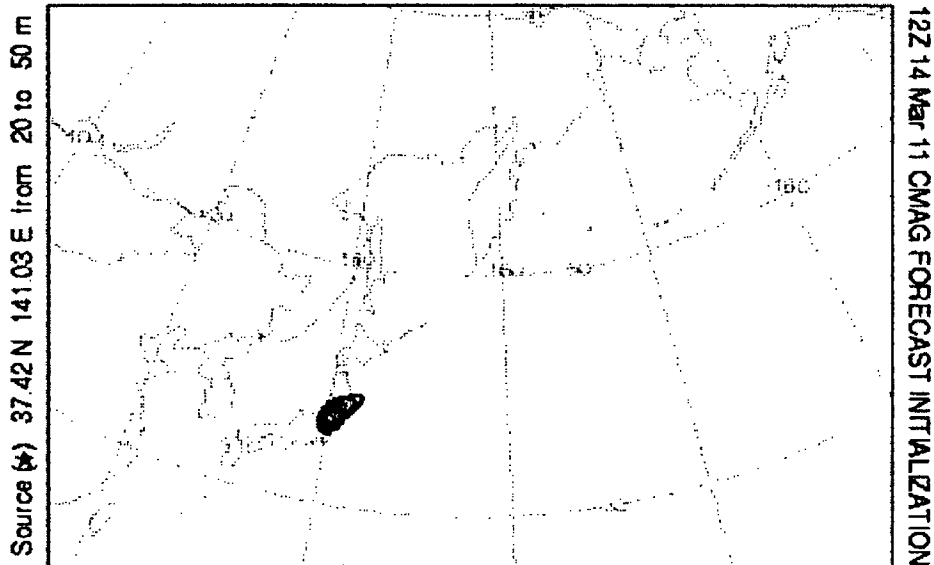
12Z 14 Mar 11 CMAG FORECAST INITIALIZATION



IAEA CONFIRMED EVENT - STRENGTH OF THE EVENT UNKNOWN
Location: Fukushima Dai-ichi (37.42 141.03)
Meteorology: GT213
Emission: 1.0 Bq of C137 over 30 hr
Distribution: Uniform between 20 m - 50 m agl
Deposition: Wet and Dry (0.1 cm/s)
Notes: Contours may change from map to map
Results based on default values

RSMC BEIJING - CHINA METEOROLOGICAL ADMINISTRATION

Deposition at Ground-Level (C137/m2)
Integrated from 12z 14 Mar to 12z 15 Mar (UTC)
C137 Release Started at 22Z 14 Mar (UTC)

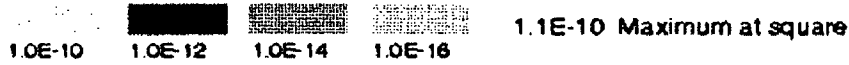
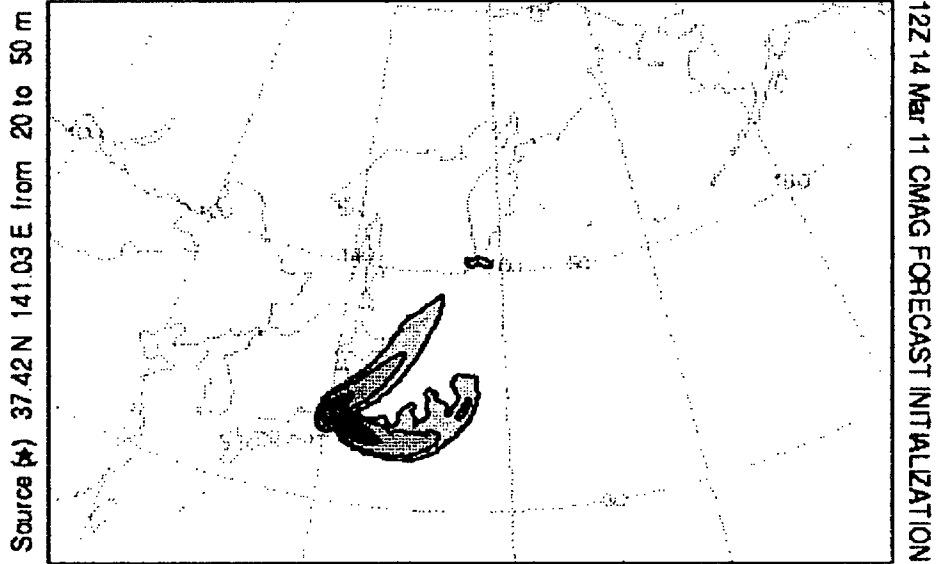


1.0E-11 1.0E-12 1.0E-13 1.0E-14 5.0E-11 Maximum at square

IAEA CONFIRMED EVENT - STRENGTH OF THE EVENT UNKNOWN
Location: Fukushima Dai-ichi (37.42 141.03)
Meteorology: GT213
Emission: 1.0 Bq of C137 over 30 hr
Distribution: Uniform between 20 m - 60 m agl
Deposition: Wet and Dry (0.1 cm/s)
Notes: Contours may change from map to map
Results based on default values

RSMC BEIJING - CHINA METEOROLOGICAL ADMINISTRATION

Deposition at Ground-Level (C137/m2)
Integrated from 12z 14 Mar to 12z 16 Mar (UTC)
C137 Release Started at 22Z 14 Mar (UTC)



IAEA CONFIRMED EVENT - STRENGTH OF THE EVENT UNKNOWN
Location: Fukushima Dai-ichi (37.42 141.03)
Meteorology: GT213
Emission: 1.0 Bq of C137 over 30 hr
Distribution: Uniform between 20 m - 50 m agl
Deposition: Wet and Dry (0.1 cm.s)
Notes: Contours may change from map to map
Results based on default values

RSMC BEIJING - CHINA METEOROLOGICAL ADMINISTRATION

Deposition at Ground-Level (Bq/m²)
Integrated from 12z 14 Mar to 12z 17 Mar (UTC)
C137 Release Started at 22Z 14 Mar (UTC)

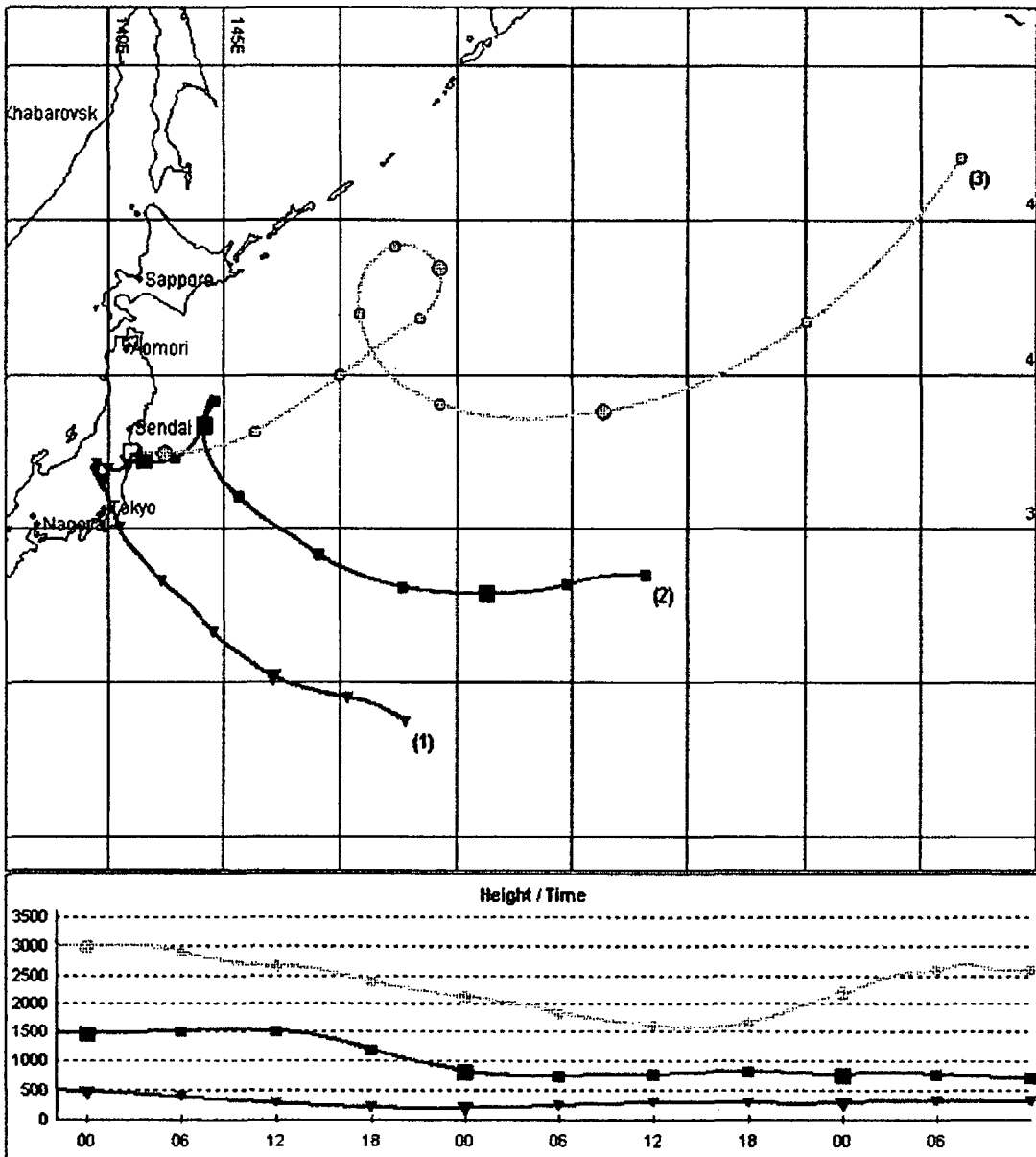


1.0E-11 1.0E-13 1.0E-15 1.0E-17 4.8E-11 Maximum at square

IAEA CONFIRMED EVENT - STRENGTH OF THE EVENT UNKNOWN
Location: Fukushima Dai-ichi (37.42 141.03)
Meteorology: GT213
Emission: 1.0 Bq of C137 over 30 hr
Distribution: Uniform between 20 m - 60 m agl
Deposition: Wet and Dry (0.1 cm^h)
Notes: Contours may change from map to map
Results based on default values

RSMC Obninsk, Russia

Forward trajectories



Levels: (1) 500 m (2) 1500 m (3) 3000 m

Date of release: 14 Mar 2011, 22:00 UTC

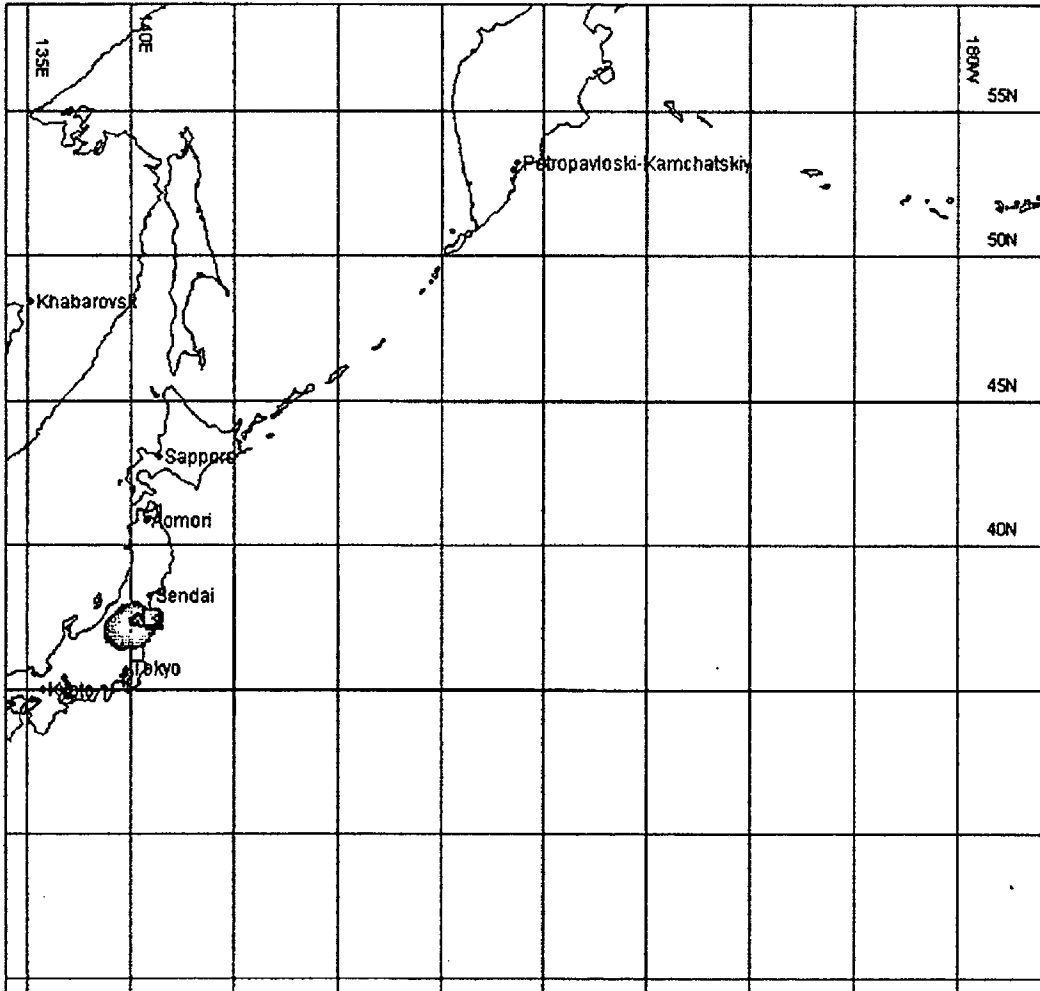
Source location: 141.03° E, 37.42° N

Chart 1/6

RSMC Obninsk, Russia

Time integrated surface to 500m layer concentrations

from 14 Mar 2011, 12:00 to 15 Mar 2011, 12:00 UTC



Contours: ■ 1e-09 □ 1e-10 ▣ 1e-11 ■ 1e-12

Maximum value: 3.3e-09 Bq*s/m³

Date of release: 14 Mar 2011, 22:00 UTC

Duration: 30:30

Source location: 141.03° E, 37.42° N

Vert. distribution: uniform 20-50 m

Total release: 1 Bq of I-131

Contour values may change from chart to chart

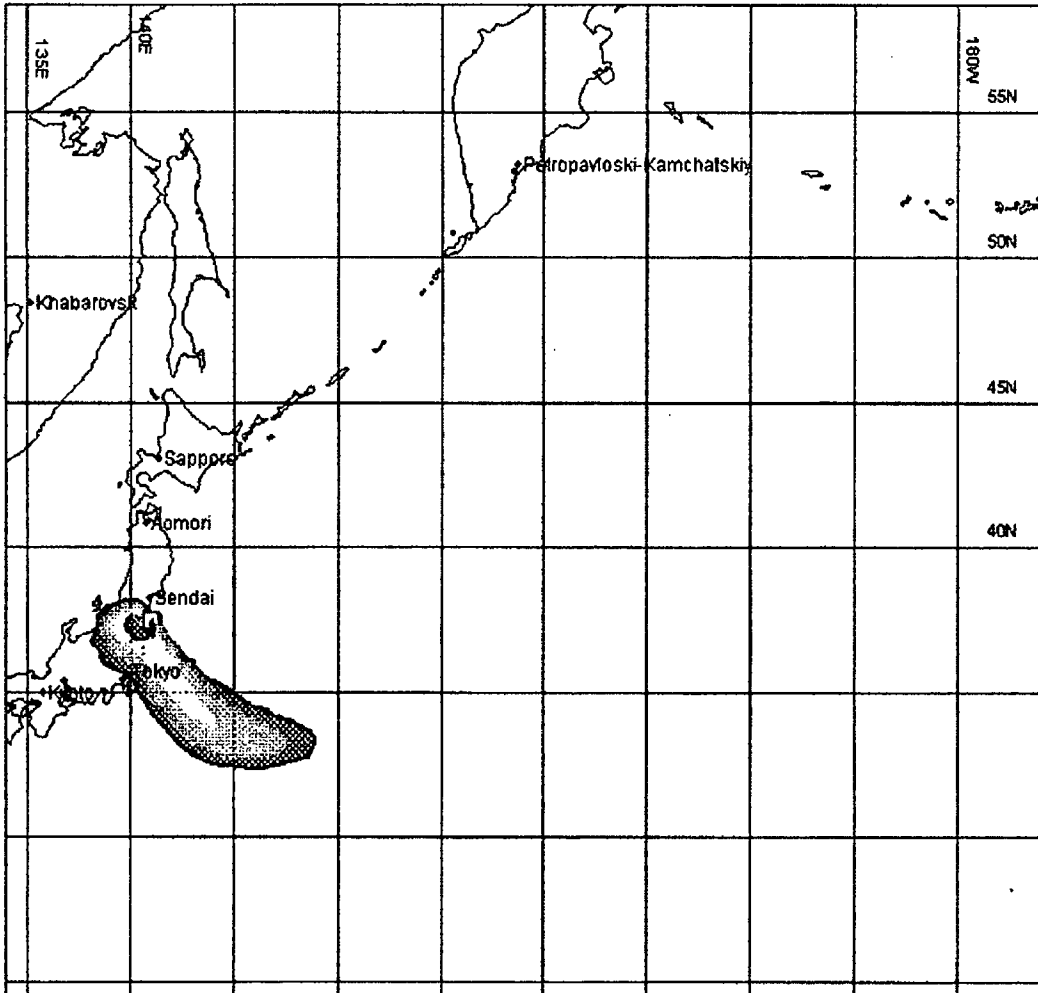
Results based on default initial values





Chart 3/6

RSMC Obninsk, Russia

Time integrated surface to 500m layer concentrations

from 15 Mar 2011, 12:00 to 16 Mar 2011, 12:00 UTC



Contours:  1e-09  1e-10  1e-11  1e-12

Maximum value: 5.6e-09 Bq*s/m³

Date of release: 14 Mar 2011, 22:00 UTC

Duration: 30:30

Source location: 141.03° E, 37.42° N

Vert. distribution: uniform 20-50 m

Total release: 1 Bq of I-131

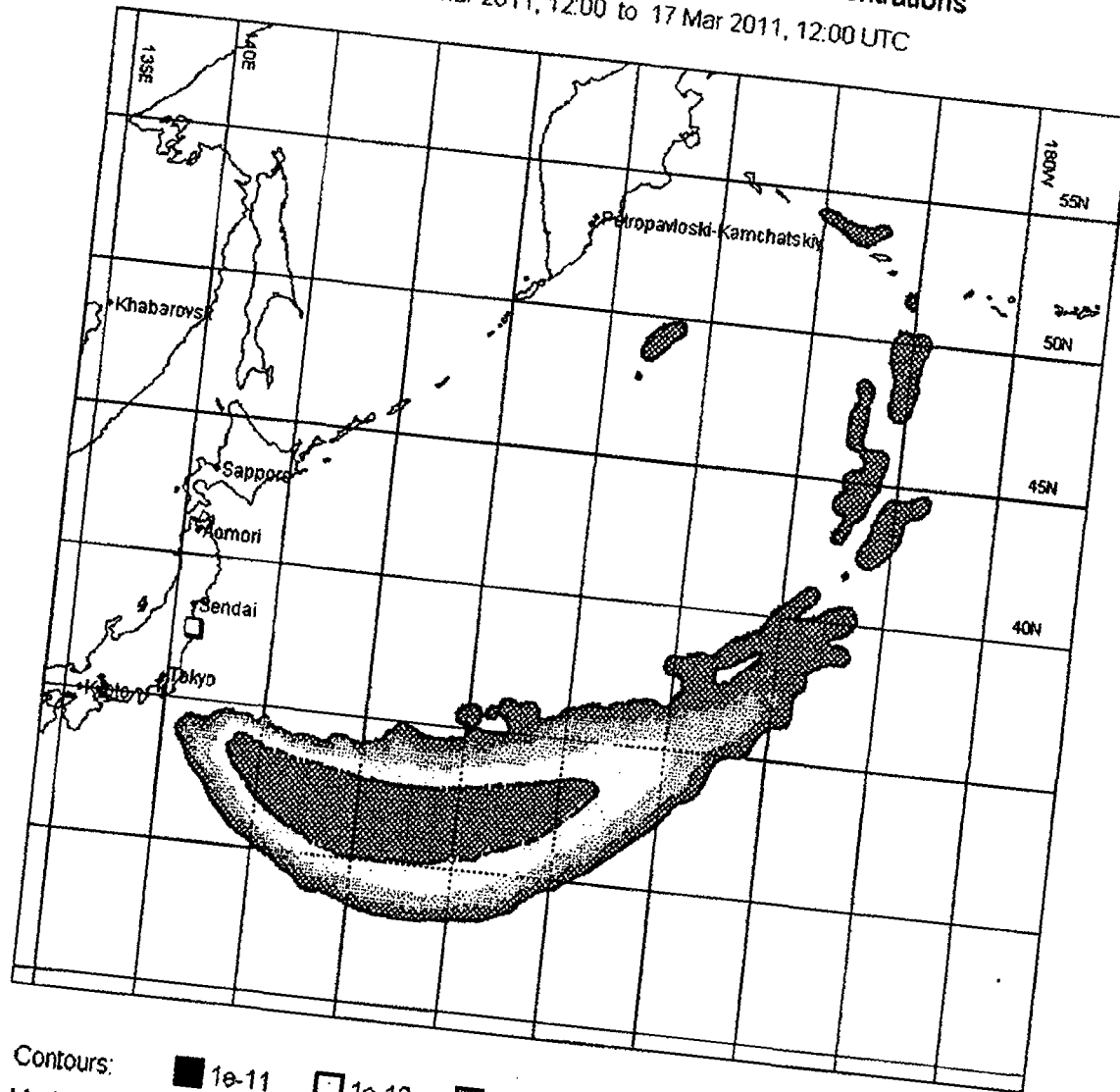
Contour values may change from chart to chart

Results based on default initial values

Chart 4/6

RSMC Obninsk, Russia

Time integrated surface to 500m layer concentrations
from 16 Mar 2011, 12:00 to 17 Mar 2011, 12:00 UTC



Contours: 1e-11 1e-12 1e-13 1e-14
Maximum value: 7.0e-11 Bq*s/m3

Date of release: 14 Mar 2011, 22:00 UTC

Source location: 141.03° E, 37.42° N

Total release: 1 Bq of I-131

Duration: 30:30

Vert. distribution: uniform 20-50 m

Contour values may change from chart to chart
Results based on default initial values

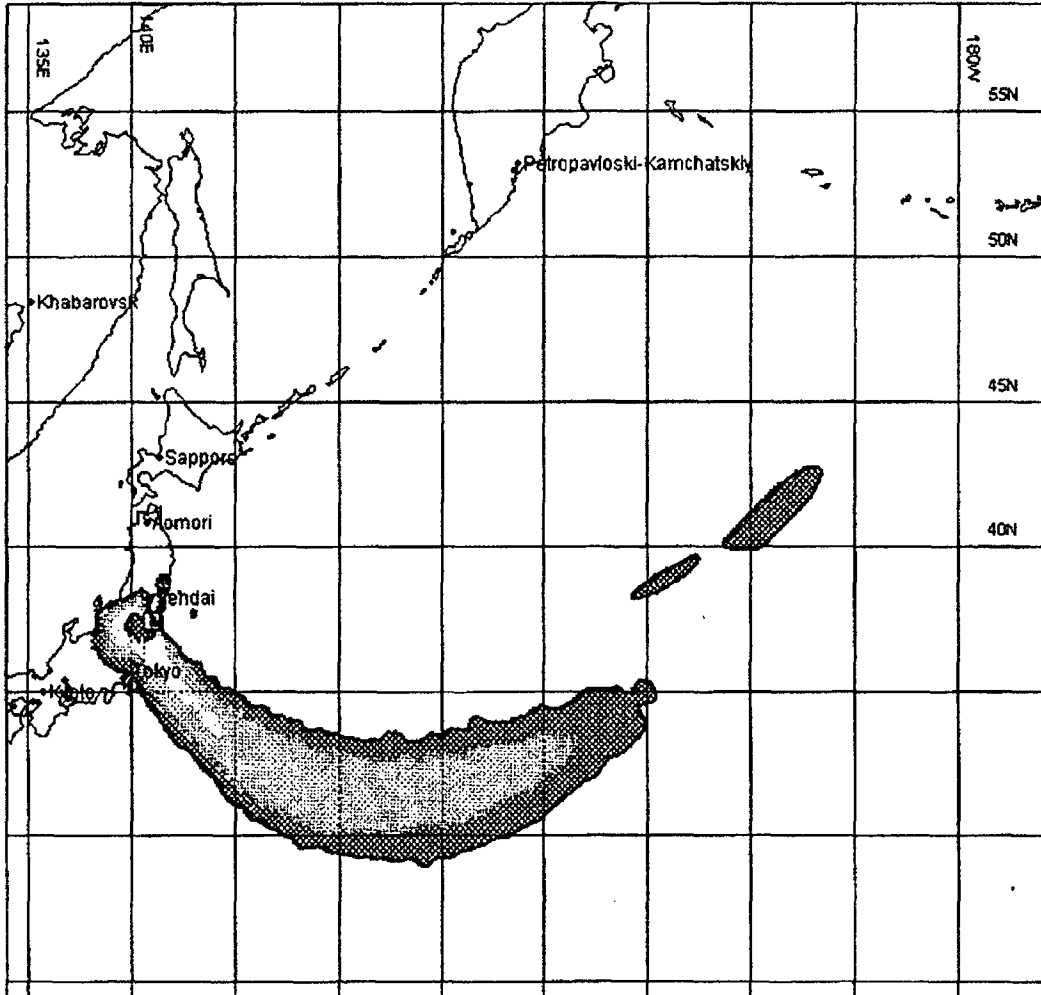
Chart 5/6

DK 1650 of 1892

RSMC Obninsk, Russia

Total deposition

from 14 Mar 2011, 12:00 to 17 Mar 2011, 12:00 UTC



Contours: 1e-11 1e-12 1e-13 1e-14

Maximum value: 1.2e-10 Bq/m²

Date of release: 14 Mar 2011, 22:00 UTC

Duration: 30:30

Source location: 141.03° E, 37.42° N

Vert. distribution: uniform 20-50 m

Total release: 1 Bq of I-131

Contour values may change from chart to chart

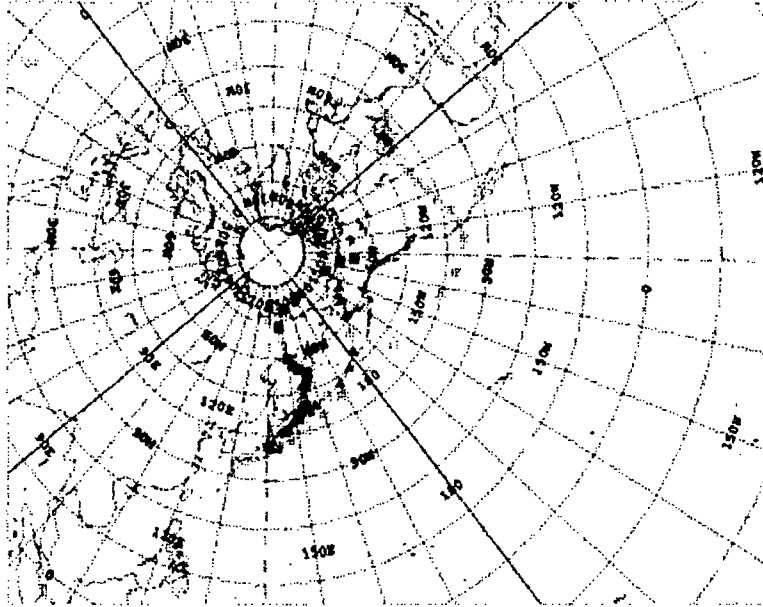
Results based on default initial values

Chart 2/6

DELEGATED AUTHORITY REQUESTED
 IAEA NOTIFIED EMERGENCY

3-D TRAJECTORY

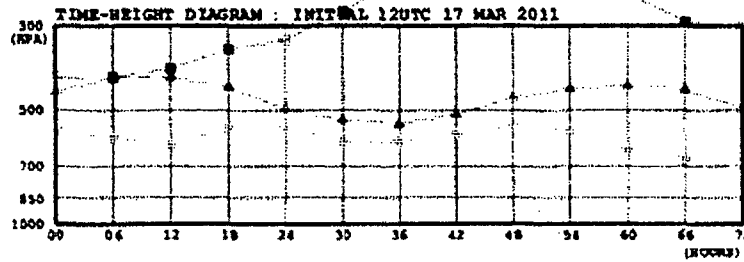
FROM 22UTC 14 MAR 2011 TO 12UTC 20 MAR 2011



(ISSUED 1801UTC 17 MAR 2011)

- ▲ INITIAL HEIGHT = 500M ABOVE THE SURFACE
- INITIAL HEIGHT = 1500M ABOVE THE SURFACE
- # INITIAL HEIGHT = 3000M ABOVE THE SURFACE
- MARKED WITH TIME INTERVAL OF 6 HOURS

SOURCE LOCATION : LATITUDE 37.42N
 LONGITUDE 141.03E
 NAME FUKUSHIMA DAIICHI

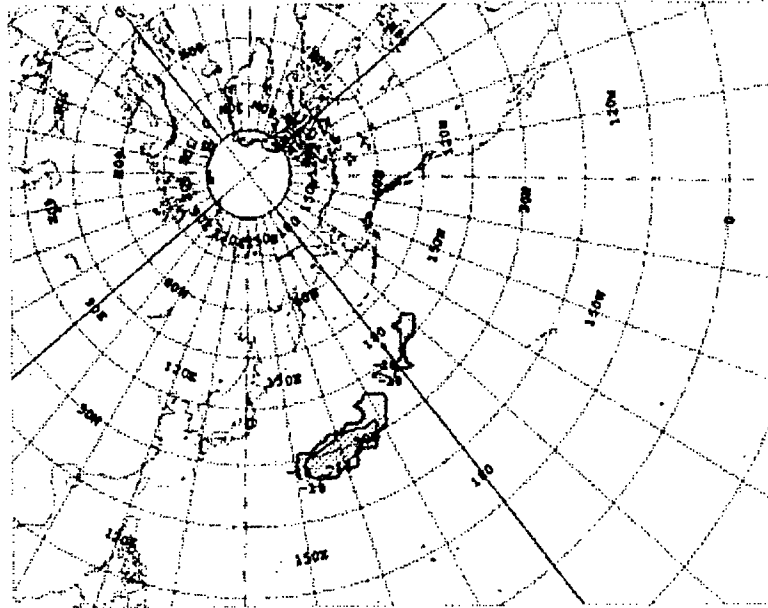


JAPAN METEOROLOGICAL AGENCY
 GLOBAL TRACER TRANSPORT MODEL
 CHART 1 / 5

DELEGATED AUTHORITY REQUESTED
 IAEA NOTIFIED EMERGENCY

TIME INTEGRATED SURFACE - 500M LAYER CONCENTRATION

INTEGRATED FROM 12UTC 17 MAR 2011
TO 12UTC 18 MAR 2011



(ISSUED 1801UTC 17 MAR 2011)

ASSUMED POLLUTANT RELEASED : CS-137
START OF THE EMISSION : 2200UTC 14 MAR 2011
END OF THE EMISSION : 0430UTC 16 MAR 2011
SOURCE LOCATION : LATITUDE 37.42N
LONGITUDE 141.03E
NAME FUKUSHIMA DAIICHI
ASSUMED TOTAL EMISSION : 1 BECQUEREL
UNIFORM RELEASE FROM 20- 50M ABOVE THE GROUND
UNIT : (BQ.S/M3)
MAXIMUM : 1.95E-13 (BQ.S/M3)
CONTOURS: 1E-14, 1E-16, 1E-18

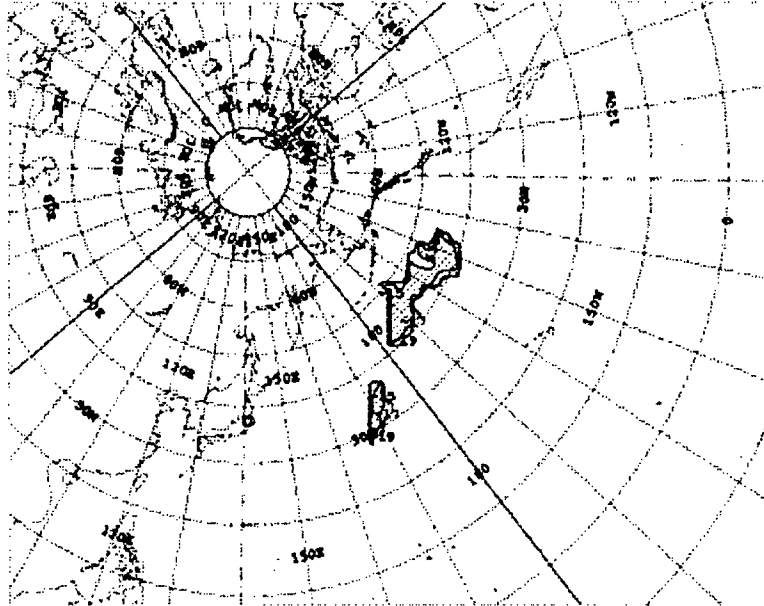
CONTOUR VALUES MAY CHANGE FROM CHART TO CHART

JAPAN METEOROLOGICAL AGENCY
GLOBAL TRACER TRANSPORT MODEL
CHART 2 / 5

DELEGATED AUTHORITY REQUESTED
 IAEA NOTIFIED EMERGENCY

TIME INTEGRATED SURFACE - 500M LAYER CONCENTRATION

INTEGRATED FROM 1200 UTC 18 MAR 2011
TO 1200 UTC 19 MAR 2011



(ISSUED 180100Z 17 MAR 2011)

ASSUMED POLLUTANT RELEASED : CS-137
START OF THE EMISSION : 220000Z 14 MAR 2011
END OF THE EMISSION : 043000Z 16 MAR 2011
O SOURCE LOCATION : LATITUDE 37.42N
LONGITUDE 141.03E
NAME FUKUSHIMA DAIICHI
ASSUMED TOTAL EMISSION : 1 BECQUEREL
UNIFORM RELEASE FROM 20- 50M ABOVE THE GROUND
UNIT : (BQ.S/M3)
MAXIMUM : 3.67E-14 (BQ.S/M3)
CONTOURS: 1E-15, 1E-17, 1E-19

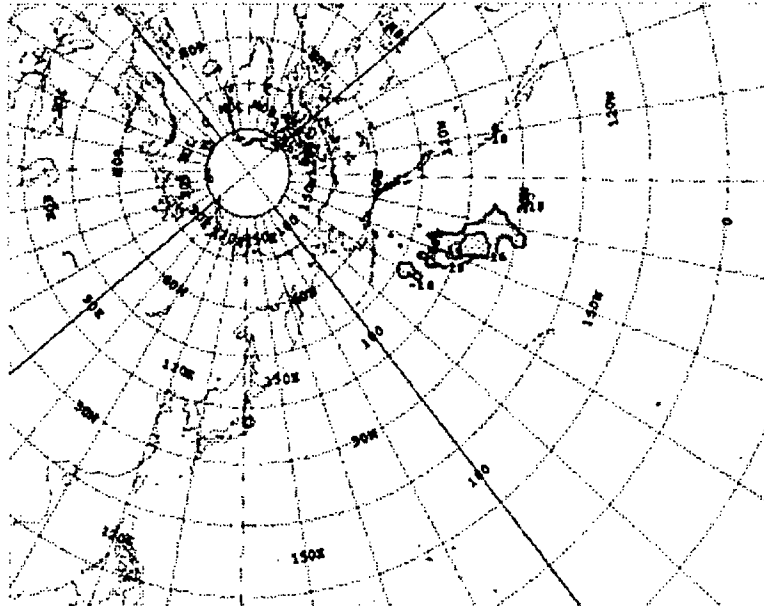
CONTOUR VALUES MAY CHANGE FROM CHART TO CHART

JAPAN METEOROLOGICAL AGENCY
GLOBAL TRACER TRANSPORT MODEL
CHART 3 / 5

DELEGATED AUTHORITY REQUESTED
 IAEA NOTIFIED EMERGENCY

TIME INTEGRATED SURFACE - 500M LAYER CONCENTRATION

INTEGRATED FROM 12UTC 19 MAR 2011
TO 12UTC 20 MAR 2011



(ISSUED 1801UTC 17 MAR 2011)

ASSUMED POLLUTANT RELEASED : CS-137
START OF THE EMISSION : 2200UTC 14 MAR 2011
END OF THE EMISSION : 0430UTC 16 MAR 2011
SOURCE LOCATION : LATITUDE 37.42N
LONGITUDE 141.03E
NAME FUKUSHIMA DAIICHI
ASSUMED TOTAL EMISSION : 1 BECQUEREL
UNIFORM RELEASE FROM 20- 50M ABOVE THE GROUND
UNIT : (BQ.S/M3)
MAXIMUM : 2.78E-14 (BQ.S/M3)
CONTOURS: 1E-14, 1E-15, 1E-16

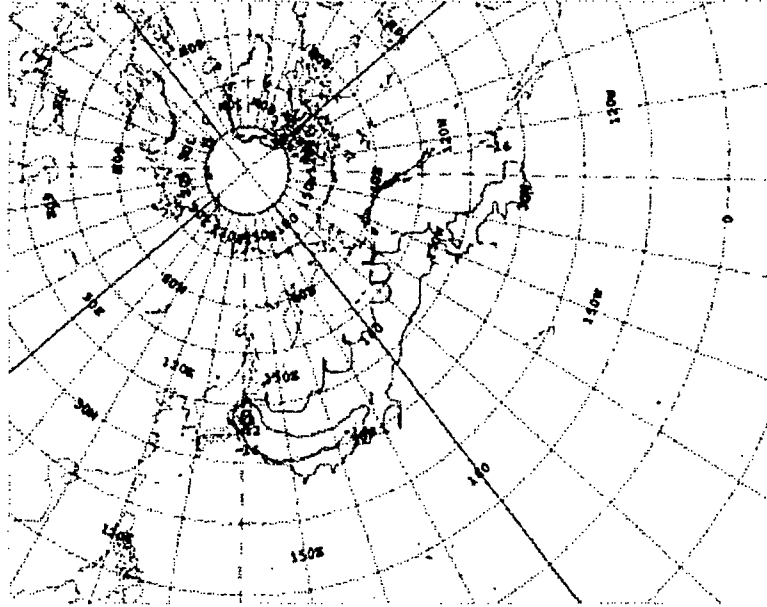
CONTOUR VALUES MAY CHANGE FROM CHART TO CHART

JAPAN METEOROLOGICAL AGENCY
GLOBAL TRACER TRANSPORT MODEL
CHART 4 / 5

DELEGATED AUTHORITY REQUESTED
 IAEA NOTIFIED EMERGENCY

TOTAL (WET AND DRY) DEPOSITION

INTEGRATED FROM 2200 UTC 14 MAR 2011
TO 1200 UTC 20 MAR 2011



(ISSUED 1801 UTC 17 MAR 2011)

ASSUMED POLLUTANT RELEASED : CS-137
START OF THE EMISSION : 2200 UTC 14 MAR 2011
END OF THE EMISSION : 0430 UTC 16 MAR 2011
O SOURCE LOCATION : LATITUDE 37.42N
LONGITUDE 141.03E
NAME FUKUSHIMA DAIICHI
ASSUMED TOTAL EMISSION : 1 BECQUEREL
UNIFORM RELEASE FROM 20- 50M ABOVE THE GROUND
UNIT : (BQ/M2)
MAXIMUM : 2.93E-11 (BQ/M2)
CONTOURS: 1E-12, 1E-14, 1E-16

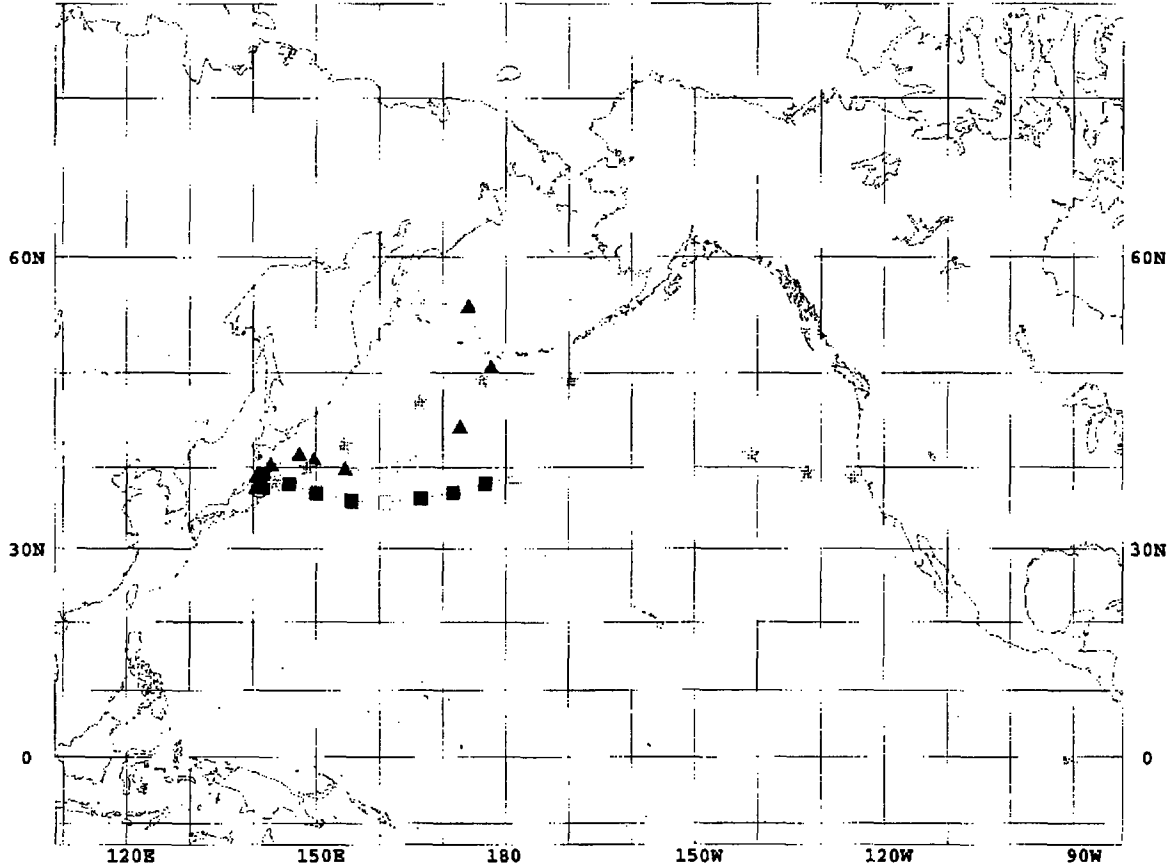
CONTOUR VALUES MAY CHANGE FROM CHART TO CHART

JAPAN METEOROLOGICAL AGENCY
GLOBAL TRACER TRANSPORT MODEL
CHART 5 / 5

DELEGATED AUTHORITY REQUESTED
 IAEA NOTIFIED EMERGENCY

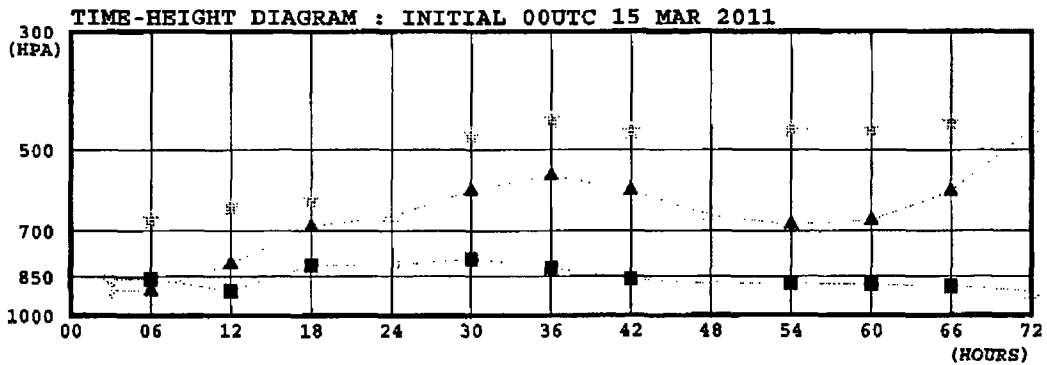
3-D TRAJECTORY

FROM 03UTC 15 MAR 2011 TO 00UTC 18 MAR 2011



(ISSUED 0435UTC 15 MAR 2011)

- ▲ INITIAL HEIGHT = 500M ABOVE THE SURFACE
- INITIAL HEIGHT = 1500M ABOVE THE SURFACE
- * INITIAL HEIGHT = 3000M ABOVE THE SURFACE
- MARKED WITH TIME INTERVAL OF 6 HOURS
- © SOURCE LOCATION : LATITUDE 37.42N
LONGITUDE 141.03E
NAME FUKUSHIMA DAIICHI, JAPAN

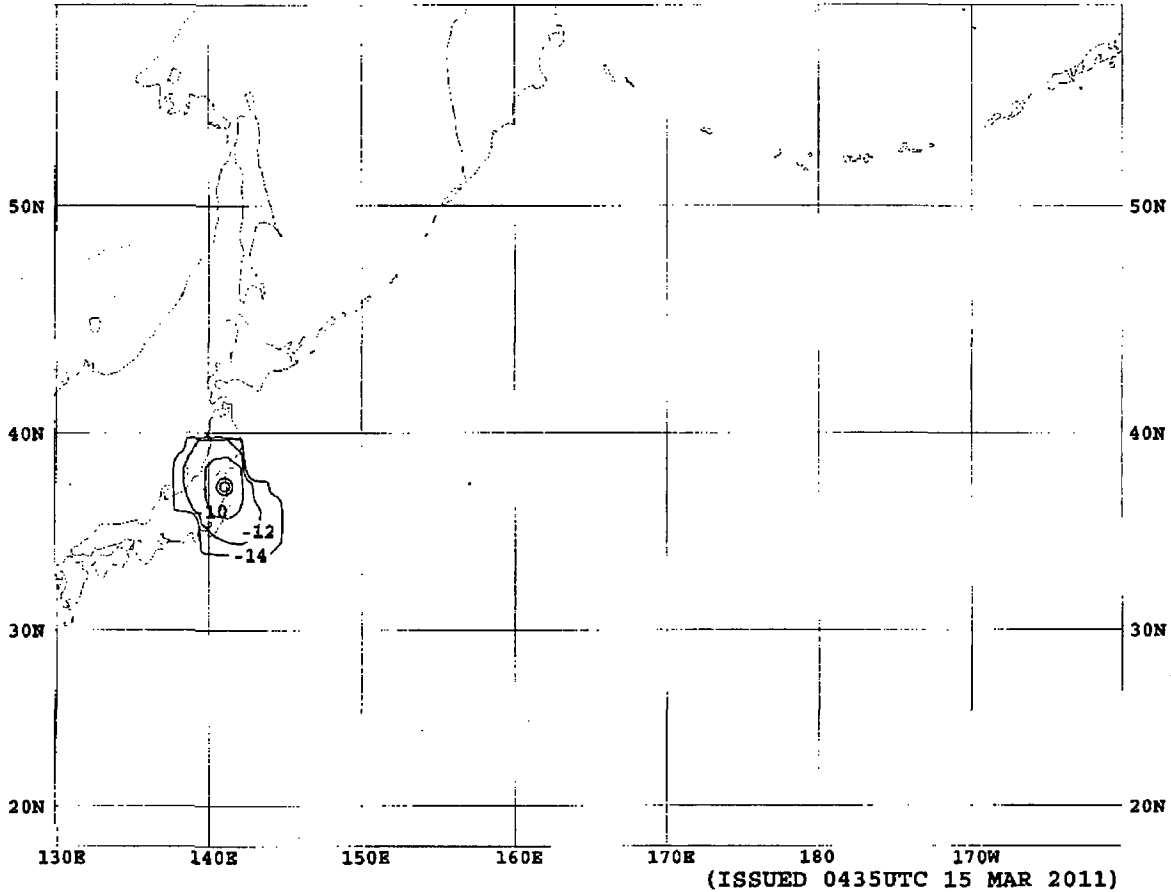


JAPAN METEOROLOGICAL AGENCY
 GLOBAL TRACER TRANSPORT MODEL
 CHART 1 / 5

DELEGATED AUTHORITY REQUESTED
 IAEA NOTIFIED EMERGENCY

TIME INTEGRATED SURFACE - 500M LAYER CONCENTRATION

INTEGRATED FROM 03UTC 15 MAR 2011
TO 00UTC 16 MAR 2011



ASSUMED POLLUTANT RELEASED : CS-137
START OF THE EMISSION : 0300UTC 15 MAR 2011
END OF THE EMISSION : 0300UTC 18 MAR 2011
© SOURCE LOCATION : LATITUDE 37.42N
LONGITUDE 141.03E
NAME FUKUSHIMA DAIICHI, JAPAN
ASSUMED TOTAL EMISSION : 1 BECQUEREL
UNIFORM RELEASE FROM 20- 500M ABOVE THE GROUND
UNIT : (BQ.S/M3)
MAXIMUM : 4.86E-9 (BQ.S/M3)
CONTOURS: 1E-10, 1E-12, 1E-14

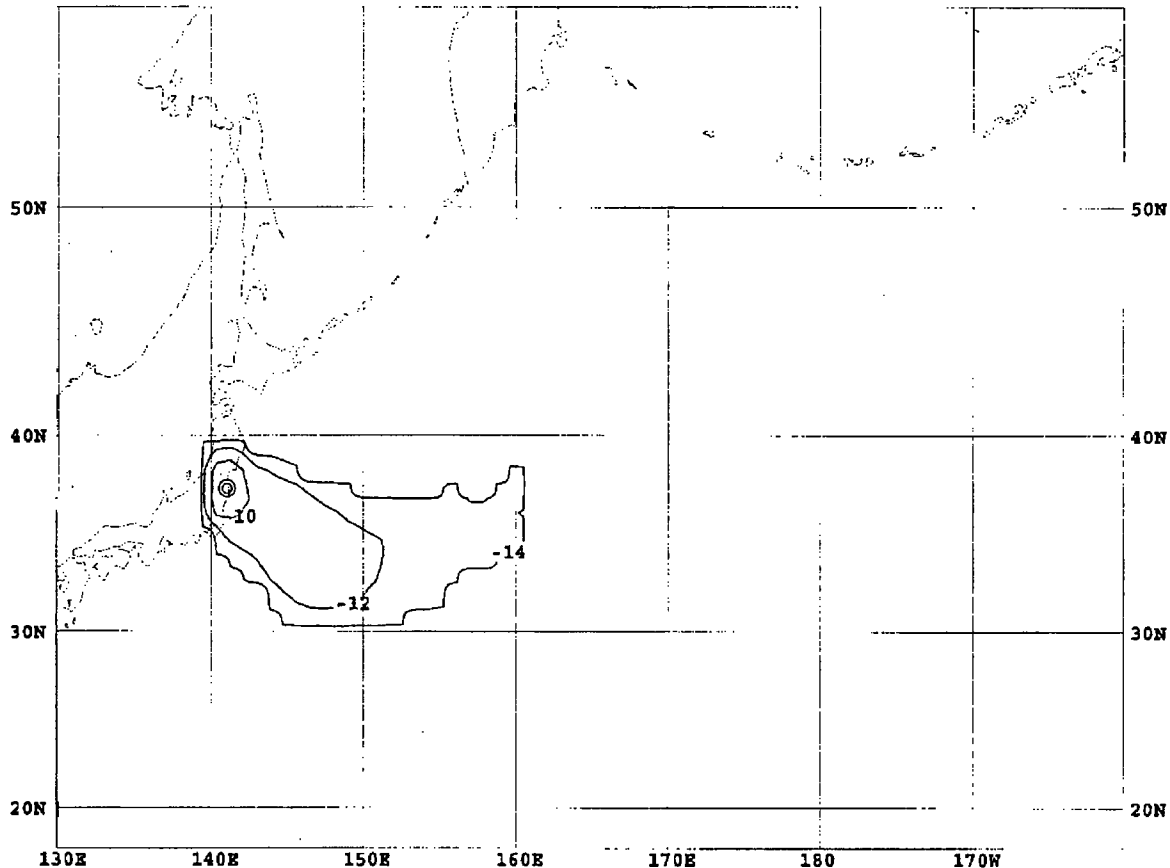
CONTOUR VALUES MAY CHANGE FROM CHART TO CHART

JAPAN METEOROLOGICAL AGENCY
GLOBAL TRACER TRANSPORT MODEL
CHART 2 / 5

DELEGATED AUTHORITY REQUESTED
 IAEA NOTIFIED EMERGENCY

TIME INTEGRATED SURFACE - 500M LAYER CONCENTRATION

INTEGRATED FROM 00UTC 16 MAR 2011
TO 00UTC 17 MAR 2011



(ISSUED 0435UTC 15 MAR 2011)

ASSUMED POLLUTANT RELEASED : CS-137
START OF THE EMISSION : 0300UTC 15 MAR 2011
END OF THE EMISSION : 0300UTC 18 MAR 2011
© SOURCE LOCATION : LATITUDE 37.42N
LONGITUDE 141.03E
NAME FUKUSHIMA DAIICHI, JAPAN
ASSUMED TOTAL EMISSION : 1 BECQUEREL
UNIFORM RELEASE FROM 20- 500M ABOVE THE GROUND
UNIT : (BQ.S/M3)
MAXIMUM : 3.32E-9 (BQ.S/M3)
CONTOURS: 1E-10, 1E-12, 1E-14

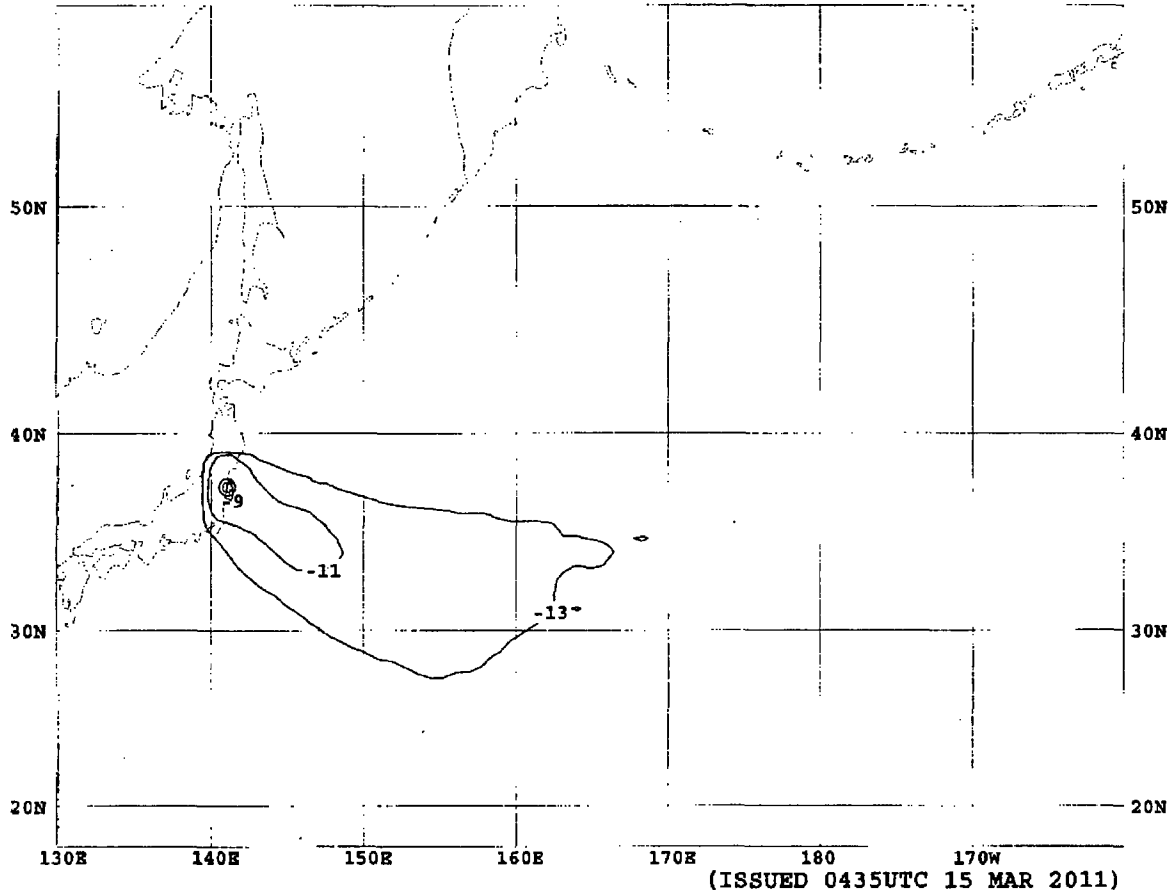
CONTOUR VALUES MAY CHANGE FROM CHART TO CHART

JAPAN METEOROLOGICAL AGENCY
GLOBAL TRACER TRANSPORT MODEL
CHART 3 / 5

DELEGATED AUTHORITY REQUESTED
 IAEA NOTIFIED EMERGENCY

TIME INTEGRATED SURFACE - 500M LAYER CONCENTRATION

INTEGRATED FROM 00UTC 17 MAR 2011
TO 00UTC 18 MAR 2011



ASSUMED POLLUTANT RELEASED : CS-137
START OF THE EMISSION : 0300UTC 15 MAR 2011
END OF THE EMISSION : 0300UTC 18 MAR 2011
© SOURCE LOCATION : LATITUDE 37.42N
LONGITUDE 141.03E
NAME FUKUSHIMA DAIICHI, JAPAN
ASSUMED TOTAL EMISSION : 1 BECQUEREL
UNIFORM RELEASE FROM 20- 500M ABOVE THE GROUND
UNIT : (BQ.S/M3)
MAXIMUM : 1.33E-9 (BQ.S/M3)
CONTOURS: 1E-9, 1E-11, 1E-13

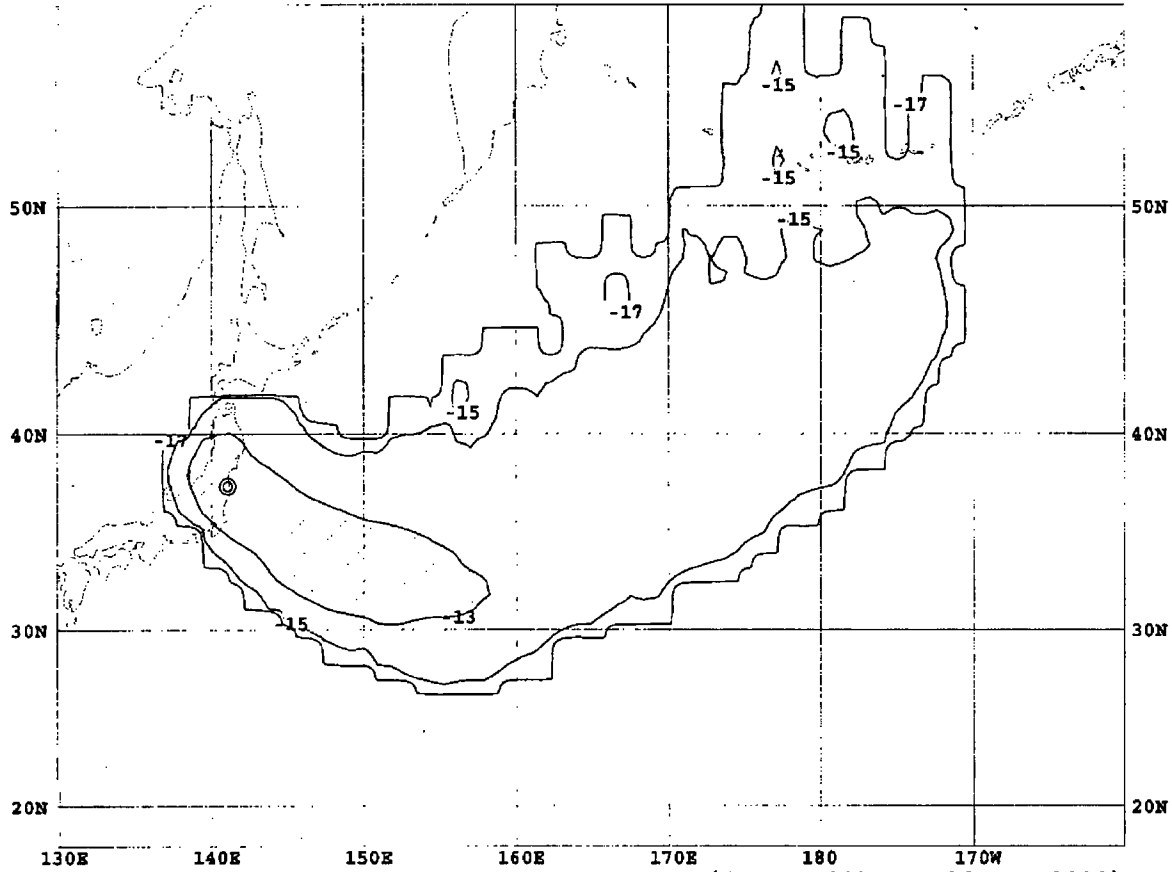
CONTOUR VALUES MAY CHANGE FROM CHART TO CHART

JAPAN METEOROLOGICAL AGENCY
GLOBAL TRACER TRANSPORT MODEL
CHART 4 / 5

DELEGATED AUTHORITY REQUESTED
 IAEA NOTIFIED EMERGENCY

TOTAL (WET AND DRY) DEPOSITION

INTEGRATED FROM 03UTC 15 MAR 2011
TO 00UTC 18 MAR 2011



(ISSUED 0435UTC 15 MAR 2011)

ASSUMED POLLUTANT RELEASED : CS-137
START OF THE EMISSION : 0300UTC 15 MAR 2011
END OF THE EMISSION : 0300UTC 18 MAR 2011
© SOURCE LOCATION : LATITUDE 37.42N
LONGITUDE 141.03E
NAME FUKUSHIMA DAIICHI, JAPAN
ASSUMED TOTAL EMISSION : 1 BECQUEREL
UNIFORM RELEASE FROM 20- 500M ABOVE THE GROUND
UNIT : (BQ/M2)
MAXIMUM : 8.99E-12 (BQ/M2)
CONTOURS: 1E-13 , 1E-15 , 1E-17

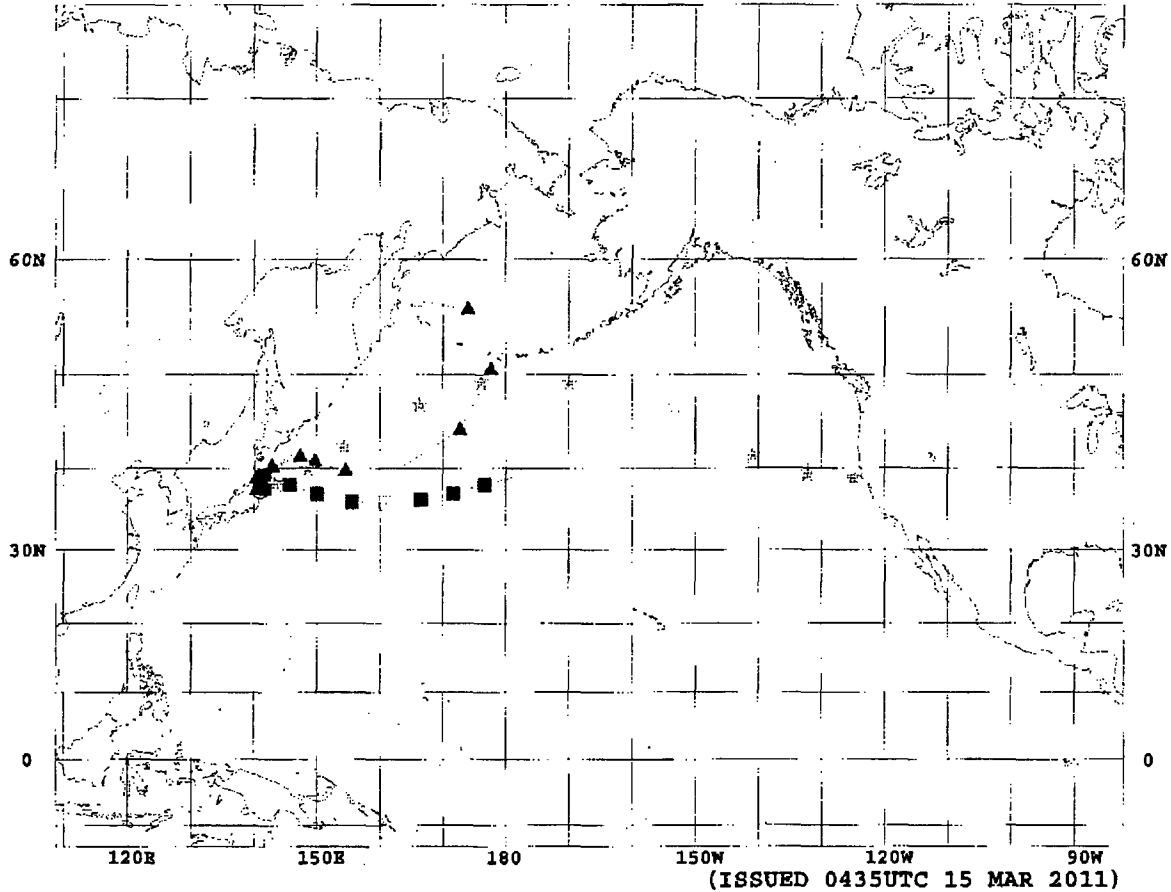
CONTOUR VALUES MAY CHANGE FROM CHART TO CHART

JAPAN METEOROLOGICAL AGENCY
GLOBAL TRACER TRANSPORT MODEL
CHART 5 / 5

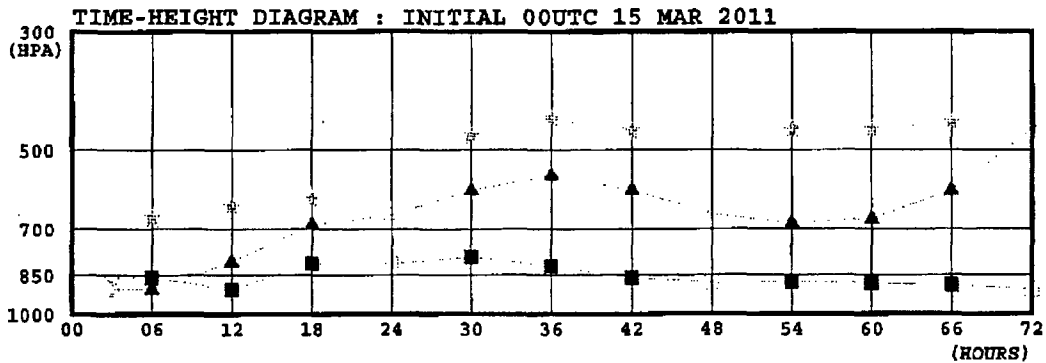
- DELEGATED AUTHORITY REQUESTED
- IAEA NOTIFIED EMERGENCY

3-D TRAJECTORY

FROM 03UTC 15 MAR 2011 TO 00UTC 18 MAR 2011



- ▲ INITIAL HEIGHT = 500M ABOVE THE SURFACE
- INITIAL HEIGHT = 1500M ABOVE THE SURFACE
- * INITIAL HEIGHT = 3000M ABOVE THE SURFACE
- MARKED WITH TIME INTERVAL OF 6 HOURS
- © SOURCE LOCATION : LATITUDE 37.42N
LONGITUDE 141.03E
NAME FUKUSHIMA DAIICHI, JAPAN

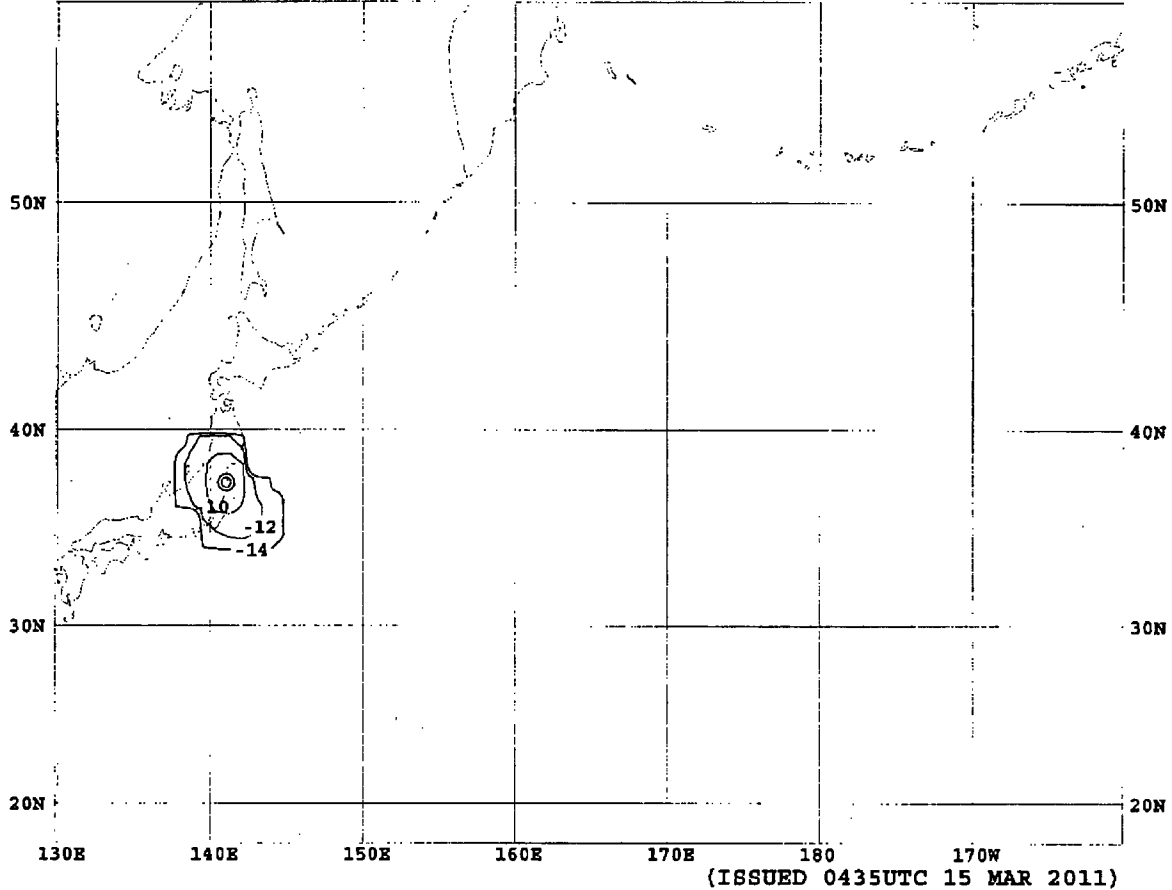


JAPAN METEOROLOGICAL AGENCY
GLOBAL TRACER TRANSPORT MODEL
CHART 1 / 5

- DELEGATED AUTHORITY REQUESTED
- IAEA NOTIFIED EMERGENCY

TIME INTEGRATED SURFACE - 500M LAYER CONCENTRATION

INTEGRATED FROM 03UTC 15 MAR 2011
TO 00UTC 16 MAR 2011



(ISSUED 0435UTC 15 MAR 2011)

ASSUMED POLLUTANT RELEASED : CS-137
 START OF THE EMISSION : 0300UTC 15 MAR 2011
 END OF THE EMISSION : 0300UTC 18 MAR 2011
 © SOURCE LOCATION : LATITUDE 37.42N
 LONGITUDE 141.03E
 NAME FUKUSHIMA DAIICHI, JAPAN
 ASSUMED TOTAL EMISSION : 1 BECQUEREL
 UNIFORM RELEASE FROM 20- 500M ABOVE THE GROUND
 UNIT : (BQ.S/M3)
 MAXIMUM : 4.86E-9 (BQ.S/M3)
 CONTOURS: 1E-10 , 1E-12 , 1E-14

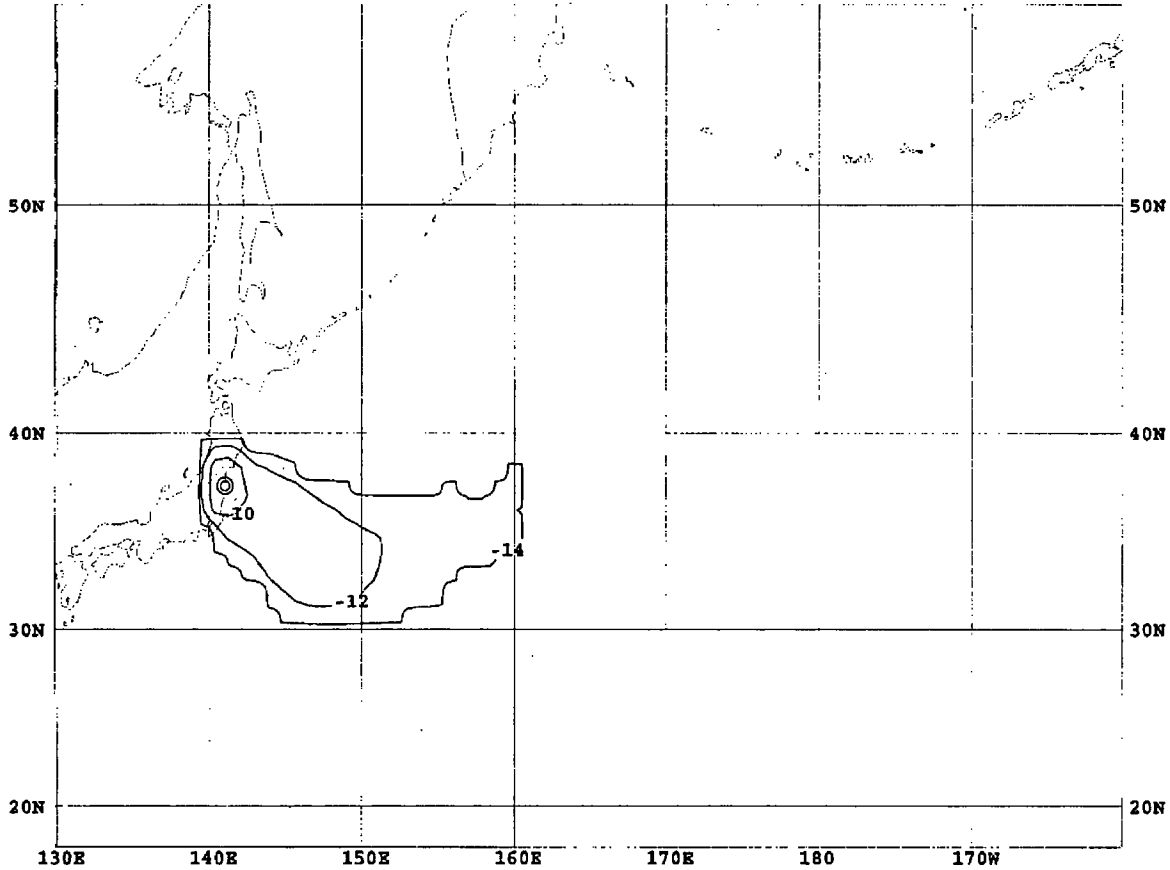
CONTOUR VALUES MAY CHANGE FROM CHART TO CHART

JAPAN METEOROLOGICAL AGENCY
 GLOBAL TRACER TRANSPORT MODEL
 CHART 2 / 5

DELEGATED AUTHORITY REQUESTED
 IAEA NOTIFIED EMERGENCY

TIME INTEGRATED SURFACE - 500M LAYER CONCENTRATION

INTEGRATED FROM 00UTC 16 MAR 2011
TO 00UTC 17 MAR 2011



(ISSUED 0435UTC 15 MAR 2011)

ASSUMED POLLUTANT RELEASED : CS-137
START OF THE EMISSION : 0300UTC 15 MAR 2011
END OF THE EMISSION : 0300UTC 18 MAR 2011
© SOURCE LOCATION : LATITUDE 37.42N
LONGITUDE 141.03E
NAME FUKUSHIMA DAIICHI, JAPAN
ASSUMED TOTAL EMISSION : 1 BECQUEREL
UNIFORM RELEASE FROM 20- 500M ABOVE THE GROUND
UNIT : (BQ.S/M3)
MAXIMUM : 3.32E-9 (BQ.S/M3)
CONTOURS: 1E-10 , 1E-12 , 1E-14

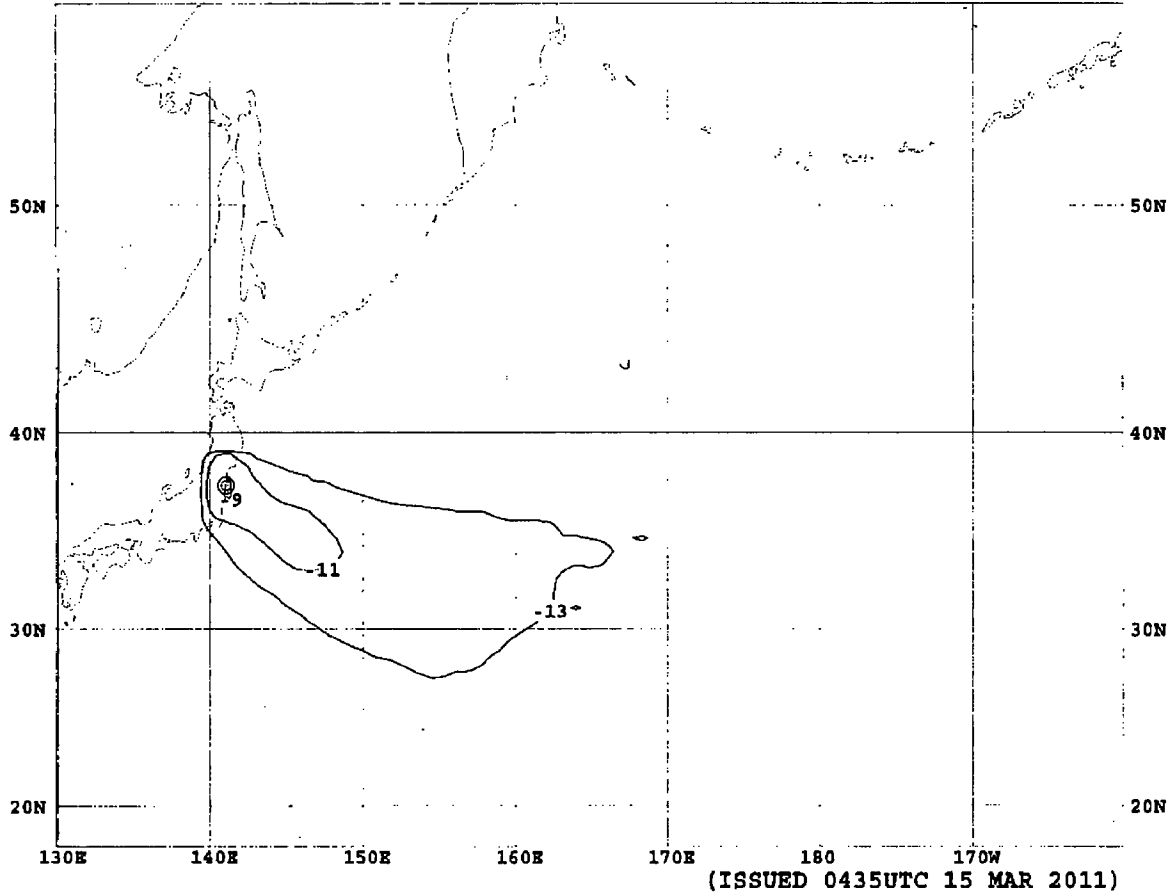
CONTOUR VALUES MAY CHANGE FROM CHART TO CHART

JAPAN METEOROLOGICAL AGENCY
GLOBAL TRACER TRANSPORT MODEL
CHART 3 / 5

DELEGATED AUTHORITY REQUESTED
 IAEA NOTIFIED EMERGENCY

TIME INTEGRATED SURFACE - 500M LAYER CONCENTRATION

INTEGRATED FROM 00UTC 17 MAR 2011
TO 00UTC 18 MAR 2011



ASSUMED POLLUTANT RELEASED : CS-137
START OF THE EMISSION : 0300UTC 15 MAR 2011
END OF THE EMISSION : 0300UTC 18 MAR 2011
© SOURCE LOCATION : LATITUDE 37.42N
LONGITUDE 141.03E
NAME FUKUSHIMA DAIICHI, JAPAN
ASSUMED TOTAL EMISSION : 1 BECQUEREL
UNIFORM RELEASE FROM 20- 500M ABOVE THE GROUND
UNIT : (BQ.S/M3)
MAXIMUM : 1.33E-9 (BQ.S/M3)
CONTOURS: 1E-9, 1E-11, 1E-13

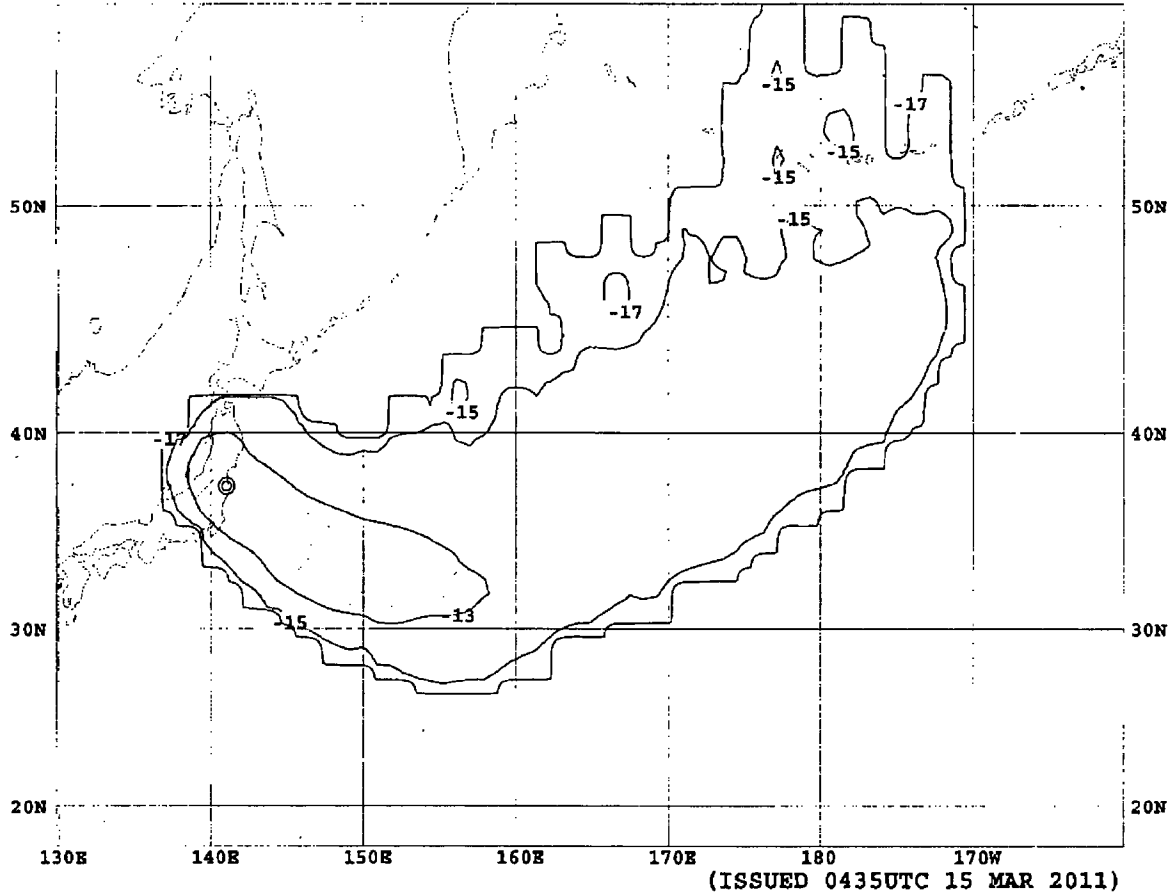
CONTOUR VALUES MAY CHANGE FROM CHART TO CHART

JAPAN METEOROLOGICAL AGENCY
GLOBAL TRACER TRANSPORT MODEL
CHART 4 / 5

DELEGATED AUTHORITY REQUESTED
 IAEA NOTIFIED EMERGENCY

TOTAL (WET AND DRY) DEPOSITION

INTEGRATED FROM 03UTC 15 MAR 2011
TO 00UTC 18 MAR 2011



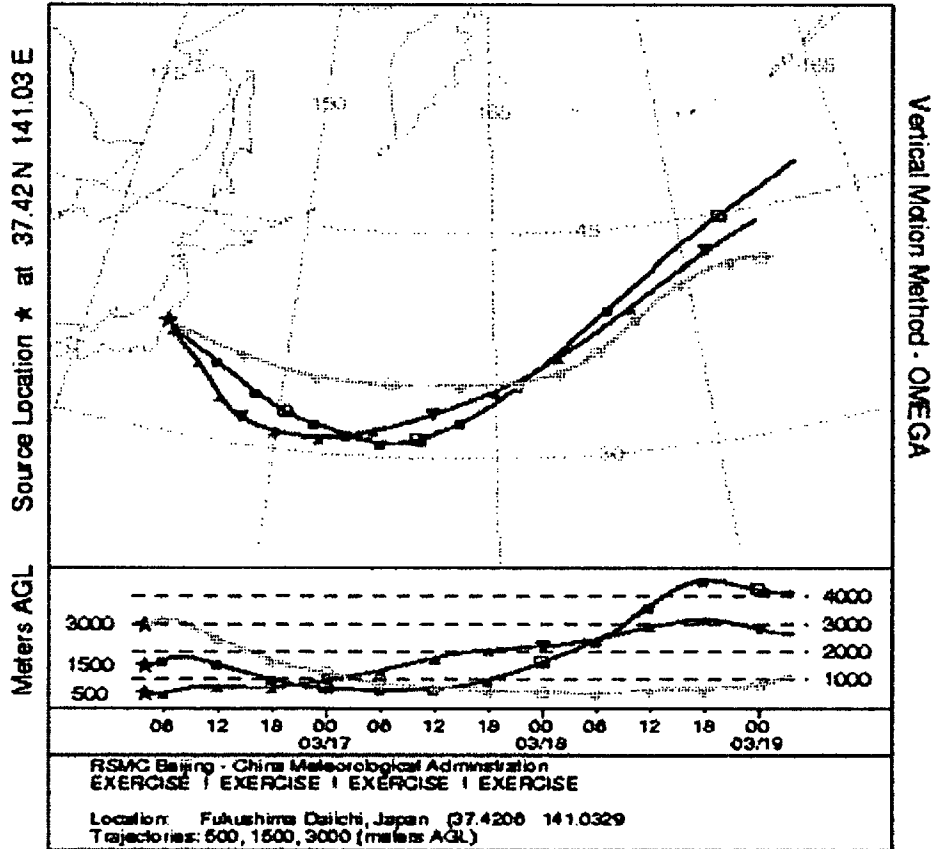
(ISSUED 0435UTC 15 MAR 2011)

ASSUMED POLLUTANT RELEASED : CS-137
START OF THE EMISSION : 0300UTC 15 MAR 2011
END OF THE EMISSION : 0300UTC 18 MAR 2011
© SOURCE LOCATION : LATITUDE 37.42N
LONGITUDE 141.03E
NAME FUKUSHIMA DAIICHI, JAPAN
ASSUMED TOTAL EMISSION : 1 BECQUEREL
UNIFORM RELEASE FROM 20- 500M ABOVE THE GROUND
UNIT : (BQ/M2)
MAXIMUM : 8.99E-12 (BQ/M2)
CONTOURS: 1E-13 , 1E -15 , 1E -17

CONTOUR VALUES MAY CHANGE FROM CHART TO CHART

JAPAN METEOROLOGICAL AGENCY
GLOBAL TRACER TRANSPORT MODEL
CHART 5 / 5

RSMC BEIJING - CHINA METEOROLOGICAL ADMINISTRATION
 Forward trajectories starting at 04 UTC 16 Mar 11
 00 UTC 16 Mar CMAG Forecast Initialization

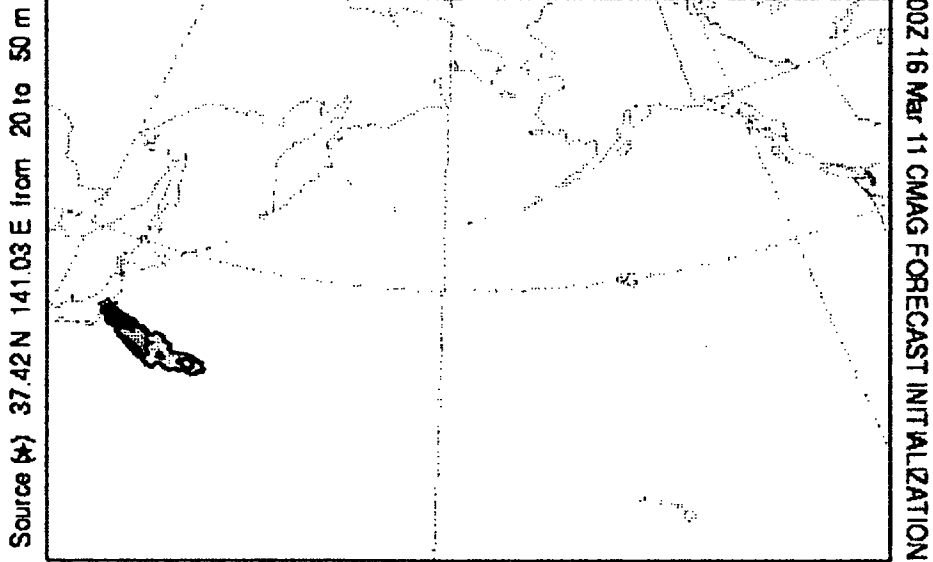


RSMC BEIJING - CHINA METEOROLOGICAL ADMINISTRATION

Exposure averaged between 0 m and 500 m (Bq-s/m³)

Integrated from 00z 16 Mar to 00z 17 Mar (UTC)

C137 Release Started at 04Z 16 Mar (UTC)



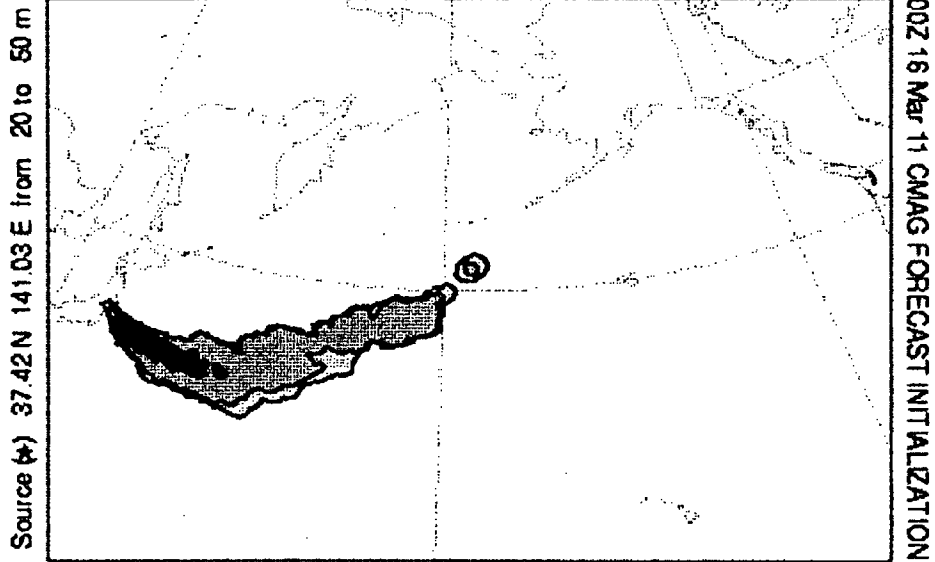
EMERGENCY ! EMERGENCY ! EMERGENCY ! EMERGENCY
Location: Fukushima Daiichi, Japan (37.4208 141.0329)
Meteorology: QT213
Emission: 1.0 Bq of C137 over 72 hr
Distribution: Uniform between 20 m - 60 m agl
Deposition: Wet and Dry (0.1 cm/s)
Notes: Contours may change from map to map
Results based on default values

RSMC BEIJING - CHINA METEOROLOGICAL ADMINISTRATION

Exposure averaged between 0 m and 500 m (Bq-s/m3)

Integrated from 00z 17 Mar to 00z 18 Mar (UTC)

C137 Release Started at 04Z 16 Mar (UTC)



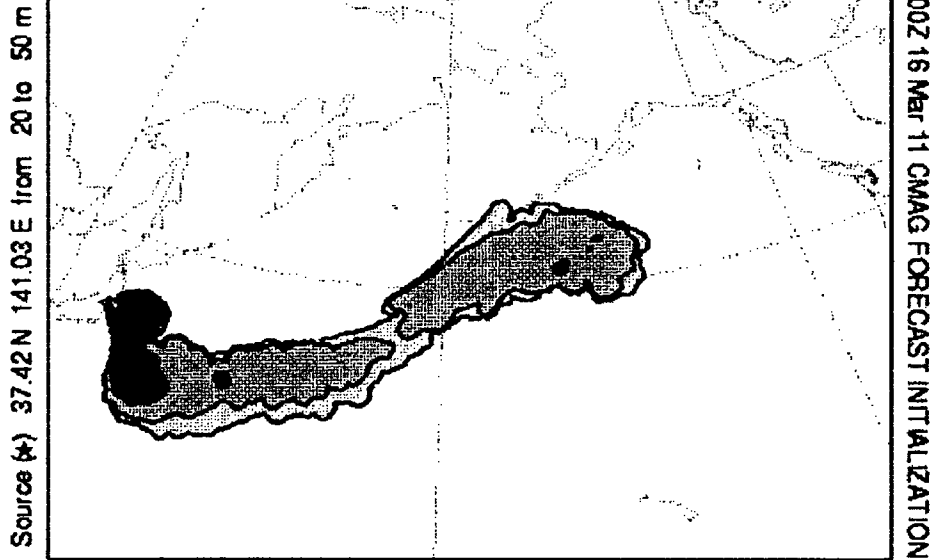
EMERGENCY ! EMERGENCY ! EMERGENCY ! EMERGENCY
Location: Fukushima Daiichi, Japan (37.4206 141.0329)
Meteorology: GT213
Emission: 1.0 Bq of C137 over 72 hr
Distribution: Uniform between 20 m - 50 m agl
Deposition: Wet and Dry (0.1 cm/s)
Notes: Contours may change from map to map
Results based on default values

RSMC BEIJING - CHINA METEOROLOGICAL ADMINISTRATION

Exposure averaged between 0 m and 500 m (Bq-s/m³)

Integrated from 00z 18 Mar to 00z 19 Mar (UTC)

C137 Release Started at 04Z 18 Mar (UTC)

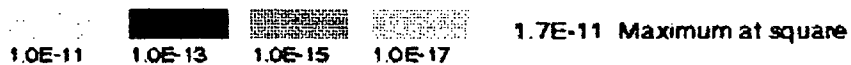
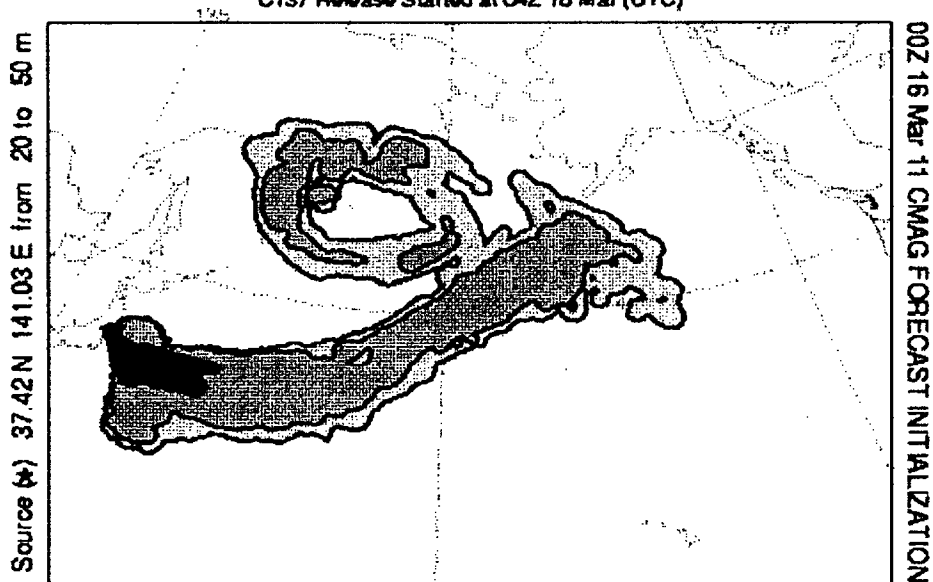


1.0E-10 1.0E-12 1.0E-14 1.0E-16 8.7E-10 Maximum at square

EMERGENCY | EMERGENCY | EMERGENCY | EMERGENCY
Location: Fukushima Daiichi, Japan (37.4206 141.0329)
Meteorology: GT213
Emission: 1.0 Bq of C137 over 72 hr
Distribution: Uniform between 20 m - 50 m agl
Deposition: Wet and Dry (0.1 cm/s)
Notes: Contours may change from map to map
Results based on default values

RSMC BEIJING - CHINA METEOROLOGICAL ADMINISTRATION

Deposition at Ground-Level (Bq/m²)
Integrated from 00z 16 Mar to 00z 19 Mar (UTC)
C137 Release Started at 04Z 16 Mar (UTC)

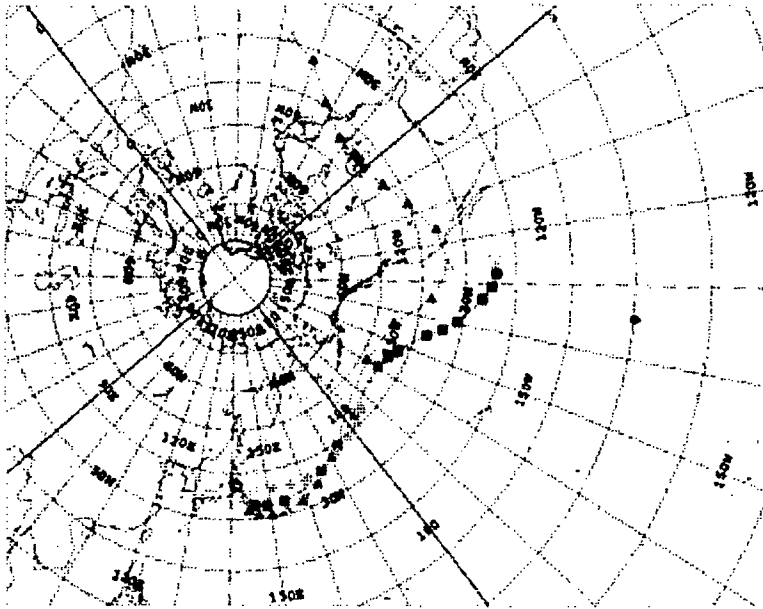


EMERGENCY | EMERGENCY | EMERGENCY | EMERGENCY
Location: Fukushima Daiichi, Japan (37.4206 141.0329)
Meteorology: GTZ13
Emission: 1.0 Bq of C137 over 72 hr
Distribution: Uniform between 20 m - 50 m agl
Deposition: Wet and Dry (0.1 cm/s)
Notes: Contours may change from map to map
Results based on default values

DELEGATED AUTHORITY REQUESTED
 IAEA NOTIFIED EMERGENCY

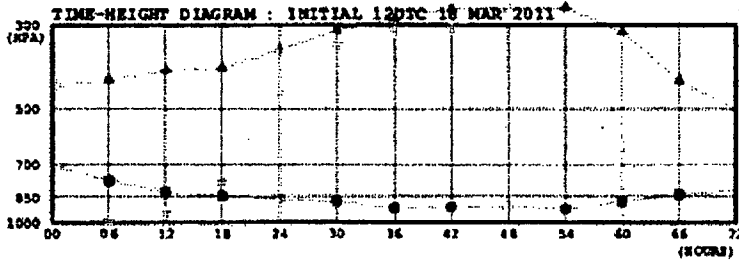
3-D TRAJECTORY

FROM 04UTC 16 MAR 2011 TO 12UTC 21 MAR 2011



(ISSUED 1648UTC 18 MAR 2011)

- ▲ INITIAL HEIGHT = 500M ABOVE THE SURFACE
- INITIAL HEIGHT = 1500M ABOVE THE SURFACE
- INITIAL HEIGHT = 3000M ABOVE THE SURFACE
- MARKED WITH TIME INTERVAL OF 6 HOURS
- SOURCE LOCATION : LATITUDE 37.42N
LONGITUDE 141.03E
NAME FUKUSHIMA DAIICHI

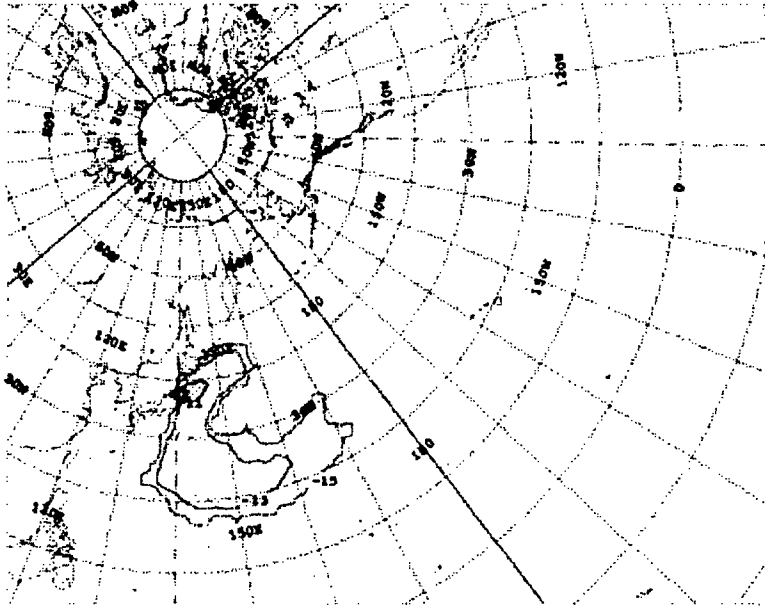


JAPAN METEOROLOGICAL AGENCY
 GLOBAL TRACER TRANSPORT MODEL
 CHART 1 / 3

DELEGATED AUTHORITY REQUESTED
 IAEA NOTIFIED EMERGENCY

TIME INTEGRATED SURFACE - 500M LAYER CONCENTRATION

INTEGRATED FROM 1200C 18 MAR 2011
TO 1200C 19 MAR 2011



(ISSUED 1648UTC 18 MAR 2011)

ASSUMED POLLUTANT RELEASED : CS-137
START OF THE EMISSION : 0430UTC 16 MAR 2011
END OF THE EMISSION : 0430UTC 19 MAR 2011
O SOURCE LOCATION : LATITUDE 37.42N
LONGITUDE 141.03E
NAME FUKUSHIMA DAIICHI
ASSUMED TOTAL EMISSION : 1 BECQUEREL
UNIFORM RELEASE FROM 20- 50M ABOVE THE GROUND
UNIT : (BQ.S/M3)
MAXIMUM : 3.01E-10 (BQ.S/M3)
CONTOURS: 1E-11, 1E-13, 1E-15

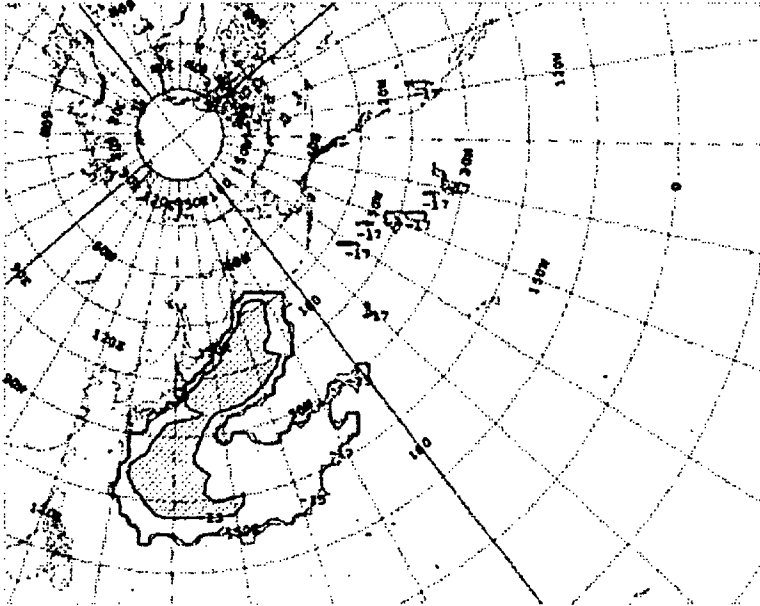
CONTOUR VALUES MAY CHANGE FROM CHART TO CHART

JAPAN METEOROLOGICAL AGENCY
GLOBAL TRACER TRANSPORT MODEL
CHART 2 / 5

DELEGATED AUTHORITY REQUESTED
 IAEA NOTIFIED EMERGENCY

TIME INTEGRATED SURFACE - 500M LAYER CONCENTRATION

INTEGRATED FROM 12UTC 19 MAR 2011
TO 12UTC 20 MAR 2011



(ISSUED 1648UTC 18 MAR 2011)

ASSUMED POLLUTANT RELEASED : CS-137
START OF THE EMISSION : 0430UTC 16 MAR 2011
END OF THE EMISSION : 0430UTC 19 MAR 2011
D SOURCE LOCATION : LATITUDE 37.42N
LONGITUDE 141.03E
NAME FUKUSHIMA DAIICHI
ASSUMED TOTAL EMISSION : 1 BECQUEREL
UNIFORM RELEASE FROM 20- 50M ABOVE THE GROUND
UNIT : (BQ.S/M3)
MAXIMUM : 3.21E-12 (BQ.S/M3)
CONTOURS: 1E-13, 1E-15, 1E-17

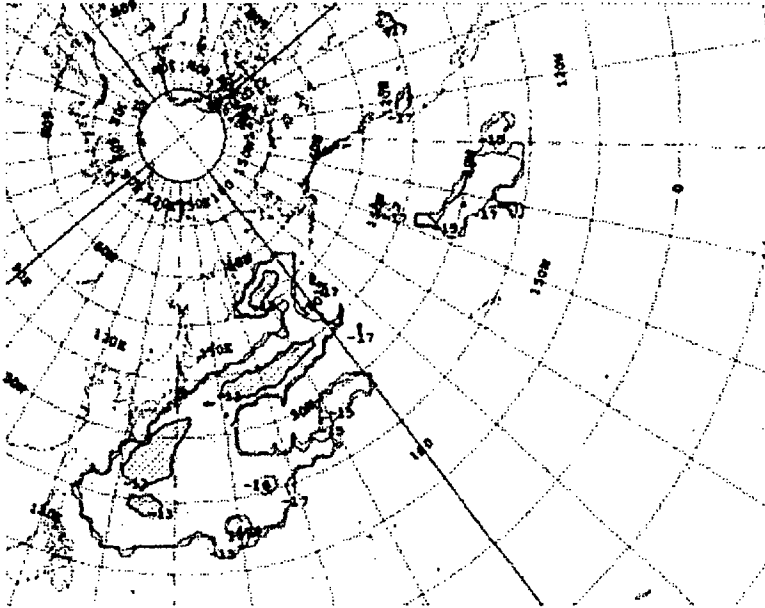
CONTOUR VALUES MAY CHANGE FROM CHART TO CHART

JAPAN METEOROLOGICAL AGENCY
GLOBAL TRACER TRANSPORT MODEL
CHART 3 / 5

DELEGATED AUTHORITY REQUESTED
 IAEA NOTIFIED EMERGENCY

TIME INTEGRATED SURFACE - 500M LAYER CONCENTRATION

INTEGRATED FROM 12UTC 20 MAR 2011
TO 12UTC 21 MAR 2011



(ISSUED 1648UTC 19 MAR 2011)

ASSUMED POLLUTANT RELEASED : CS-137
START OF THE EMISSION : 0430UTC 16 MAR 2011
END OF THE EMISSION : 0430UTC 19 MAR 2011
SOURCE LOCATION : LATITUDE 37.42N
LONGITUDE 141.03E
NAME FUKUSHIMA DAIICHI
ASSUMED TOTAL EMISSION : 1 BECQUEREL
UNIFORM RELEASE FROM 20- 50M ABOVE THE GROUND
UNIT : (BQ.S/M3)
MAXIMUM : 4.99E-13 (BQ.S/M3)
CONTOURS: 1E-13, 1E-15, 1E-17

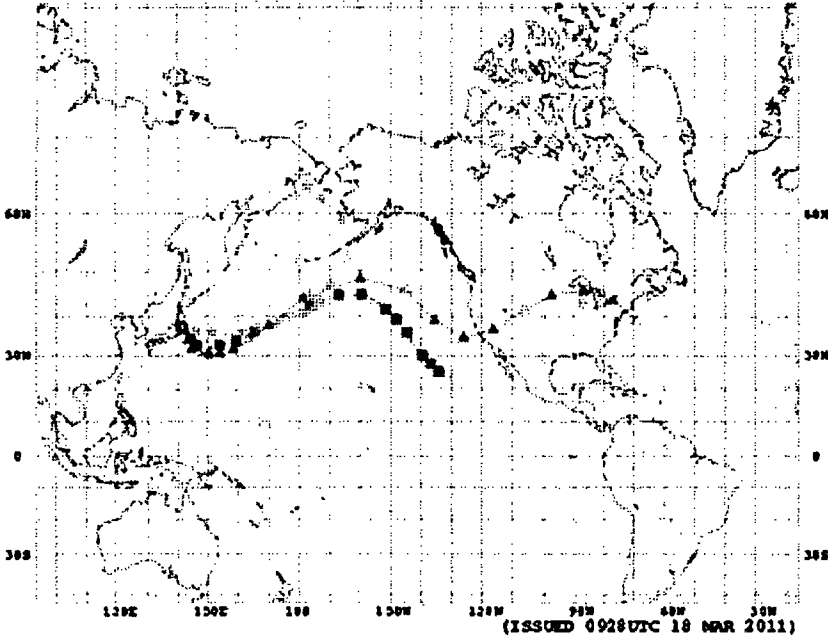
CONTOUR VALUES MAY CHANGE FROM CHART TO CHART

JAPAN METEOROLOGICAL AGENCY
GLOBAL TRACER TRANSPORT MODEL
CHART 4 / 5

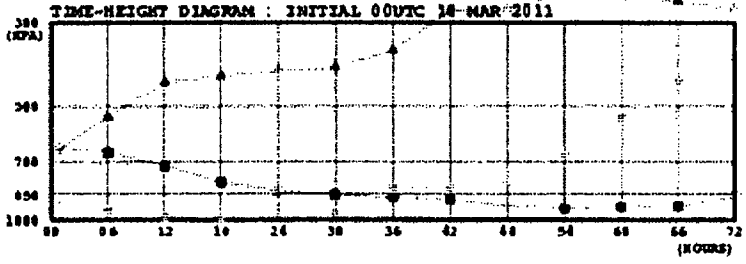
DELEGATED AUTHORITY REQUESTED
 IAEA NOTIFIED EMERGENCY

3-D TRAJECTORY

FROM 04UTC 16 MAR 2011 TO 00UTC 21 MAR 2011



▲ INITIAL HEIGHT - 500M ABOVE THE SURFACE
 ■ INITIAL HEIGHT - 1500M ABOVE THE SURFACE
 + INITIAL HEIGHT - 3000M ABOVE THE SURFACE
 MARKED WITH TIME INTERVAL OF 6 HOURS
 ○ SOURCE LOCATION : LATITUDE 37.42N
 LONGITUDE 141.03E
 NAME FUKUSHIMA DAIICHI

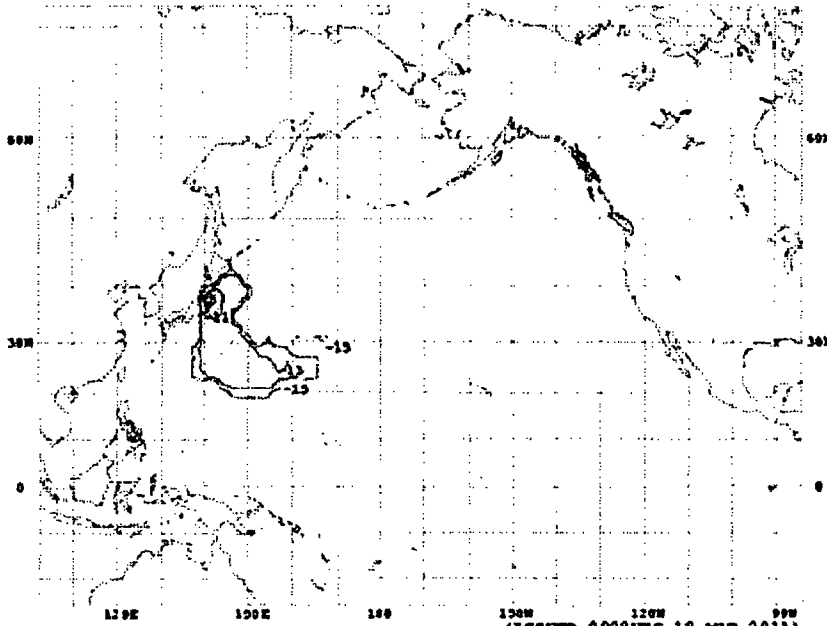


JAPAN METEOROLOGICAL AGENCY
 GLOBAL TRACER TRANSPORT MODEL
 CHART 1 / 5

DELEGATED AUTHORITY REQUESTED
 IAEA NOTIFIED EMERGENCY

TIME INTEGRATED SURFACE - 500M LAYER CONCENTRATION

INTEGRATED FROM 00UTC 18 MAR 2011
TO 00UTC 19 MAR 2011



(ISSUED 0928UTC 18 MAR 2011)

ASSUMED POLLUTANT RELEASED : CS-137
START OF THE EMISSION : 0430UTC 16 MAR 2011
END OF THE EMISSION : 0430UTC 19 MAR 2011
O SOURCE LOCATION : LATITUDE 37.42N
LONGITUDE 141.03E
NAME FUKUSHIMA DAIICHI

ASSUMED TOTAL EMISSION : 1 BECQUEREL
UNIFORM RELEASE FROM 20- 50M ABOVE THE GROUND
UNIT : (BQ.S/M3)
MAXIMUM : 9.68E-10 (BQ.S/M3)
CONTOURS: 1E-11, 1E-13, 1E-15

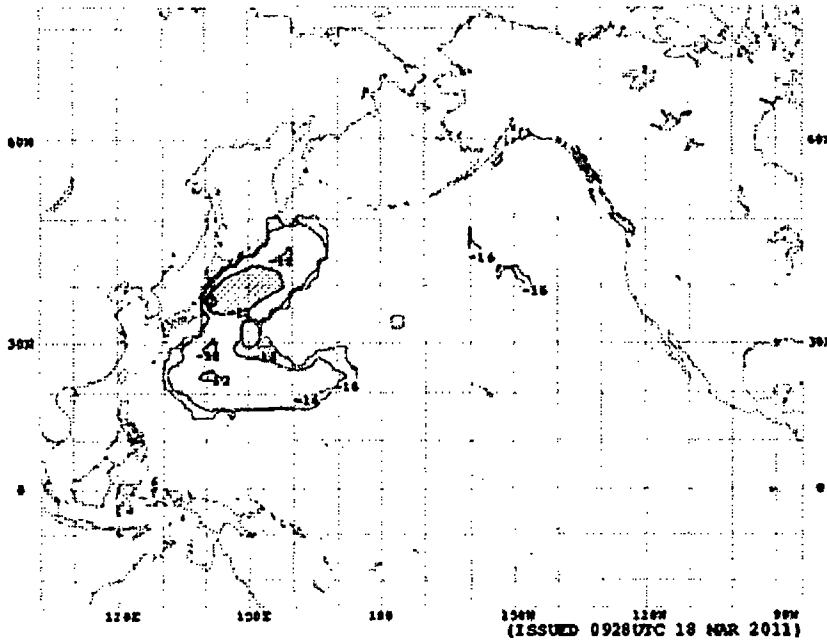
CONTOUR VALUES MAY CHANGE FROM CHART TO CHART

JAPAN METEOROLOGICAL AGENCY
GLOBAL TRACER TRANSPORT MODEL
CHART 2 / 5

DELEGATED AUTHORITY REQUESTED
 IAEA NOTIFIED EMERGENCY

TIME INTEGRATED SURFACE - 500M LAYER CONCENTRATION

INTEGRATED FROM 00UTC 19 MAR 2011
TO 00UTC 20 MAR 2011



ASSUMED POLLUTANT RELEASED : CS-137
START OF THE EMISSION : 0430UTC 16 MAR 2011
END OF THE EMISSION : 0430UTC 19 MAR 2011
O SOURCE LOCATION : LATITUDE 37.42N
LONGITUDE 141.03E
NAME FUKUSHIMA DAIICHI
ASSUMED TOTAL EMISSION : 1 BECQUEREL
UNIFORM RELEASE FROM 20- 50M ABOVE THE GROUND
UNIT : (BQ.S/M3)
MAXIMUM : 5.69E-11 (BQ.S/M3)
CONTOURS: 1E-12, 1E-14, 1E-16

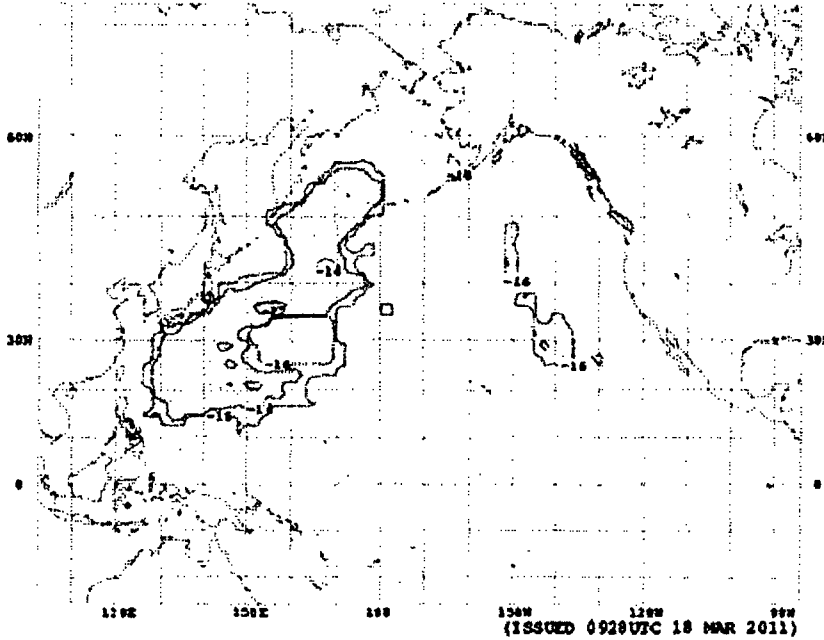
CONTOUR VALUES MAY CHANGE FROM CHART TO CHART

JAPAN METEOROLOGICAL AGENCY
GLOBAL TRACER TRANSPORT MODEL
CHART 3 / 5

☐ DELEGATED AUTHORITY REQUESTED
☐ IAEA NOTIFIED EMERGENCY

TIME INTEGRATED SURFACE - 500M LAYER CONCENTRATION

INTEGRATED FROM 00UTC 20 MAR 2011
TO 00UTC 21 MAR 2011



ASSUMED POLLUTANT RELEASED : CS-137
START OF THE EMISSION : 0430UTC 16 MAR 2011
END OF THE EMISSION : 0430UTC 19 MAR 2011
○ SOURCE LOCATION : LATITUDE 37.42N
LONGITUDE 141.03E
NAME FUKUSHIMA DAIICHI
ASSUMED TOTAL EMISSION : 1 BECQUEREL
UNIFORM RELEASE FROM 20- 50M ABOVE THE GROUND
UNIT : (BQ.S/M3)
MAXIMUM : 2.13E-12 (BQ.S/M3)
CONTOURS: 1E-12, 1E-14, 1E-16

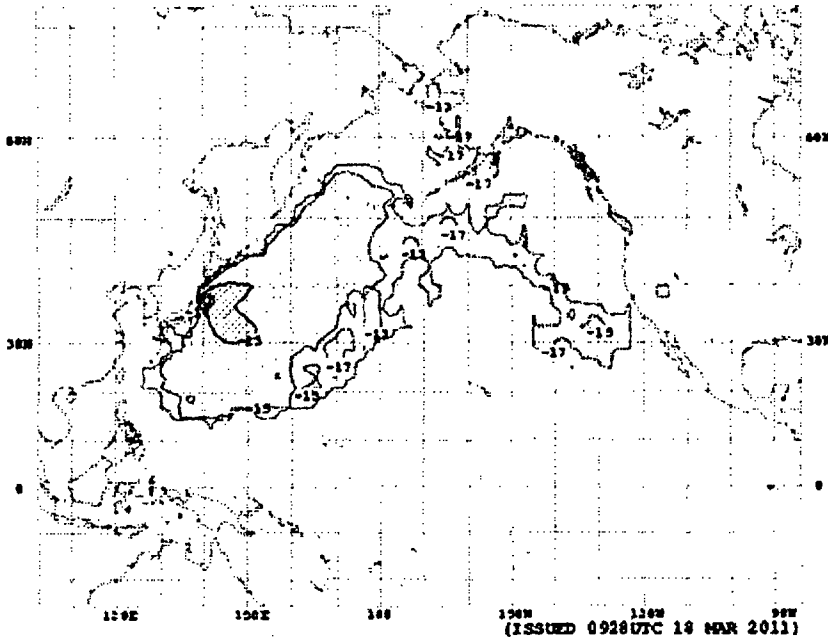
CONTOUR VALUES MAY CHANGE FROM CHART TO CHART

JAPAN METEOROLOGICAL AGENCY
GLOBAL TRACKER TRANSPORT MODEL
CHART 4 / 5

☐ DELEGATED AUTHORITY REQUESTED
☐ IAEA NOTIFIED EMERGENCY

TOTAL (WET AND DRY) DEPOSITION

INTEGRATED FROM 04UTC 16 MAR 2011
TO 00UTC 21 MAR 2011



ASSUMED POLLUTANT RELEASED : CS-137
START OF THE EMISSION : 0430UTC 16 MAR 2011
END OF THE EMISSION : 0430UTC 19 MAR 2011
○ SOURCE LOCATION : LATITUDE 37.42N
LONGITUDE 141.03E
NAME FUKUSHIMA DAIICHI
ASSUMED TOTAL EMISSION : 1 BECQUEREL
UNIFORM RELEASE FROM 20- 50M ABOVE THE GROUND
UNIT : (BQ/M2)
MAXIMUM : 8.45E-12 (BQ/M2)
CONTOURS: 1E-13, 1E-15, 1E-17

CONTOUR VALUES MAY CHANGE FROM CHART TO CHART

JAPAN METEOROLOGICAL AGENCY
GLOBAL TRACER TRANSPORT MODEL
CHART 5 / 5

Readings at Monitoring Post out of 20 Km Zone of Fukushima Dai-ichi NPP

As of 19:00 March 18, 2011

Ministry of Education, Culture, Sports, Science

1. Monitoring Outputs by MEXT (reverse chronological order) ***Boldface and underlined readings are new.**

* 1 measured by Geiger-Müller counter

* 2 measured by ionization chamber type survey

* 3 measured by NaI scintillator detector

Monitoring Post (length from NPP)	Monitoring Time	Reading (unit : μ Sv / h)	Weather	Reading by
Reading Point [1] (About50KmNorth/West)	3/18 18:05	8.0 ^{*2}	No rain	NUSTEC (Nuclear Safety Technology Center)
Reading Point [4] (About50KmNorth/West)	3/18 16:00	4.8 ^{*2}	No rain	NUSTEC (Nuclear Safety Technology Center)
Reading Point [10] (About40KmNorth/West)	3/18 15:45	3.3 ^{*2}	No rain	NUSTEC (Nuclear Safety Technology Center)
Reading Point [12] (About40KmWest)	3/18 15:32	0.6 ^{*2}	No rain	NUSTEC (Nuclear Safety Technology Center)
Reading Point [11] (About40KmNorth/West)	3/18 15:28	4.8 ^{*2}	No rain	NUSTEC (Nuclear Safety Technology Center)
Reading Point [23] (About33KmWest/North/West)	3/18 15:04	2.8 ^{*2}	No rain	NUSTEC (Nuclear Safety Technology Center)
Reading Point [22] (About35KmWest/North/West)	3/18 14:48	2.2 ^{*2}	No rain	NUSTEC (Nuclear Safety Technology Center)
Reading Point [15] (About35KmWest)	3/18 14:36	2.0 ^{*2}	No rain	NUSTEC (Nuclear Safety Technology Center)
Reading Point [21] (About30KmWest/North/West)	3/18 14:35	8.7 ^{*2}	No rain	NUSTEC (Nuclear Safety Technology Center)
Reading Point [14] (About35KmWest)	3/18 14:22	0.8 ^{*2}	No rain	NUSTEC (Nuclear Safety Technology Center)
Reading Point [7] (About45KmNorth)	3/18 14:18	2.4 ^{*2}	No rain	MEXT
Reading Point [6] (About45KmNorth)	3/18 14:10	3.0 ^{*2}	No rain	MEXT
Reading Point [13] (About40KmWest)	3/18 14:09	0.8 ^{*2}	No rain	NUSTEC (Nuclear Safety Technology Center)
Reading Point [23] (About35KmWest/North/West)	3/18 14:04	3.0 ^{*2}	No rain	NUSTEC (Nuclear Safety Technology Center)
Reading Point [22] (About35KmWest/North/West)	3/18 13:48	2.3 ^{*2}	No rain	NUSTEC (Nuclear Safety Technology Center)

- * 1 measured by Geiger-Müller counter
- * 2 measured by ionization chamber type survey
- * 3 measured by NaI scintillator detector

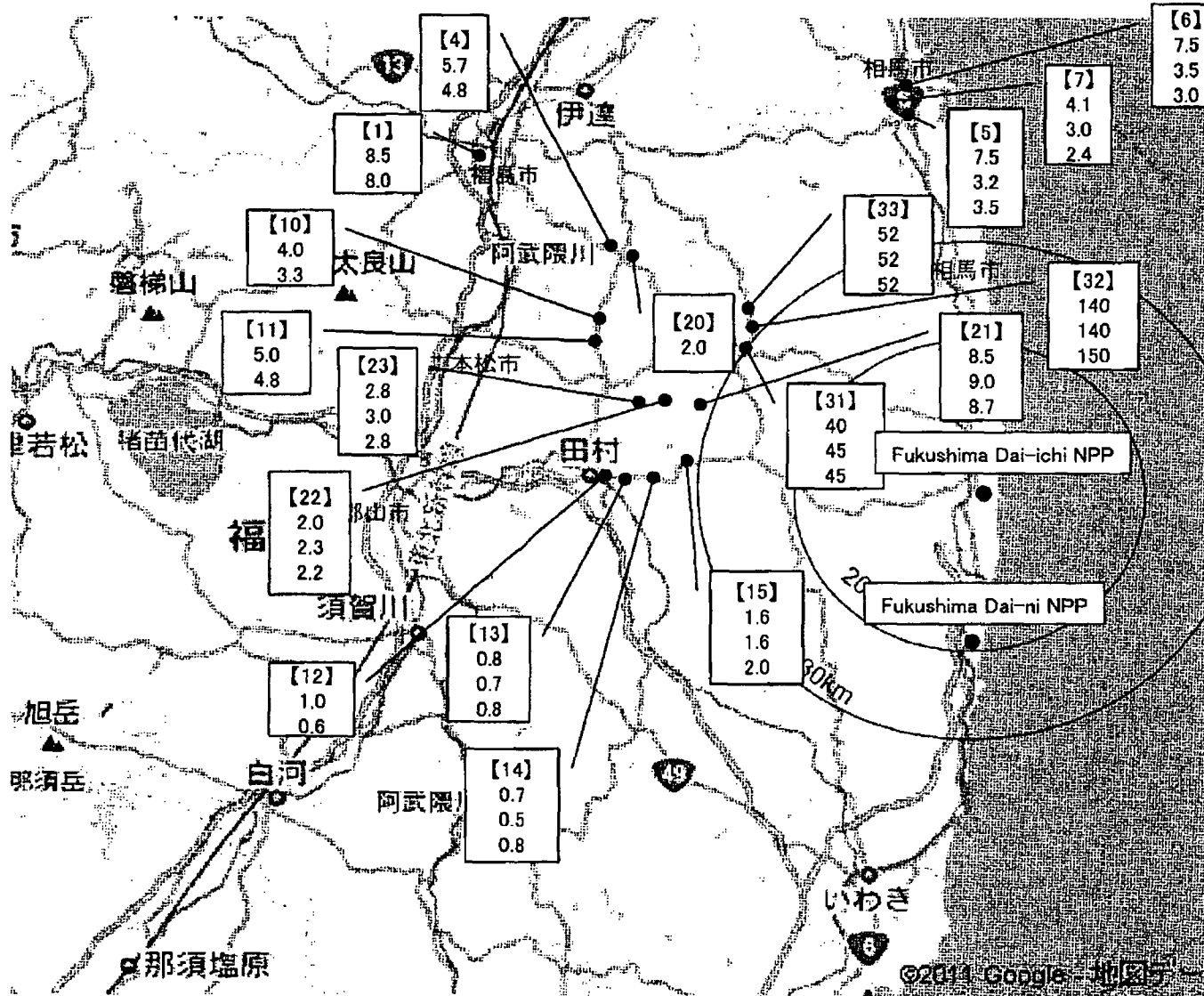
Monitoring Post (length from NPP)	Monitoring Time	Reading (unit : μ Sv / h)	Weather	Reading by
Reading Point 【33】 (About30KmNorth/West)	3/18 13:45	52.0 *2	No rain	JAEA (Japan Atomic Energy Agency)
Reading Point 【32】 (About30KmNorth/West)	3/18 13:32	150.0 *2	No rain	JAEA (Japan Atomic Energy Agency)
Reading Point 【5】 (About45KmNorth)	3/18 13:40	3.5 *2	No rain	MEXT
Reading Point 【15】 (About35KmWest)	3/18 13:36	1.6 *2	No rain	NUSTEC (Nuclear Safety Technology Center)
Reading Point 【21】 (About30KmWest/North/West)	3/18 13:34	9.0 *2	No rain	NUSTEC (Nuclear Safety Technology Center)
Reading Point 【14】 (About35KmWest)	3/18 13:22	0.5 *2	No rain	NUSTEC (Nuclear Safety Technology Center)
Reading Point 【31】 (About30KmWest/North/West)	3/18 13:20	45.0 *2	No rain	JAEA (Japan Atomic Energy Agency)
Reading Point 【7】 (About45KmNorth)	3/18 13:18	3.0 *2	No rain	MEXT
Reading Point 【6】 (About45KmNorth)	3/18 13:10	3.5 *2	No rain	MEXT
Reading Point 【13】 (About40KmWest)	3/18 13:09	0.7 *2	No rain	NUSTEC (Nuclear Safety Technology Center)
Reading Point 【23】 (About35KmWest/North/West)	3/18 13:04	2.8 *2	No rain	NUSTEC (Nuclear Safety Technology Center)
Reading Point 【22】 (About35KmWest/North/West)	3/18 12:48	2.0 *2	No rain	NUSTEC (Nuclear Safety Technology Center)
Reading Point 【33】 (About30KmNorth/West)	3/18 12:47	52.0 *2	No rain	JAEA (Japan Atomic Energy Agency)
Reading Point 【5】 (About45KmNorth)	3/18 12:40	3.2 *2	No rain	MEXT
Reading Point 【15】 (About35KmWest)	3/18 12:36	1.6 *2	No rain	NUSTEC (Nuclear Safety Technology Center)
Reading Point 【21】 (About30KmWest/North/West)	3/18 12:35	8.5 *2	No rain	NUSTEC (Nuclear Safety Technology Center)
Reading Point 【32】 (About30KmNorth/West)	3/18 12:33	140.0 *2	No rain	JAEA (Japan Atomic Energy Agency)
Reading Point 【14】 (About30KmWest/North/West)	3/18 12:22	0.7 *2	No rain	NUSTEC (Nuclear Safety Technology Center)

- * 1 measured by Geiger-Müller counter
- * 2 measured by ionization chamber type survey
- * 3 measured by NaI scintillator detector

Monitoring Post (length from NPP)	Monitoring Time	Reading (unit : $\mu\text{Sv} / \text{h}$)	Weather	Reading by
Reading Point 【7】 (About45KmNorth)	3/18 12:22	4.1 *2	No rain	MEXT
Reading Point 【31】 (About30KmWest/North/West)	3/18 12:20	45.0 *2	No rain	JAEA (Japan Atomic Energy Agency)
Reading Point 【6】 (About45KmNorth)	3/18 12:15	7.5 *2	No rain	MEXT
Reading Point 【20】 (About45KmNorth/West)	3/18 12:14	2.0 *2	No rain	NUSTEC (Nuclear Safety Technology Center)
Reading Point 【13】 (About45KmNorth/West)	3/18 12:09	0.8 *2	No rain	NUSTEC (Nuclear Safety Technology Center)
Reading Point 【12】 (About40KmWest)	3/18 12:00	1.0 *2	No rain	NUSTEC (Nuclear Safety Technology Center)
Reading Point 【33】 (About 30KmNorth/West)	3/18 11:47	52.0 *2	No rain	JAEA (Japan Atomic Energy Agency)
Reading Point 【5】 (About 45KmNorth)	3/18 11:40	7.5 *2	No rain	MEXT
Reading Point 【11】 (About 40KmNorth/West)	3/18 11:39	5.0 *2	No rain	NUSTEC (Nuclear Safety Technology Center)
Reading Point 【32】 (About30KmNorth/West)	3/18 11:33	140.0 *2	No rain	JAEA (Japan Atomic Energy Agency)
Reading Point 【10】 (About40KmNorth/West)	3/18 11:29	4.0 *2	No rain	NUSTEC (Nuclear Safety Technology Center)
Reading Point 【31】 (About30KmWest/North/West)	3/18 11:20	40.0 *2	No rain	JAEA (Japan Atomic Energy Agency)
Reading Point 【4】 (About50KmNorth/West)	3/18 10:55	5.7 *2	No rain	NUSTEC (Nuclear Safety Technology Center)
Reading Point 【1】 (About60KmNorth/West)	3/18 10:08	8.5 *2	No rain	NUSTEC (Nuclear Safety Technology Center)

2. Under construction, Reading by Ministry of Defense

Readings at Monitoring Post out of Fukushima Dai-ichi NPP



Monitoring Time
 March 18,
 10:08~18:05

● Monitoring Post

Unit: μ Sv per hour

Reading of environmental radioactivity level by prefecture

19:00 March 18, 2011

(μ Sv/h)

	Prefecture(City)	2011/3/17							2011/3/18						
		17-18	18-19	19-20	20-21	21-22	22-23	23-24	0-1	1-2	2-3	3-4	4-5	5-6	6-7
1	Hokkaido(Sapporo)	0.027	0.028	0.029	0.028	0.027	0.028	0.031	0.030	0.028	0.028	0.029	0.028	0.028	0.027
2	Aomori(Aomori)	0.024	0.022	0.021	0.021	0.020	0.020	0.019	0.019	0.020	0.020	0.019	0.019	0.019	0.019
3	Iwate(Morioka)	0.031	0.033	0.031	0.031	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.031
4	Miyagi(Sendai)														
5	Akita(Akita)	0.038	0.035	0.034	0.034	0.036	0.035	0.034	0.033	0.033	0.033	0.033	0.034	0.033	0.033
6	Yamagata(Yamagata)	0.048	0.052	0.047	0.049	0.050	0.047	0.043	0.041	0.041	0.040	0.040	0.040	0.040	0.040
7	Fukushima(Futaba)														
8	Ibaraki(Mito)	0.209	0.207	0.207	0.206	0.205	0.205	0.204	0.203	0.202	0.201	0.201	0.199	0.199	0.188
9	Toshigi(Utsunomiya)	0.188	0.186	0.187	0.185	0.185	0.183	0.182	0.182	0.181	0.180	0.179	0.178	0.177	0.175
10	Gunma(Maebashi)	0.098	0.095	0.095	0.095	0.094	0.093	0.093	0.092	0.092	0.091	0.091	0.090	0.090	0.089
11	Saitama(Saitama)	0.083				0.083	0.083	0.082	0.081	0.081	0.081	0.081	0.081	0.080	0.080
12	Chiba(Ishihara)	0.037	0.037	0.036	0.036	0.038	0.036	0.036	0.036	0.038	0.038	0.036	0.036	0.038	0.036
13	Tokyo(Chinjyuku)	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.049	0.050	0.049	0.049	0.049
14	Kanagawa(Chigasaki)	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.051	0.051	0.052	0.051
15	Niigata(Niigata)	0.047	0.046	0.048	0.046	0.046	0.046	0.047	0.047	0.050	0.049	0.047	0.047	0.046	0.048
16	Toyama(Imizu)	0.053	0.049	0.048	0.051	0.051	0.051	0.049	0.048	0.047	0.046	0.046	0.046	0.046	0.048
17	Ichikawa(Kanazawa)	0.049	0.048	0.047	0.049	0.048	0.047	0.047	0.047	0.047	0.047	0.046	0.046	0.046	0.048
18	Fukui(Fukui)	0.050	0.047	0.048	0.047	0.050	0.047	0.044	0.044	0.044	0.044	0.044	0.044	0.043	0.043
19	Yamanashi(Kofu)	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
20	Nagano(Nagano)	0.077	0.077	0.078	0.078	0.078	0.078	0.079	0.079	0.079	0.080	0.078	0.077	0.076	0.075
21	Gifu(Kakumihara)	0.060	0.060	0.060	0.060	0.060	0.061	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060
22	Shizuoka(Shizuoka)	0.040	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038
23	Aichi(Nagoya)	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039
24	Mie(Yokkaichi)	0.051	0.050	0.049	0.048	0.048	0.048	0.049	0.048	0.049	0.047	0.046	0.045	0.045	0.045
25	Shiga(Otsu)	0.033	0.033	0.034	0.033	0.032	0.032	0.036	0.036	0.034	0.033	0.032	0.032	0.032	0.032
26	Kyoto(Kyoto)	0.038	0.038	0.038	0.039	0.038	0.038	0.038	0.041	0.039	0.038	0.038	0.038	0.038	0.037
27	Osaka(Osaka)	0.043	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.043	0.042	0.042	0.042	0.042
28	Hyogo(Kobe)	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037
29	Nara(Nara)	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047
30	Wakayama(Wakayama)	0.033	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.031
31	Tottori(Tohhaku)	0.059	0.058	0.058	0.057	0.063	0.060	0.058	0.057	0.056	0.056	0.057	0.057	0.057	0.058
32	Shimane(Matsue)	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.037	0.038	0.039
33	Okayama(Okayama)	0.049	0.048	0.048	0.049	0.049	0.049	0.049	0.049	0.050	0.050	0.050	0.050	0.050	0.051
34	Hiroshima(Hiroshima)	0.046	0.047	0.047	0.048	0.047	0.047	0.048	0.049	0.050	0.050	0.050	0.051	0.051	0.051
35	Yamaguchi(Yamaguchi)	0.102	0.096	0.093	0.093	0.093	0.094	0.094	0.095	0.095	0.096	0.096	0.096	0.096	0.097
36	Tokushima(Tokushima)	0.042	0.040	0.039	0.038	0.038	0.038	0.037	0.038	0.038	0.038	0.038	0.038	0.038	0.038
37	Kagawa(Takamastu)	0.053	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.053
38	Ehime(Matsuyama)	0.049	0.050	0.048	0.048	0.048	0.048	0.049	0.049	0.049	0.050	0.050	0.051	0.050	0.050
39	Kochi(Kochi)	0.026	0.026	0.025	0.025	0.025	0.025	0.025	0.025	0.026	0.026	0.026	0.026	0.026	0.027
40	Fukuoka(Dazaifu)	0.038	0.036	0.036	0.036	0.036	0.037	0.037	0.037	0.037	0.038	0.037	0.037	0.037	0.038
41	Shiga(Shiga)	0.038	0.040	0.040	0.040	0.040	0.040	0.041	0.041	0.041	0.041	0.041	0.041	0.041	0.041
42	Nagasaki(Ohmura)	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.030
43	Kumamoto(Uto)	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.028	0.028	0.028	0.028	0.028
44	Oita(Oita)	0.049	0.049	0.048	0.049	0.049	0.049	0.049	0.049	0.049	0.050	0.050	0.050	0.051	0.051
45	Miyazaki(Miyazaki)	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.027	0.027	0.027	0.027	0.027	0.027	0.027
46	Kagoshima(Kagoshima)	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.036	0.035	0.035	0.035	0.035
47	Okinawa(Uruma)	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021

*The data in Miyagi are not measured because monitoring point has risk of collapsing.

*Refer to other title "Readings at Monitoring Post out of 20 Km Zone of Fukushima Dai-ichi NPP" for the data in Fukushima. It could not

*Blanks are caused by device clearance, but the area was measured by Monitoring Posts.

*These data are estimated as 1μ Gy/h = 1μ Sv/h.

*The table was made by MEXT, based on the reports from prefectures.

Reading of environmental radioactivity level by prefecture

19:00 March 18, 2011

(μ Sv/h)

	Prefecture(City)	2011/3/18										Range of past usual figure:
		7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	
1	Hokkaido(Sapporo)	0.027	0.027	0.027	0.027	0.028	0.027	0.027	0.027	0.027	0.027	0.02~0.105
2	Aomori(Aomori)	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.019	0.019	0.019	0.017~0.102
3	Iwate(Morioka)	0.031	0.030	0.029	0.029	0.028	0.028	0.028	0.028	0.028	0.028	0.014~0.084
4	Miyagi(Sendai)											0.0176~0.0513
5	Akita(Akita)	0.034	0.034	0.034	0.034	0.033	0.033	0.034	0.033	0.034	0.033	0.022~0.088
6	Yamagata(Yamagata)	0.040	0.040	0.040	0.040	0.040	0.040	0.039	0.040	0.040	0.040	0.025~0.082
7	Fukushima(Futaba)											0.037~0.071
8	Ibaraki(Mito)	0.197	0.195	0.195	0.193	0.192	0.191	0.190	0.189	0.188	0.187	0.036~0.056
9	Toshigi(Utsunomiya)	0.175	0.175	0.172	0.171	0.170	0.169	0.168	0.167	0.166	0.165	0.030~0.067
10	Gunma(Maebashi)	0.089	0.088	0.087	0.087	0.086	0.086	0.086	0.086	0.085	0.085	0.017~0.045
11	Saitama(Saitama)	0.060	0.059	0.059	0.059	0.059	0.058	0.058	0.058			0.031~0.060
12	Chiba(Ishihara)	0.036	0.035	0.035	0.035	0.034	0.034	0.034	0.034	0.034	0.034	0.022~0.044
13	Tokyo(Chinjyuku)	0.049	0.049	0.049	0.048	0.049	0.049	0.049	0.048	0.048	0.048	0.028~0.079
14	kanagawa(Chigasaki)	0.051	0.051	0.051	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.035~0.069
15	Niigata(Niigata)	0.046	0.045	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.031~0.153
16	Toyama(Izumi)	0.046	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.029~0.147
17	Ichikawa(kanazawa)	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.0291~0.1275
18	Fukui(Fukui)	0.043	0.044	0.043	0.043	0.043	0.044	0.044	0.044	0.044	0.045	0.032~0.097
19	Yamanashi(Kofu)	0.044	0.043	0.043	0.043	0.044	0.043	0.043	0.043	0.043	0.044	0.040~0.064
20	Nagano(Nagano)	0.074	0.073	0.072	0.072	0.071	0.071	0.071	0.071	0.071	0.071	0.0299~0.0974
21	Gifu(Kakumuhara)	0.061	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.057~0.110
22	Shizuoka(Shizuoka)	0.038	0.037	0.038	0.038	0.038	0.038	0.038	0.037	0.037	0.037	0.0281~0.0785
23	Aichi(Nagoya)	0.039	0.039	0.039	0.039	0.038	0.038	0.039	0.039	0.039	0.039	0.035~0.074
24	Mie(Yokkaichi)	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.0418~0.0789
25	Shiga(Otsu)	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.033	0.031~0.061
26	Kyoto(Kyoto)	0.038	0.038	0.038	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.033~0.087
27	Osaka(Osaka)	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042~0.081
28	Hyogo(Kobe)	0.037	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.035~0.076
29	Nara(Nara)	0.047	0.046	0.047	0.046	0.047	0.047	0.047	0.047	0.047	0.047	0.046~0.08
30	Wakayama(Wakayama)	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031~0.056
31	Tottori(Tohhaku)	0.058	0.058	0.058	0.058	0.058	0.058	0.060	0.061	0.062	0.062	0.036~0.11
32	Shimane(Matsue)	0.039	0.038	0.037	0.037	0.036	0.037	0.036	0.037	0.036	0.036	0.033~0.079
33	Okayama(Okayama)	0.051	0.050	0.049	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.043~0.104
34	Hiroshima(Hiroshima)	0.051	0.051	0.049	0.047	0.047	0.047	0.047	0.047	0.046	0.046	0.035~0.069
35	Yamaguchi(Yamaguchi)	0.097	0.097	0.095	0.093	0.093	0.092	0.092	0.092	0.092	0.092	0.084~0.128
36	Iokushima(Tokushima)	0.038	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037~0.067
37	Kagawa(Takamastu)	0.053	0.052	0.052	0.052	0.052	0.051	0.052	0.052	0.051	0.052	0.051~0.077
38	Ehime(Matsuyama)	0.050	0.049	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.045~0.074
39	Kochi(Kochi)	0.027	0.027	0.025	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.023~0.076
40	Fukuoka(Dazaifu)	0.038	0.037	0.037	0.036	0.036	0.037	0.036	0.036	0.036	0.036	0.034~0.079
41	Shiga(Shiga)	0.041	0.041	0.041	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.037~0.086
42	Nagasaki(Ohmura)	0.029	0.030	0.030	0.030	0.029	0.029	0.029	0.029	0.029	0.029	0.027~0.069
43	Kumamoto(Uto)	0.028	0.028	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.021~0.067
44	Oita(Oita)	0.051	0.051	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.048~0.085
45	Miyazaki(Miyazaki)	0.027	0.027	0.027	0.027	0.028	0.028	0.028	0.028	0.028	0.028	0.0243~0.0664
46	kagoshima(Kagoshima)	0.035	0.035	0.035	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.0308~0.0943
47	Okinawa(Uruma)	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.020	0.021	0.020	0.0133~0.0575

*Reading of Miyagi was not measured because monitoring point has risk of collapsing.

*Refer to other title "Readings at Monitoring Post out of 20 Km Zone of Fukushima Dai-ichi NPP" for reading of Fukushima. It could not be measured by

*Blanks are caused by device clearance, but the area was measured by Monitoring Posts.

*These dates are estimated as 1 μ Gy/h=1 μ Sv/h.

*The table was made by MEXT, based on the reports from prefectures.

茨城県におけるモニタリング状況(1/3)

文部科学省

19:00 March 18, 2011

μSv/h

Date	JAEA nuclear science research institute (Tokai-village in Ibaraki-prefecture)	JAEA Nuclear fuel cycle engineering laboratory (Tokai-village in Ibaraki-prefecture)	Yayoi in Tokyo University (Tokai-village in Ibaraki-prefecture)
2011/3/15			
7:00	4.40	4.69	4.82
7:13		5.14	
7:18	5.00		
7:30	5.00	4.59	4.99
7:46			5.80
8:00	5.80	5.06	3.58
8:30	4.90	2.98	3.15
9:00	4.00	2.68	2.85
9:30	3.60	2.39	2.58
10:00	3.30	2.17	2.32
11:00	2.80	1.95	2.14
12:00	2.60	1.67	2.03
12:30	2.60		1.85
13:00	2.40	1.54	1.69
13:30	2.30	1.48	1.63
14:00	2.20	1.43	1.56
14:30	2.10	1.34	1.50
15:00	2.10	1.29	1.51
15:30	2.00	1.25	1.47
16:00	2.00	1.21	1.41
16:30	1.90	1.17	1.38
17:00	1.90	1.15	1.34
17:30	1.80		1.24
18:00	1.80	1.09	1.42
18:30	1.80	1.07	1.29
19:00	1.80	1.05	1.24
19:30	1.80	1.03	1.26
20:00	1.70	1.02	1.33
20:30	1.70		1.22
21:00	1.70	1.00	1.24
21:30		0.98	1.20
22:00	1.70		1.11
22:30	1.70	0.98	1.06
23:00	1.70	0.97	1.22
23:30		0.96	1.20
2011/3/16			
0:00	1.80	0.96	1.11
0:30		0.95	1.09
1:00	1.60	0.94	1.11
1:30	1.60	0.94	1.08
2:00	1.60	0.95	1.14
2:30	1.60	0.95	1.11
3:00	1.70	0.96	1.12
3:30	1.80	0.95	1.20
4:00	1.70	0.95	1.22
4:30	1.70	0.98	1.30
5:00	2.10	1.57	1.80
5:30	2.50	2.00	2.35
6:00	2.90	2.34	2.71
6:30	2.70	2.13	2.40
7:00	2.50	1.86	2.12
7:30	2.40	1.80	1.99
8:00	2.30	1.71	2.00
8:30	2.30	1.65	1.85
9:00	2.20	1.58	1.85
9:30	2.10	1.53	1.72
10:00	2.10		1.67
10:30			1.63
11:00			1.59
11:30			1.55
12:00	1.90	1.32	1.54
12:30	1.90	1.23	1.42
13:00	1.80		1.41
13:30	1.90	1.19	1.43
14:00	1.80	1.18	1.39
14:30	1.80	1.14	1.37
15:00	1.70	1.12	1.36
15:30	1.70	1.11	1.30
16:00	1.60	1.10	1.36
16:30	1.60		1.35
17:00	1.60	1.07	1.39
17:30	1.60	1.07	1.28
18:00	1.60	1.06	1.30

茨城県におけるモニタリング状況(2/3)

文部科学省

19:00 March 18, 2011

 $\mu\text{Sv/h}$

Date	JAEA nuclear science research institute (Tokai-village in Ibaraki- prefecture)	JAEA Nuclear fuel cycle engineering laboratory (Tokai-village in Ibaraki- prefecture)	Yayoi in Tokyo University (Tokai-village in Ibaraki- prefecture)
19:30	1.60	1.04	1.37
20:00	1.60	1.04	1.39
20:30	1.60	1.04	1.24
21:00	1.50		1.27
21:30	1.50	1.04	1.25
22:00	1.50	1.03	1.30
22:30	1.50	1.03	1.33
23:00	1.50	1.02	1.34
23:30	1.50	1.02	1.28
2011/3/17			
0:00	1.50	1.02	1.22
0:30	1.50	1.01	1.22
1:00	1.50	1.02	1.28
1:30	1.50	1.01	1.19
2:00	1.50	1.01	1.22
2:30	1.50	1.01	1.23
3:00	1.50	1.01	1.18
3:30	1.50	1.01	1.23
4:00	1.50	1.00	1.31
4:30	1.50	1.00	1.23
5:00	1.50	0.99	1.31
5:30	1.50	0.99	1.25
6:00	1.50	0.99	1.13
6:30	1.50	0.99	1.23
7:00	1.50	0.98	1.24
7:30	1.50	0.99	1.13
8:00	1.50	0.98	1.17
8:30	1.50	0.97	1.15
9:00	1.40	0.96	1.20
9:30	1.40	0.96	1.14
10:00	1.40	0.96	1.15
10:30	1.40	0.95	1.15
11:00	1.40	0.94	1.13
11:30	1.40	0.93	1.17
12:00	1.40	0.94	1.22
12:30	1.40	0.94	1.15
13:00	1.40	0.93	1.13
13:30	1.40	0.92	1.12
14:00	1.40	0.92	1.12
14:30	1.40	0.92	1.12
15:00	1.40	0.92	1.12
15:30	1.40	0.91	1.15
16:00	1.40	0.90	1.09
16:30	1.40	0.90	1.03
17:00	1.40	0.89	1.05
17:30	1.30	0.89	1.08
18:00	1.30	0.88	1.16
18:30	1.30	0.89	1.18
19:00	1.30	0.88	1.10
19:30	1.30	0.88	1.07
20:00	1.30	0.88	1.10
20:30	1.30	0.87	1.10
21:00	1.30	1.10	1.10
21:30	1.30	1.10	1.10
22:00	1.30	1.08	1.08
22:30	1.30	1.09	1.09
23:00	1.30	1.09	1.09
23:30	1.30	1.10	1.10
2011/3/18			
0:00	1.30	0.86	1.09
0:30	1.30	0.85	1.10
1:00	1.30	0.85	1.08
1:30	1.30	0.85	1.06
2:00	1.30	0.85	1.05
2:30	1.30	0.85	1.10
3:00	1.30	0.85	1.09
3:30	1.30	0.85	1.07
4:00	1.30	0.85	1.05
4:30	1.30	0.84	1.08
5:00	1.30	0.84	1.08
5:30	1.30	0.83	1.06
6:00	1.30	0.83	1.07
6:30	1.30	0.83	1.05
7:00	1.30	0.83	1.06

茨城県におけるモニタリング状況(3/3)

文部科学省

19:00 March 18, 2011

μSv/h

Date	JAEA nuclear science research institute (Tokai-village in Ibaraki- prefecture)	JAEA Nuclear fuel cycle engineering laboratory (Tokai-village in Ibaraki- prefecture)	Yayoi in Tokyo University (Tokai-village in Ibaraki- prefecture)
8:30	1.30	0.82	1.00
9:00	1.20	0.82	1.03
9:30	1.20	0.82	0.97
10:00	1.20	0.82	1.07
10:30	1.20	0.81	1.03
11:00	1.20	0.80	1.00
11:30	1.20	0.80	1.00
12:00	1.20	0.80	0.99
12:30	1.20	0.80	0.99
13:00	1.20	0.79	1.03
13:30	1.20	0.79	1.00
14:00	1.20	0.79	0.99
14:30	1.20	0.78	1.08
15:00	1.20	0.78	1.04
15:30	1.20	0.78	0.98
16:00	1.20	0.77	0.96
16:30	1.20	0.77	0.96
17:00	1.20	0.77	0.97
17:30	1.20	0.77	0.96
18:00		0.76	0.95

Rev.1 2011.4.21

RESTRICTED

Plant Status Evaluation of 1F-1, 2 and 3
from 25th March 0:00 to 8th April 0:00

April 21 2011

Nuclear Energy System Safety Division
JNES

* : The evaluation of the plant status are based on the available technical information till 8th April 0:00. We acknowledge that the evaluation is subject to change and refinement.

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Plant Status of 1F-1 from 25th March 0:00 to 8th April 0:00

Reactor Pressure Vessel (RPV)

- Although there is small size rupture at the bottom head (e.g., instrumental penetrations or CRD housings), most damaged / molten core remains in RPV at the reactor core or vessel bottom(*1,*2). However, small part of damaged / molten core may be accumulated on D/W floor (inside the lower pedestal) through the breach.
- Cooling water is injected into RPV through FW nozzles. Cooling water flows into inside of the shroud after filling up the downcommer outside the shroud. The reactor water level has been around "TAF - 1,650 mm" at the flow rate of $\sim 10 \text{ m}^3/\text{h}$ ($\sim 2011/3/25$).

*1: Total amount of injected water into RPV was $\sim 4,700 \text{ m}^3$ on 27th March. Total amount of steam could be generated by decay heat was estimated to be $2,800 \text{ m}^3$. If the steam of $\sim 2,800 \text{ m}^3$ was released from RPV to S/C through SRVs (i.e., SRVs were assumed to be stuck open), injected water of $\sim 1,900 \text{ m}^3$ still remained in RPV. However, it is unreasonable because the volume of RPV is around $\sim 280 \text{ m}^3$. This implies that there are leak paths through RPV bottom.

*2: After the temperature of surface of RPV bottom increased over $\sim 400^\circ\text{C}$ (2011/3/23), the flow rate was increased and maintained around $\sim 7\sim 8 \text{ m}^3/\text{h}$. This decreased the RPV surface temperature to $120\sim 150^\circ\text{C}$ (2011/3/24 or later). The increased flow rate made water ingression to hot damaged / molten core on the lower head, and then the cooling of damaged / molten core was promoted.

■ **Primary Containment Vessel (PCV)**

- Since D/W pressure (as well as S/C pressure) increased to ~ 0.84 MPa (2011/3/12) and the temperature of D/W atmosphere increased to $\sim 400^\circ\text{C}$ (2011/3/23), small leak paths are inferred. However, the leak tightness of PCV is kept to some extent.
- The water through the vessel bottom breach flows into S/C through the vent pipes between D/W and S/C, after filling up D/W floor up to the lowest level of vent pipes(*3). This means water is accumulated on D/W floor. The gaseous part is enough remain in the upper part of S/C, to function the vent pipes and the vacuum breakers between D/W and S/C (before $\sim 2011/4/7$) (*4).

*3: This inference is based on that there are leak paths through the RPV bottom head, and that water are continuously injected into RPV.

*4: The fact that D/W pressure is nearly same as S/C pressure, implies that vent pipes and vacuum breakers are not flooded and can fulfill their functions.

PCV Pressure

- The steam generated by decay heat is released through leak paths of D/W. However, the leak tightness of PCV is kept to some extent, D/W pressure is slightly higher than atmospheric pressure.
- S/C pressure is 0.160 MPa. S/P temperature is 55°C of which saturation pressure is 0.016 MPa(2011/4/2 or later). Therefore, the gaseous part of S/C is filled with not only saturated steam but also considerable amount of non-condensable gases (e.g., nitrogen, hydrogen, oxygen, noble gases etc.)

D/W pressure (0.155 MPa) and S/C pressure (0.160 MPa) are almost same, since vacuum breakers can perform their functions (2011/3/24 or later). In addition, the partial pressure of saturated steam may become higher than 0.016 MPa, if the thermal stratification is considered at the upper region above the lower end of the downcomer in S/P.

- *1: PCV pressure (DW pressure:0.155 MPa, S/C pressure:0.160 MPa) at the onset of nitrogen purge(2011/4/7), slightly increased by the nitrogen purge to D/W Pressure of 0.175 MPa, and S/C pressure of 0.170 MPa at 2011/4/17.

RPV Pressure

- Most of damaged / molten core remains in reactor core or in vessel bottom. The damaged core uncovered by water heats up RPV (e.g., flange, vessel middle, lower head etc.) , shroud, FW nozzles and so on. The steam generated by molten core accumulated in the vessel bottom makes RPV pressure higher than D/W pressure (*2). The water and steam flow out through the breach of the bottom head(*3).

- *2: The reason why the indication of a channel A (0.190 MPa-g) defers from that of channel B (0.542 MPa-g) (2011/4/8) is hard to understand. However, the indication of channel B seems to be incorrect, because RPV pressure indicated by a channel B has not followed D/W pressure at 2011/3/26 or later.

- *3: During the nitrogen purge period, where D/W was pressurized, RPV pressure (0.464 MPa (absolute pressure)) deferred from D/W pressure (0.155 MPa) (2011/4/7). Therefore, it is inferred that the gaseous part of RPV does not open into the D/W atmosphere.

■ RPV Temperature

- The water flow rate into RPV was increased and maintained around $\sim 7\sim 8$ m³ when the temperature of FW nozzles became higher than $\sim 400^{\circ}\text{C}$ (2011/3/23). Then, the temperature of FW nozzles decreased to $\sim 200^{\circ}\text{C}$ (2011/3/25). After that, the flow rate was slightly increased when the temperature of FW nozzles became $\sim 300^{\circ}\text{C}$ (2011/3/28). Then, the temperature of FW nozzles decreased to $\sim 250^{\circ}\text{C}$ ($\sim 2011/4/1$). This infers that the increase of the flow rate decreased the core and shroud temperature, and indirectly decreased the temperature of FW nozzles.
- The flow rate into RPV was increased and maintained around $\sim 7\sim 8$ m³ when the temperature of the lower head of RPV became higher than $\sim 400^{\circ}\text{C}$ (2011/3/23). Then the temperature of the lower head decreased to $\sim 120^{\circ}\text{C}\sim 150^{\circ}\text{C}$ (2011/3/25 or later). This infers that injected water reached the heated vessel bottom due to the increase of the flow rate, and cooled the core debris on the vessel bottom.

(b)(5)

Fig.1-1 Plant Status of 1F-1 around 3/31/2011

Recommendations of Accident Managements for 1F-1

Water Injection into RPV

- The injection rate should be kept as minimum as required corresponding to decay heat in order to keep the efficiency of venting from W/W and to prevent a venting line in W/W from submerging.
- The stable cooling for damaged / molten core in RPV has been kept for long days. Therefore, cooling water injection to RPV via FW nozzle to outside of shroud should be kept in order to keep the stable cooling.
- It is not recommended to inject cooling water to inside of shroud via CS lines because cooling water injection to inside of shroud could generate large amount of hydrogen and could progress the degradation of core due to the heat generated by M-W reaction.
- The further progression of degradation of core should be prevented by carrying out continual cooling water injection since the upper part of RPV contains oxygen gas, hydrogen gas and noble gas. The depressurization of RPV can not be recommended. Non-condensable gases contained in RPV can flow into D/W via S/C if SRV or ADS are activated.

Accident Management for D/W

- It is not recommended to activate containment spray system since the containment spray water causes reverse flow of air by steam condensation of steam in D/W.
- It is not recommended to activate venting from D/W. If venting from D/W are activated, accumulated water on D/W floor and fission products contained in S/C pool as well as atmosphere of D/W can be released from PCV.

Accident Management for S/C

- The gaseous part of S/C contains hydrogen gas and oxygen gas by water radiolysis as well as steam. However, the possibility of hydrogen explosion is small since the gaseous part is filled with saturated steam.
- PCV venting from S/C with pool scrubbing is efficient for depressurization of S/C. It is necessary to constantly monitor with pressure equalization between D/W and S/C so that vent pipes are not filled up with water and vacuum breakers are available.

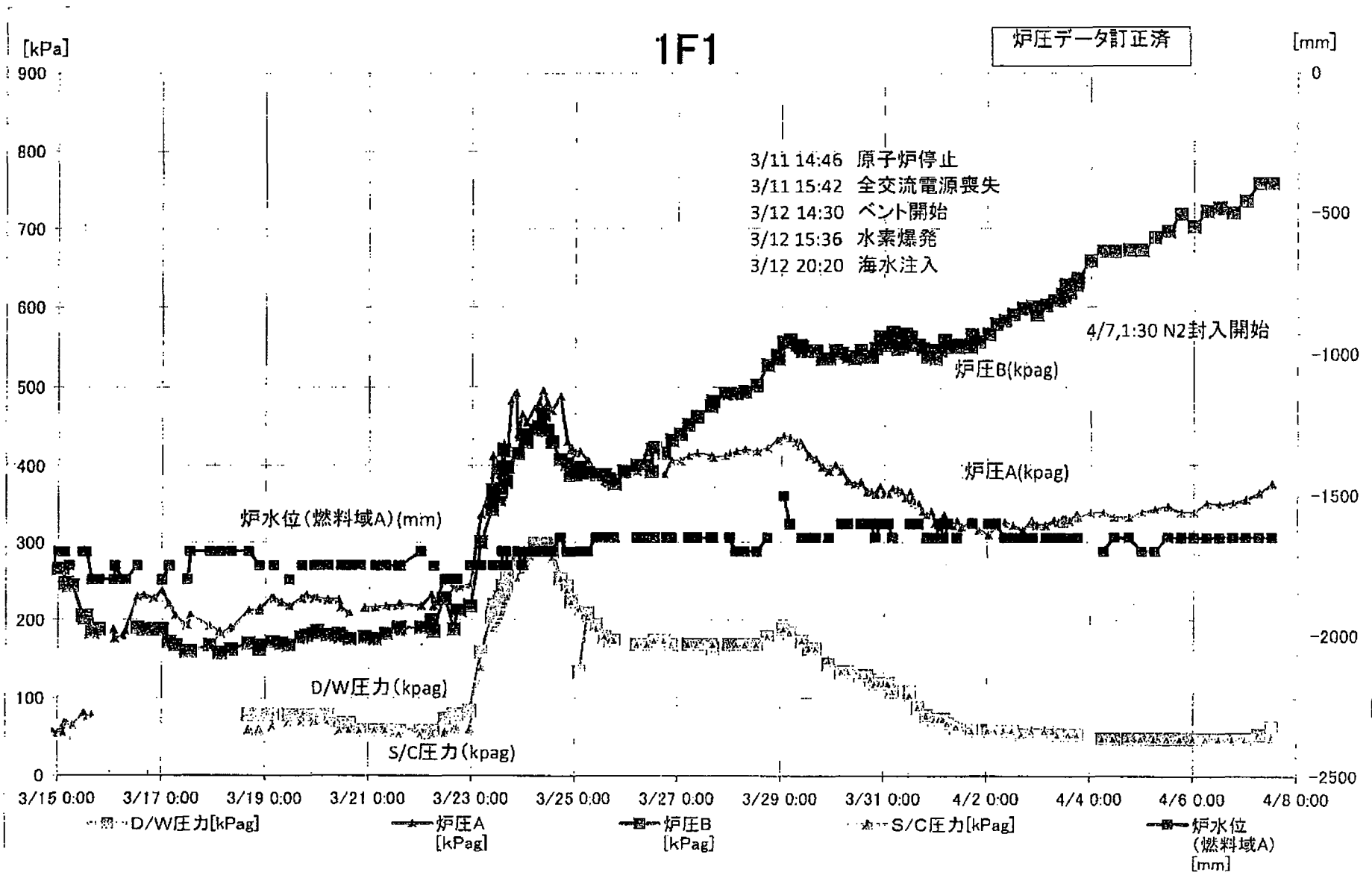


Fig.1-2 Reactor pressure, water level, D/W pressure, S/C pressure (1F-1)

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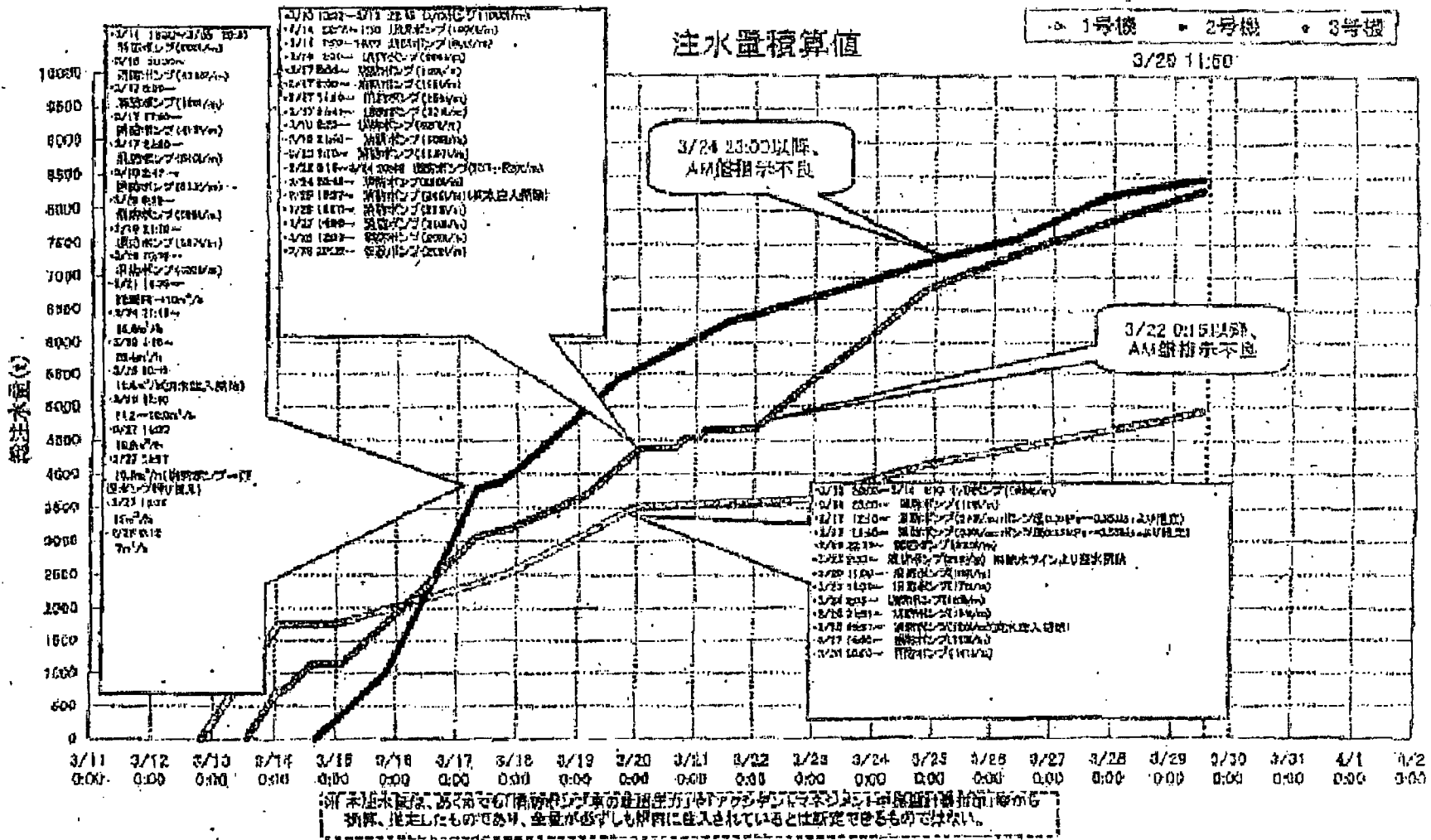
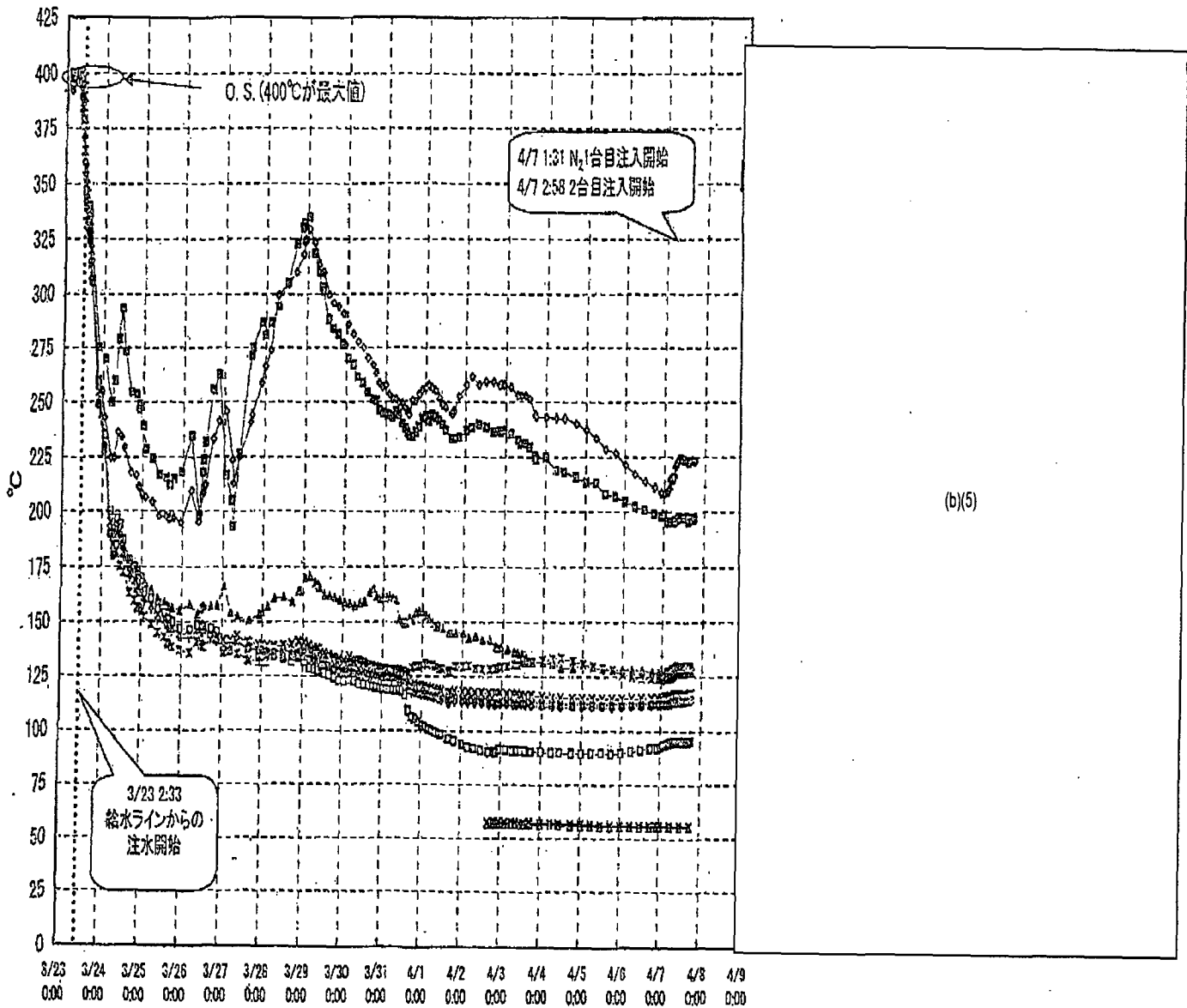


Fig.1-3 The amount of injected water into RPV (1F-1,2 and 3)

1F-1RPV周辺代表点温度(4/7 18:00)



(b)(5)

東電情報(→防災対策部)情報

Fig.1-4 The temperatures of some points around RPV (1F-1)

Plant Status of 1F-2 from 21th March 0:00 to 8th April 0:00

Reactor Pressure Vessel (RPV)

- There is the rupture at the bottom head (e.g., instrumental penetrations or CRD housings) (*1). Most damaged / molten core drops to the lower pedestal. Small amount of damaged / molten core remains in RPV(*2).
- The water flows into the inside of the shroud via PLR exit nozzles and jet pump diffusers. The reactor water level has been around "TAF -1,500 mm" at the flow rate of $\sim 10 \text{ m}^3/\text{h}$.

*1: Total amount of injected water into RPV was $\sim 8,000 \text{ m}^3$ on 27th March. Total amount of steam could be generated by decay heat was estimated to be $\sim 4,000 \text{ m}^3$. If the steam of $\sim 4,000 \text{ m}^3$ was released from RPV to S/C through SRVs (i.e., SRVs were assumed to be stuck open), injected water of $\sim 1,900 \text{ m}^3$ still remained in RPV. However, it is unreasonable because the volume of RPV is around $\sim 200 \text{ m}^3$. This implies that there are leak paths through RPV bottom.

*2: It is inferred that the steam is dominantly generated in D/W based on the fact that D/W pressure is higher than RPV pressure. The RPV surface temperature of 1F-2 is lower than that of 1F-1.

Primary Containment Vessel (PCV)

- S/C is filled up with water, there is water level in D/W and bottom of RPV is flooded. The water level in D/W is communicated with RPV via the rupture at the bottom head of RPV. The water level in RPV is higher than that in D/W because D/W pressure is higher than RPV pressure.
- It is inferred that there are leak paths in S/C based on the fact that hydrogen explosion occurred in S/C (or Torus Room) and there is a large amount of water which may leak from S/C pool.
- Since D/W pressure increased to $\sim 0.75 \text{ MPa}$ (from late at night of 14th to twilight of 15th March), leak paths are inferred in D/W.

■ PCV Pressure

- Since the steam generated by decay heat has been released through large leak paths of D/W, the pressure is around atmospheric pressure (~ 0.1 MPa).
 - Since S/C pressure is ~ 0.1 MPa (the saturation temperature is 100°C) and S/P temperature is 100°C , the gaseous part of S/C is almost filled up with the saturated steam, and very small amount of non-condensable gases (e.g., hydrogen, oxygen etc.) exist (*1).
 - There can be the gaseous part of S/C depending on the location of leak paths in S/C. S/P water continuously flows out through leak paths in S/C, since injected sub-cooled water into RPV flows down to S/C.
- *1: S/C temperature is $\sim 100^{\circ}\text{C}$, of which the saturation pressure is ~ 0.1 MPa. This infers that the breach and/or leak path exist at the upper part of S/C, and that S/C is almost flooded completely. Strictly speaking, S/C pressure is somewhat higher than D/W pressure, because D/W water level is higher than S/C water level.

■ RPV Pressure

- Although a small amount of damaged / molten core remains in RPV, water is injected via PLR exit nozzles and jet pump diffusers. The water injection rate is $\sim 10\text{m}^3/\text{h}$ at room temperature ($\sim 2011/3/31$). Therefore, the pressure of RPV is around 85kPa (slightly lower than the pressure of D/W) because damaged / molten core in RPV is covered with water. The saturation temperature corresponding to 85kPa is 95°C . However, the shroud is heated by the heat conduction from the damaged / molten core stuck to the shroud.

■ RPV Temperature

- The temperature of FW nozzles was 100°C at the water injection rate of $\sim 20\text{m}^3/\text{h}$ (the water level in RPV was $\sim \text{TAF -1,200}$). When the cooling water injection rate was decreased to around $10\text{m}^3/\text{h}$ (the water level in RPV was around TAF -1,500), the temperature of FW nozzles increased to $150\text{-}200^{\circ}\text{C}$.
- The temperature of FW nozzle is high, because of the radiation heat transfer / heat conduction from the damaged / molten core distributed around the shroud. The temperature of the leakage detector of SRV is also increased in the same manner of FW nozzles.
- RPV skirt temperature becomes high, because the gaseous part (air pocket) exists surrounded by RPV bottom head and the skirt.

(b)(5)

Fig.2-1 Plant Status of 1F-2 around 3/31/2011

Recommendations for Accident Managements 1F-2

F Water Injection into RPV

F

F

(b)(5)

F Accident Management for D/W

F

F

(b)(5)

F Accident Management for S/C

F

F

(b)(5)

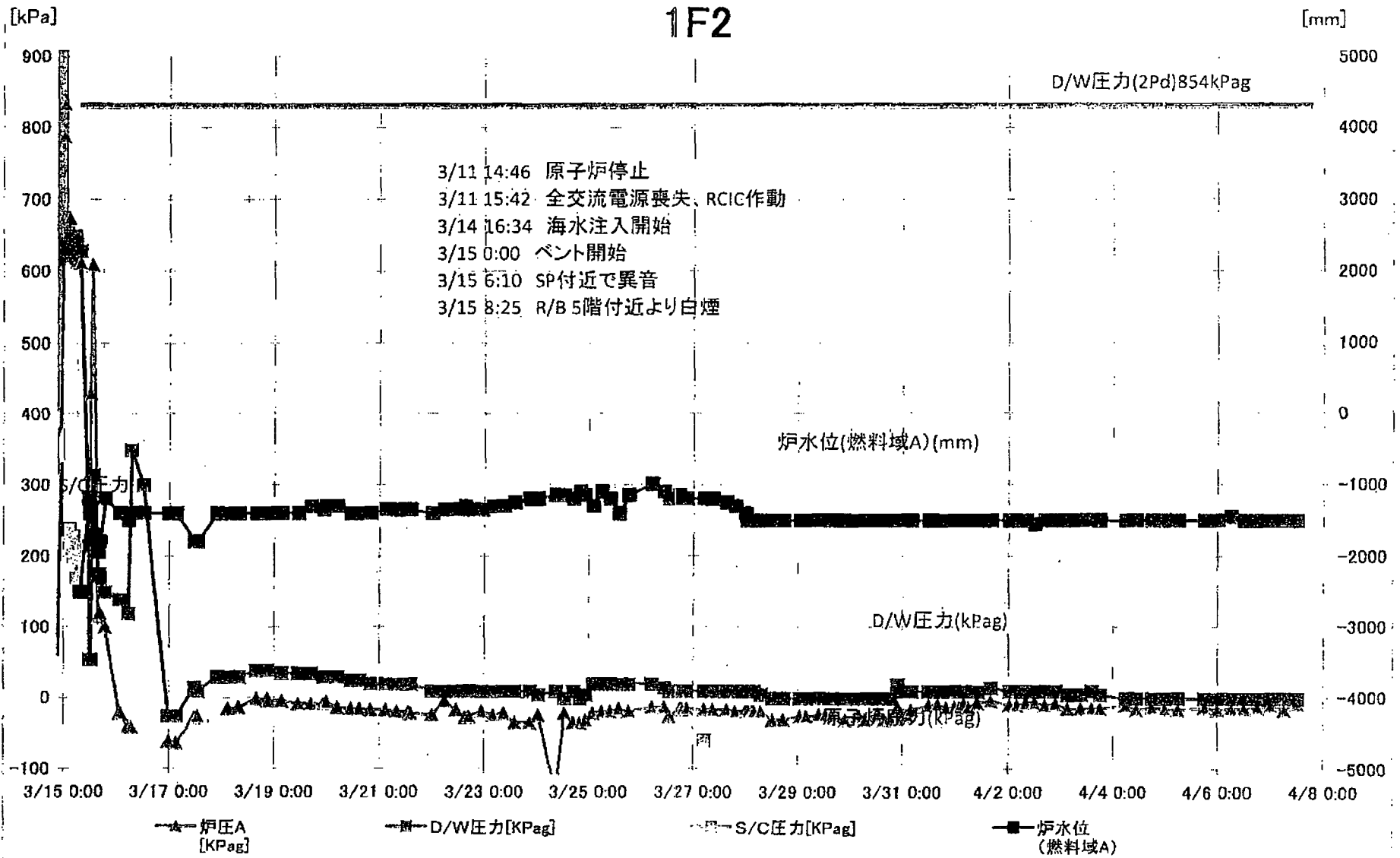
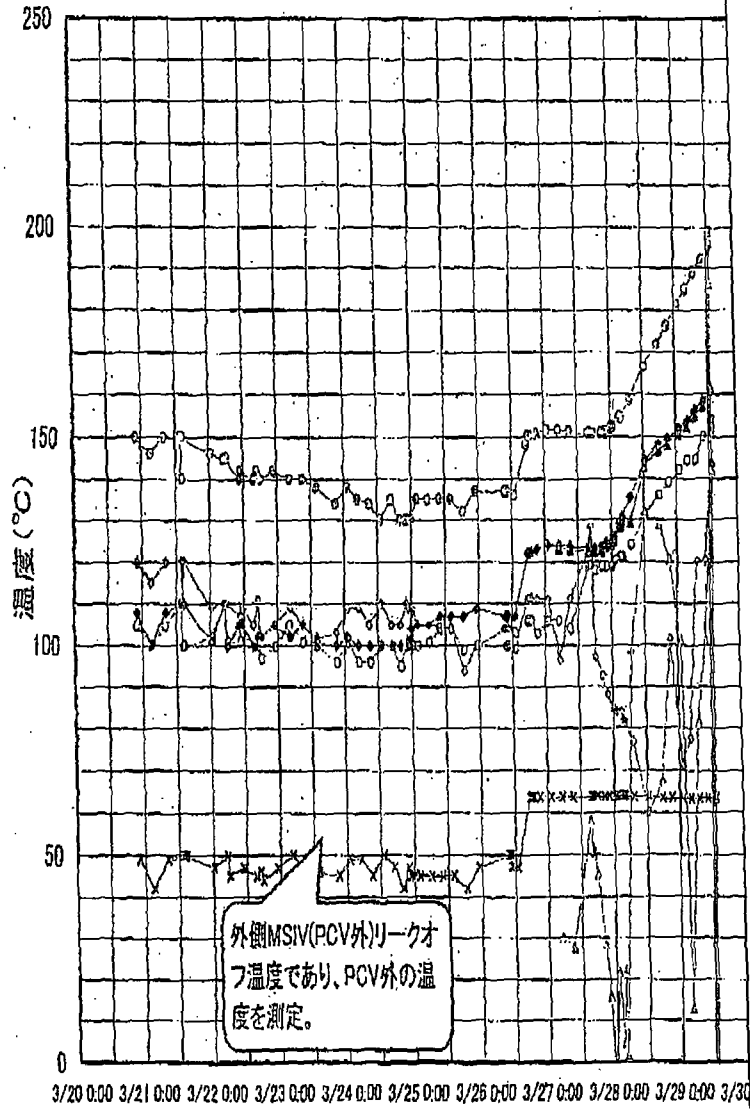


Fig.2-2 Reactor pressure, water level, D/W pressure, S/C pressure (1F-2)₁₄

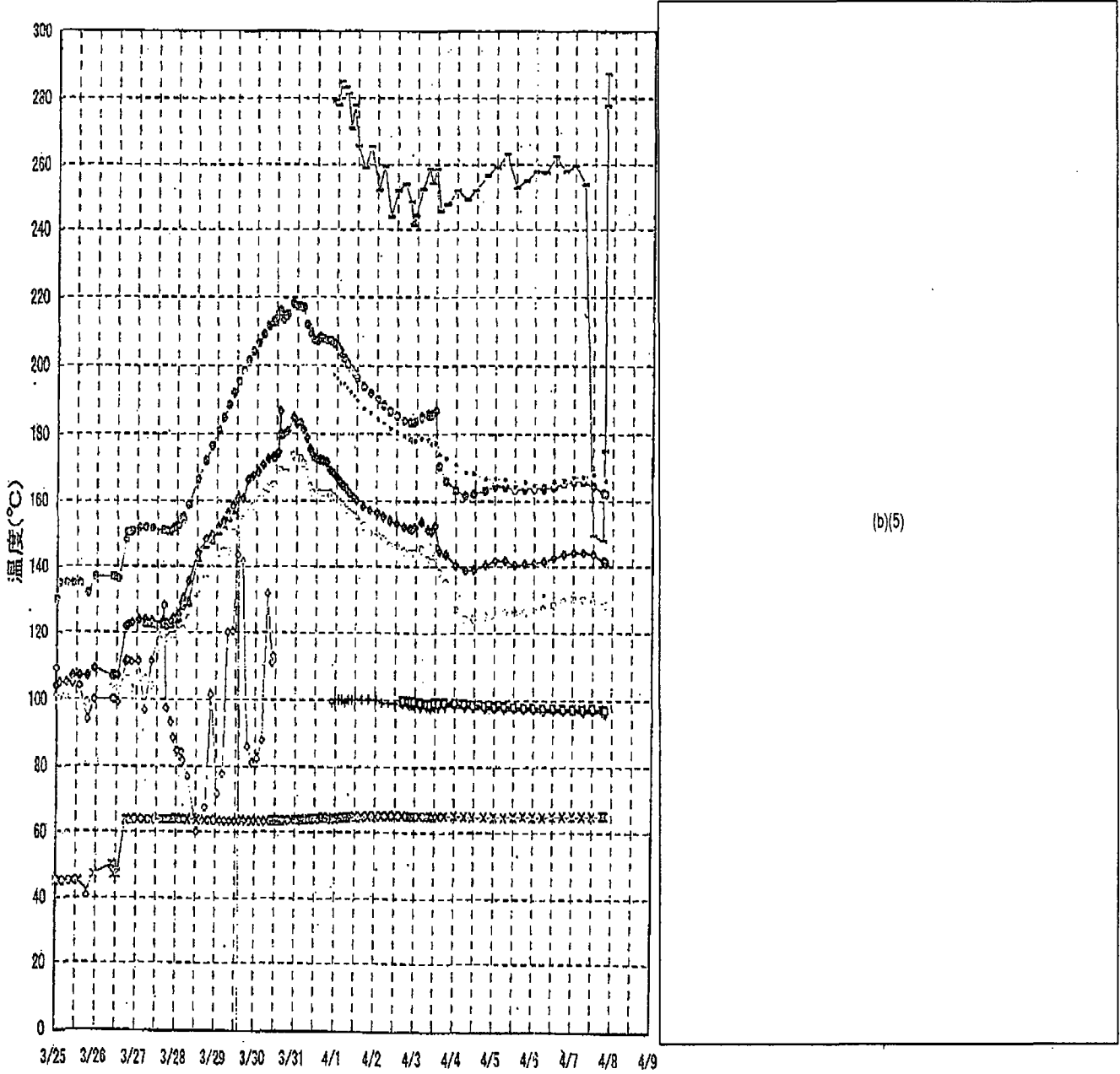
1F-2 RPV・PCV温度(3/29 13:00)



(b)(5)

Fig.2-3-1 The temperatures of some points around RPV (1F-2)

1F-2 RPV周辺代表点温度(4/7 19:40)



東電情報(→防災対策部)情報

Fig.2-3-2 The temperatures of some points around RPV (1F-2)

Plant Status of 1F-3 from 25th March 0:00 to 8th April 0:00

■ Reactor Pressure Vessel (RPV)

- There is the breach at the bottom head (e.g., instrumental penetrations or CRD housings) (*1). Most of damaged / molten core drops into the lower pedestal. Small amount of damaged / molten core remains in RPV (*2).
- The water flows into the inside of the shroud via PLR exit nozzles and jet pump diffusers. The reactor water is around "TAF -2,000 mm" at the flow rate of $\sim 7 \text{ m}^3/\text{h}$ ($\sim 2011/3/29$).

*1: Total amount of injected water into RPV was $\sim 7,500 \text{ m}^3$ on 27th March. Total amount of steam could be generated by the decay heat was estimated to be $\sim 4,000 \text{ m}^3$. If the steam of $\sim 4,500 \text{ m}^3$ was transferred from RPV to S/C through SRVs (i.e., SRVs were assumed to be stuck open), injected water of $\sim 3,000 \text{ m}^3$ still remained in RPV. However, it is unreasonable because the volume of RPV is around $\sim 330 \text{ m}^3$. This implies that there is the breach at the bottom head of RPV.

*2: It is inferred that the steam was dominantly generated by the damaged / molten core in the water inside the RPV pedestal, because D/W pressure was higher than RPV pressure ($\sim 2011/3/21$). The RPV surface temperature of 1F-3 was lower than that of 1F-1.

and 1F2

■ Primary Containment Vessel (PCV)

- S/C is almost filled up with water, and there is the water level in D/W(*3). Since D/W pressure is higher than RPV pressure, the bottom of RPV may be submerged, and the water level of D/W may be communicated with RPV via the rupture at the bottom head of RPV. It is implied that the significant steam explosion and/or the MCCI did not occurred, because the damaged / molten core already existed in the water inside the RPV pedestal.

*3: The water level of D/W reached the level of level switch which was located at the OP 8,300 mm (2011/3/29), and this means vent pipes are submerged.

■ Primary Containment Vessel (PCV) continued

- Vent pipes between D/W and S/C were fully flooded, and there was the water level in D/W. D/W pressure (0.107 MPa(0.006 MPag)) was almost same as RPV pressure (0.01MPag) (2011/3/31).

The water level inside the RPV pedestal is higher than that of D/W outside the pedestal, because of the steam voids generated by the damaged / molten core inside the RPV pedestal. (i.e., The void collapsed water levels are same for the inside and outside the RPV pedestal.) The bottom of RPV may be submerged, and the water level of D/W may be communicated with RPV via the breach at the bottom head of RPV (2011/3/31).

- Leak paths may exist in D/W, based on the facts that D/W pressure (and S/C pressure as well) increased to ~ 0.64 MPa ($\sim 2011/3/13$), that the temperature of the D/W atmosphere increased to $\sim 400^{\circ}\text{C}$ ($\sim 2011/3/23$), and that the hydrogen explosion occurred in the R/B (2011/3/14) (*1).

*1 Total amount of injected water was up to $\sim 7,500$ m³, which exceeded the free volume of PCV ($\sim 2011/3/27$). Therefore, it is obvious that the steam generated by the decay heat was released from D/W. In fact, D/W pressure already became around atmospheric pressure.

- The shield plug on PCV may be covered by the water, which was injected to the spent fuel pool region after hydrogen explosion. The water flowed into the space above the PCV top head through the clearance of the shield plug (*2). When the temperature of D/W atmosphere increased to $300\sim 400^{\circ}\text{C}$ ($\sim 2011/3/23$), the gasket of PCV flange might ruptured by the over heating.

These facts infer that RPV was cooled by the water in the space above the PCV leaked into D/W through the ruptured gasket, during the period where the large amount of water was injected into SFP.

- *2 Even if the condition of the shield plug is normal, water leaks/flows into the region around the top of PCV through the gap of the shield plug (i.e., the shield plug is composed of 9 pieces of concrete plates). It is likely that the shield plug was damaged, because of the hydrogen explosion in R/B. In that case, water flows more easily.

PCV Pressure

- Since amount of steam generated by decay heat has been released through leak paths of D/W, the pressure of D/W is maintained around the atmospheric pressure ($\sim 0.1 \text{ MPa}$) ($\sim 2011/3/21$).
- The leak tightness of S/C is maintained at a certain extent, and D/W is flooded by the water up to a certain level. The gaseous part of S/C is compressed and is maintained at higher pressure than the atmospheric pressure.

Because the temperature of the water flowed from D/W floor to S/C is about 100°C , the partial pressure of non-condensable gases shares the pressure over $\sim 0.1 \text{ MPa}$ ($\sim 2011/3/25$).

RPV Pressure

- Small amount of damaged / molten core remains in RPV. The water is injected into RPV via PLR exit nozzles and jet pump diffusers. The water injection rate is $\sim 7 \text{ m}^3/\text{h}$ at room temperature (2011/3/31).

The RPV pressure (0.01 MPag) is almost same as D/W pressure (0.107 MPa (0.006 MPag)), because the damaged / molten core in RPV is submerged in the water. The saturation temperature corresponding to the RPV pressure is $\sim 103^\circ\text{C}$. However, the shroud is heated by the heat conduction from damaged / molten core which stuck to the shroud (2011/3/31).

- *1 The RPV pressure was measured by channels A and C, since a channel B failed ($\sim 2011/3/21$). The reason of the difference between a channel A (0.01 MPag) and a channel B (-0.09 MPag) is not clear. However, the indication of a channel A is probably reliable, because the indication of a channel C is $\sim 0 \text{ MPa}$ (absolute).

■ **RPV Temperature**

- The temperature of FW nozzles became around 300°C (~2011/3/23). Around this moment, RPV was considered to be cooled by the water flowed via the degraded gasket from the space above PCV top head where the water is accumulated. Another possibility is the effect of the water increased injection into RPV at the flow rate of 30 m³/h (The start timing is unknown).
- The temperature of the lower head became ~250°C on March 23th 0:00. At this moment, RPV was cooled by the injected water at the flow rate of 30 m³/h, and the temperature decreased to ~100°C (~2011/3/26).

(b)(5)

Fig.3-1 Plant Status of 1F-3 around 3/31/2011

Recommendations for Accident Managements for 1F-3

Water Injection into RPV

(b)(5)

Accident Management for D/W

(b)(5)

Accident Management for S/C

(b)(5)

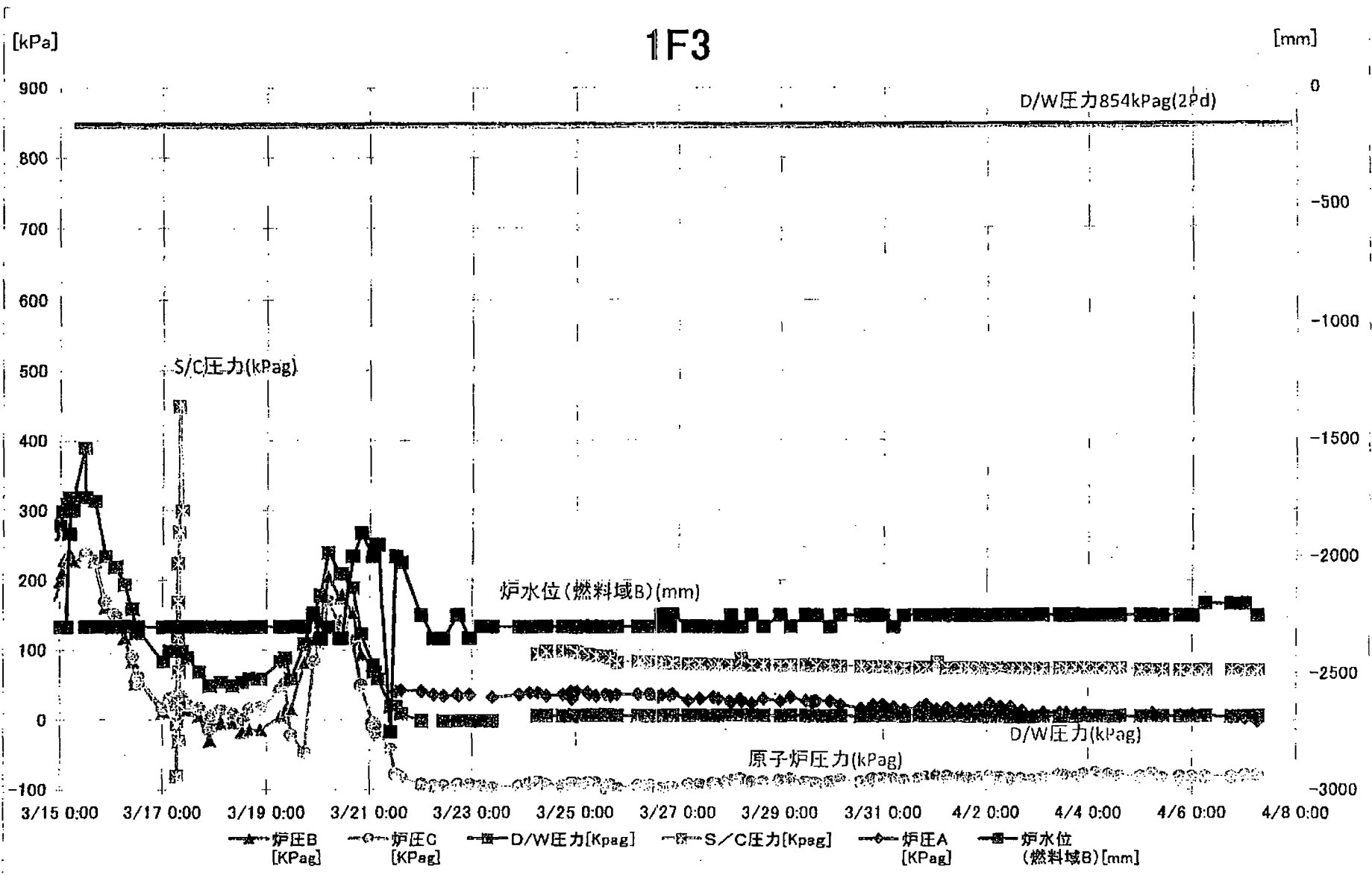
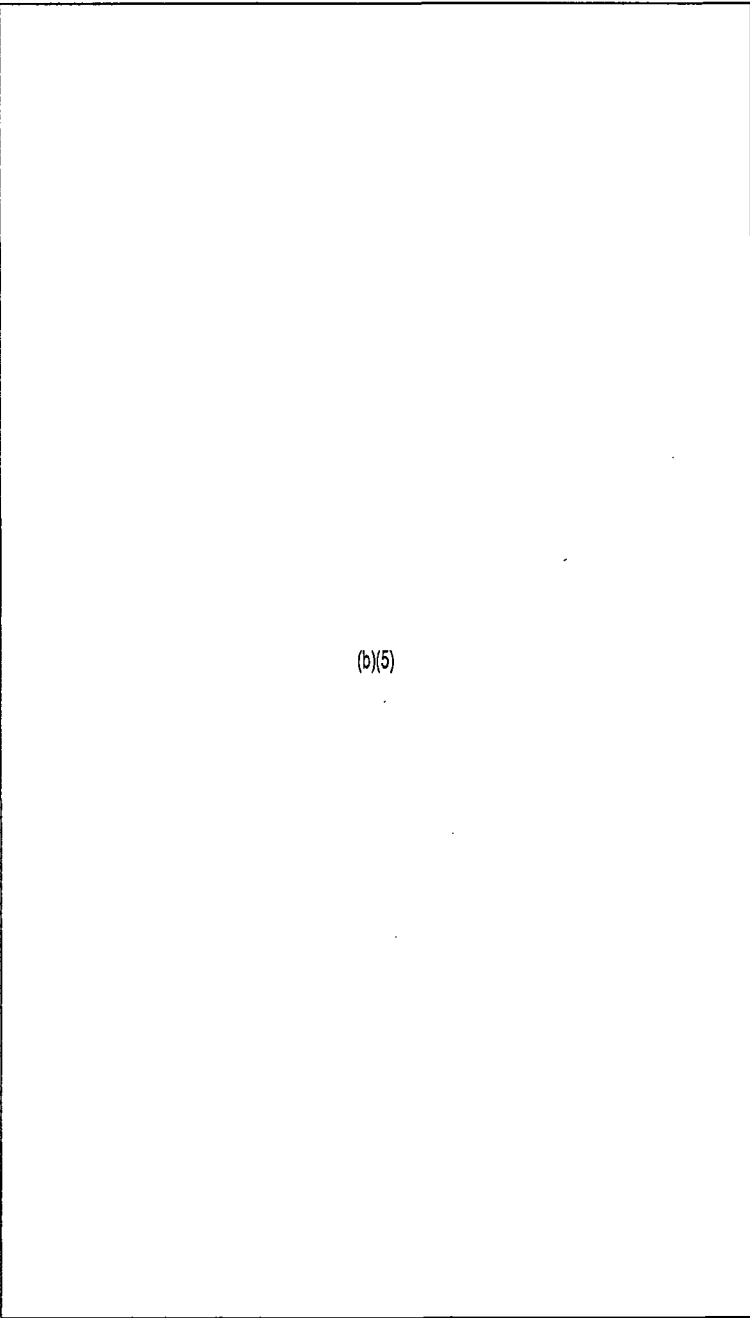
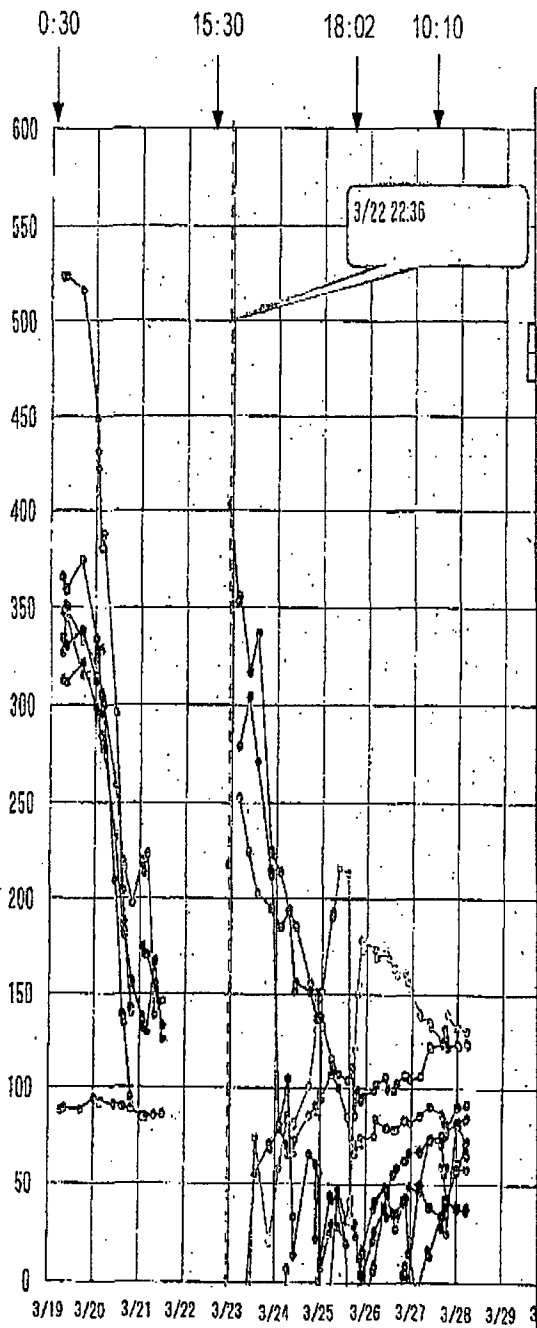


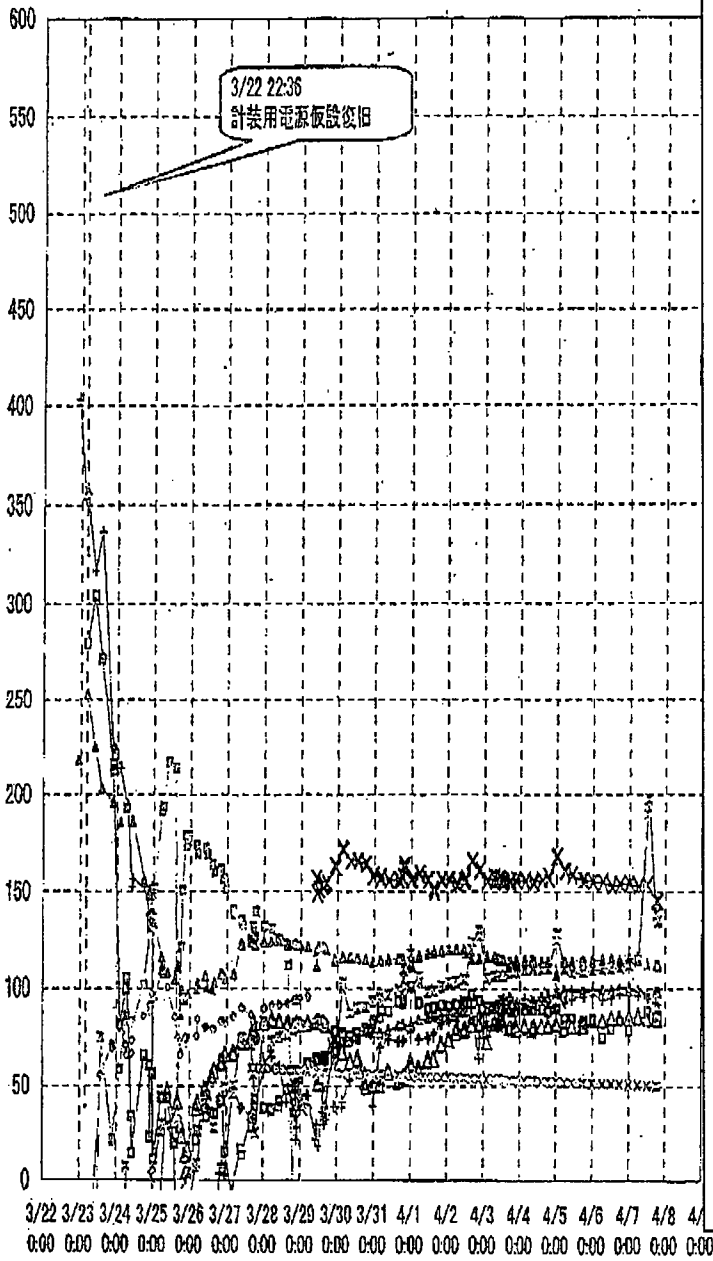
Fig.3-2 Reactor pressure, water level, D/W pressure, S/C pressure (1F-3) 23

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(b)(5)

Fig.3-3-1 The relationship between the timing of SFP injection and the temperatures of some points around RPV (1F-3)



(b)(5)

Fig.3-3-2 The temperatures of some points around RPV (1F-3)

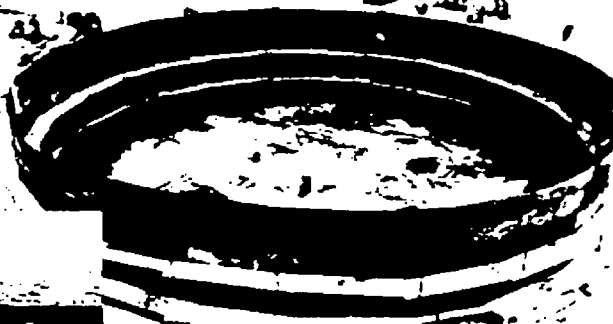
**Potential Near-Term Options to Mitigate Contaminated Water
in Japan's Fukushima Daiichi Nuclear Plant
April 7, 2011**

Environmental cleanup

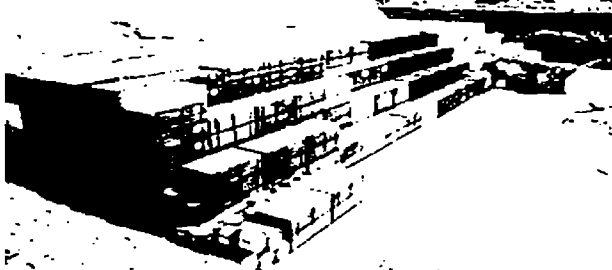
Weapons complex D&D



- Waste management



LLW disposal



**U.S. DEPARTMENT OF
ENERGY**

**Information contained in this document is preliminary, and is not meant to serve as a
recommendation for action**

**Potential Near-Term Options to Mitigate Contaminated Water
in Japan’s Fukushima Daiichi Nuclear Plant**

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**Potential Near-Term Options to Mitigate Contaminated Water
in Japan's Fukushima Daiichi Nuclear Plant**

1. SUMMARY

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2. PURPOSE

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3. ASSUMPTIONS

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**Potential Near-Term Options to Mitigate Contaminated Water
in Japan's Fukushima Daiichi Nuclear Plant**

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**Potential Near-Term Options to Mitigate Contaminated Water
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in Japan's Fukushima Daiichi Nuclear Plant**

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**Potential Near-Term Options to Mitigate Contaminated Water
in Japan's Fukushima Daiichi Nuclear Plant**

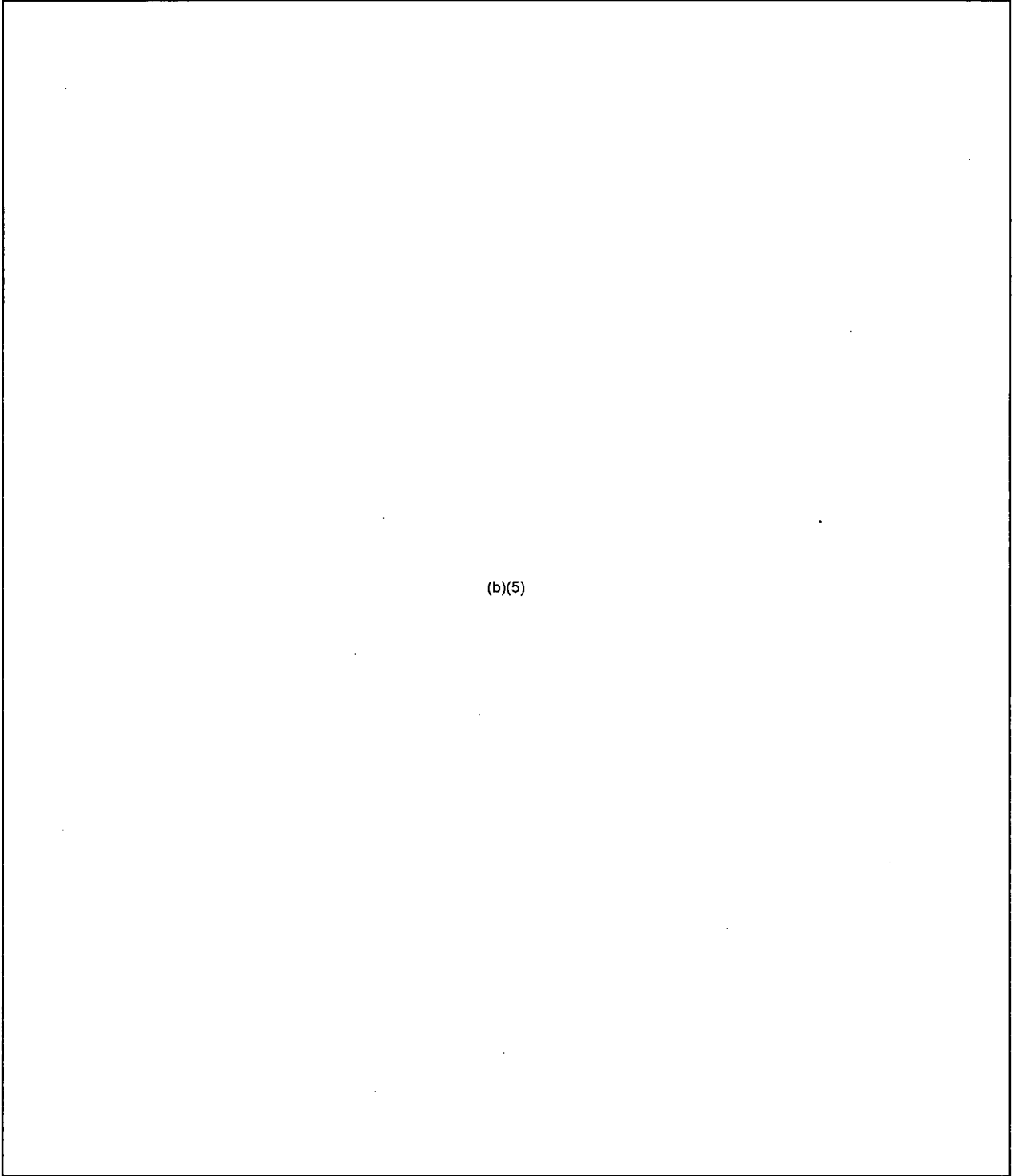
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**Potential Near-Term Options to Mitigate Contaminated Water
in Japan's Fukushima Daiichi Nuclear Plant**

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**Potential Near-Term Options to Mitigate Contaminated Water
in Japan's Fukushima Daiichi Nuclear Plant**

Material Compatibility



(b)(5)

**Potential Near-Term Options to Mitigate Contaminated Water
in Japan's Fukushima Daiichi Nuclear Plant**

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in Japan's Fukushima Daiichi Nuclear Plant**

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**Potential Near-Term Options to Mitigate Contaminated Water
in Japan's Fukushima Daiichi Nuclear Plant**

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in Japan's Fukushima Daiichi Nuclear Plant**

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**Potential Near-Term Options to Mitigate Contaminated Water
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**Potential Near-Term Options to Mitigate Contaminated Water
in Japan's Fukushima Daiichi Nuclear Plant**

Page 38 of 38

**Information contained in this document is preliminary, and is not meant to serve as a
recommendation for action**

DK 1752 of 1892

U.S. Department of Energy Answers to Water Treatment Questions
April 21, 2011

(b)(5)

Disposal of Contaminated Water:

(b)(5)

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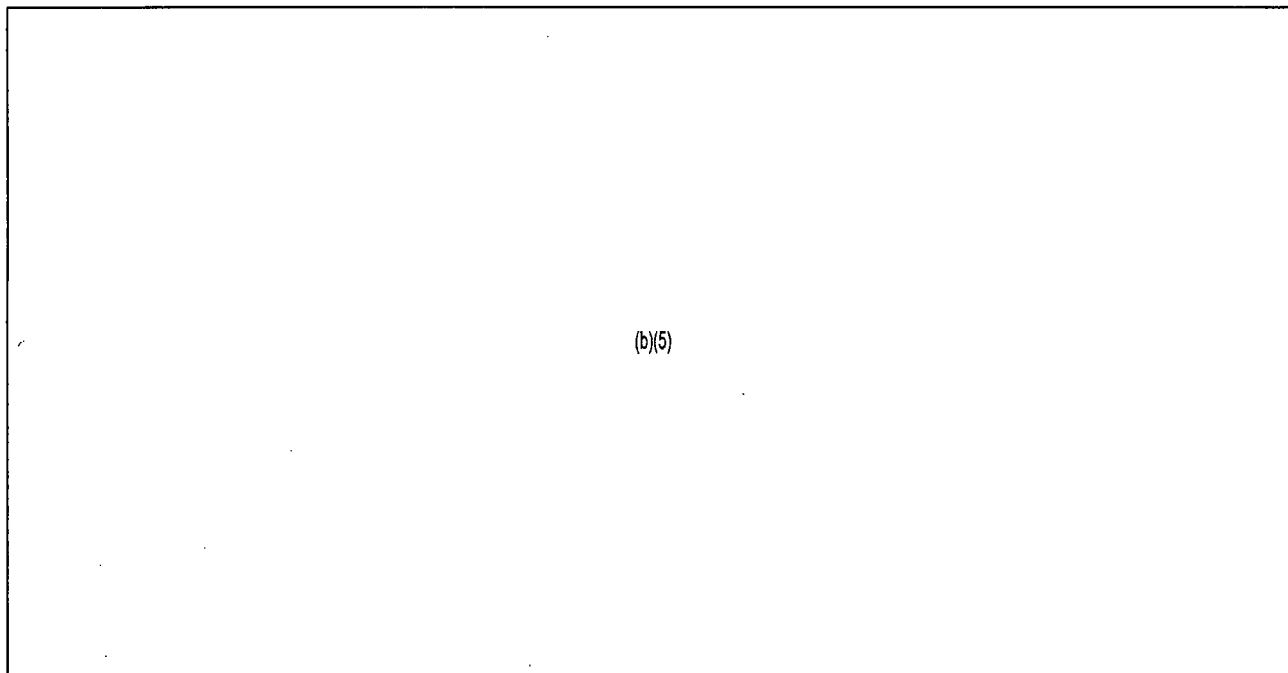
13

(b)(5)

(b)(5)

Information contained in this document describes options and DOE experience, and is not meant to serve as a recommendation for action.

Figure A2: EPICOR-I Flowsheet



(b)(5)

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Information contained in this document describes options and DOE experience, and is not meant to serve as a recommendation for action.

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Information contained in this document describes options and DOE experience, and is not meant to serve as a recommendation for action.

(b)(5)

Information contained in this document describes options and DOE experience, and is not meant to serve as a recommendation for action.

(b)(5)

(b)(5)

From: Wastler, Sandra
Sent: Tuesday, March 15, 2011 2:40 PM
To: Sturz, Fritz; Purdy, Gary
Subject: FW: Fukushima Status Report from Japan Atomic Industrial Forum...
Attachments: ENGNEWS01_1300189582P.pdf

From: Andrukat, Dennis
Sent: Tuesday, March 15, 2011 1:57 PM
To: Wastler, Sandra; Brochman, Phil; Garner, Douglas; Bagley, Susan; Jackson, Gerard; Purdy, Gary; Sturz, Fritz; Cervera, Margaret
Subject: FW: Fukushima Status Report from Japan Atomic Industrial Forum...

From: Schaaf, Robert
Sent: Tuesday, March 15, 2011 11:17 AM
To: NRO_SES Distribution; NRO_Branch_Chiefs
Subject: FYI: Fukushima Status Report from Japan Atomic Industrial Forum...

Courtesy of <http://ansnuclearcafe.org/> (providing twice daily news updates).

Link to attached file: http://www.jaif.or.jp/english/news_images/pdf/ENGNEWS01_1300189582P.pdf

Thought this might be of interest as it seems to provide a good one page snapshot from what is presumably a reasonably well-informed source.

Bob

Robert G. Schaaf, Chief
Siting and Accident Consequences Branch
Division of Site and Environmental Reviews
Office of New Reactors

Mail Stop T-7F27

Office: T-7E53

301-415-6020 (o)

(b)(6) (c)

	Not Damaged	Damage Suspected	Not Damaged	Not Damaged	Not Damaged	Not Damaged
Power	Not Functional	Not Functional	Not Functional	Not necessary	Not necessary	Not necessary
	Not Functional	Not Functional	Not Functional	Not necessary	Not necessary	Not necessary
	Severely Damaged	Slightly Damaged	Severely Damaged	Partially Damaged	Not Damaged	Not Damaged
Pressure	Around half of the normal	Recovered after Dried up	Around half of the Fuel	Safe	Safe	Safe
	Stable	Fluctuating	Stable	Safe	Safe	Safe
	Stable	D/W: Unknown, S/P: Atmosphere	Stable	Safe	Safe	Safe
Spent Fuel	Continuing	Continuing	Continuing	Not necessary	Not necessary	Not necessary
	Continuing	to be decided	to be decided	Not necessary	Not necessary	Not necessary
	Continuing	Preparing	Continuing	Not necessary	Not necessary	Not necessary
	(No info)	(No info)	(No info)	SFP level low, Injecting Water	SFP Temp. Increasing	SFP Temp.

NPS border: 489.8 μ Sv/h at 16:30, Mar. 15

20km from NPS

* People who live between 20km to 30km from the Fukushima #1NPS are to stay indoors.

Level 4 (estimated by NISA)

A fire broke on the 4th floor of the Unit-4 Reactor Building around 6AM, Mar. 15, and the radiation monitor readings increased outside of the building: 30mSv between Unit-2 and Unit-3, 400mSv beside Unit-3, 100mSv beside Unit-4 at 10:22, Mar. 15. It is estimated that spent fuels stored in the spent fuel pit heated and hydrogen was generated from these fuels, resulting in explosion. TEPCO later announced the fire had been extinguished. Other staff and workers than fifty TEPCO employees who are engaged in water injection operation have been evacuated.

Fukushima #2 Nuclear Power Station				
	1	2	3	4
(MWe)	1100 / 3293			
Reactor	BWR-5	BWR-5	BWR-5	BWR-5
Mode	Service	Service	Service	Service
Damage	Not Damaged	Not Damaged	Not Damaged	Not Damaged
	Not Damaged	Not Damaged	Not Damaged	Not Damaged
Power	Functioning	Functioning	Functioning	Functioning
	Not necessary	Not necessary	Not necessary	Not necessary
	Not Damaged	Not Damaged	Not Damaged	Not Damaged
Pressure	(No info)	(No info)	(No info)	(No info)
	(No info)	(No info)	(No info)	(No info)
	(No info)	(No info)	(No info)	(No info)
Spent Fuel	Not necessary	Not necessary	Not necessary	Not necessary
	Not necessary	Not necessary	Not necessary	Not necessary
	Not necessary	Not necessary	Not necessary	Not necessary
	NPS border: 13.7 μ Sv/h at 12:00, Mar. 15			
	10km from NPS			
	(No Info)			
	(No Info)			
	All the units are in cold shutdown.			

[Significance]

From: Schaaf, Robert
Sent: Wednesday, March 23, 2011 12:44 PM
To: Harvey, Brad
Cc: Short, Amanda; Dent, Kimberly; Lauron, Carolyn; Sweeney, Beverly; Braden, Michael; Brown, David; Dickson, Elijah; Hart, Michelle; Mazaika, Michael; Quinlan, Kevin; Sisk, David; Tammara, Seshagiri
Subject: RE: WAIVER OF WORK SCHEDULE AND PAY CAP RULES FOR WORK IN RESPONSE TO THE EVENTS IN JAPAN

Brad,

Good question. I would think there would be some sort of exception for op center shift coverage; but will see what I can run-down.

Bob

From: Harvey, Brad
Sent: Wednesday, March 23, 2011 11:41 AM
To: Schaaf, Robert
Cc: Short, Amanda; Dent, Kimberly; Lauron, Carolyn; Sweeney, Beverly; Braden, Michael; Brown, David; Dickson, Elijah; Hart, Michelle; Mazaika, Michael; Quinlan, Kevin; Sisk, David; Tammara, Seshagiri
Subject: RE: WAIVER OF WORK SCHEDULE AND PAY CAP RULES FOR WORK IN RESPONSE TO THE EVENTS IN JAPAN

Bob:

HR's webpage on the summary of work schedule options states that

An employee whose schedule includes more than six hours of work on a day must take a minimum 45 minute unpaid meal break or rest period after working no more than six continuous hours. Employees may not take this meal/rest break at the beginning or end of the workday to shorten the workday.

Are employees working 8-hour shifts in the HOC exempt from this meal/rest break requirement? Another words, are we only going to be paid for 7.25 hrs when working an HOC 8-hr shift?

Thanks.

Brad
415-4118

<http://www.internal.nrc.gov/HR/work-schedule.html>

From: Schaaf, Robert
Sent: Thursday, March 17, 2011 2:46 PM
To: Braden, Michael; Brown, David; Dickson, Elijah; Hart, Michelle; Harvey, Brad; Mazaika, Michael; Quinlan, Kevin; Sisk, David; Tammara, Seshagiri
Cc: Short, Amanda; Dent, Kimberly; Lauron, Carolyn; Sweeney, Beverly
Subject: FYI: WAIVER OF WORK SCHEDULE AND PAY CAP RULES FOR WORK IN RESPONSE TO THE EVENTS IN JAPAN
Importance: High

FYI, see attached regarding HR waiver of schedule and pay rules for staff assisting with Japan event response. Flexibilities provided include (see attached memo for details):

- a waiver of limitations on permissible workdays and working clock hours:

-
-
-

(b)(5)

- a waiver of the biweekly pay cap and adoption of an annual cap.

At this time I believe this principally applies for David, Michelle, Kevin, and possibly Brad upon his return. I know others of you have also been providing information and may in time be drawn in to provide additional support. Please see me if I did not mention you and you believe you are also in need of the provided flexibilities. Otherwise, we'll add you to the list as the need arises.

Thanks,
Bob

Chief, NRO/DSER/RSAC

301-415-6020 (o)

(b)(6) (c)

Room T7E53

From: Lauron, Carolyn

Sent: Thursday, March 17, 2011 12:58 PM

To: NRO DSER Branch Chiefs

Cc: Muir, Jessie; Kugler, Andrew

Subject: FYI: WAIVER OF WORK SCHEDULE AND PAY CAP RULES FOR WORK IN RESPONSE TO THE EVENTS IN JAPAN

Please share with Staff as needed.

From: RidsNroMailCenter Resource

Sent: Thursday, March 17, 2011 12:12 PM

To: NRO_TA

Cc: NRO_Deputy Division_Directors; Correa, Yessie; Coates, Anissa; Anderson, Patricia; Lo, Eileen

Subject: FW: WAIVER OF WORK SCHEDULE AND PAY CAP RULES FOR WORK IN RESPONSE TO THE EVENTS IN JAPAN

Important Information Please read attached. Distribute to interested staff.

(b)(5)

NRO Correspondence Team

From: Khan, Charline

Sent: Thursday, March 17, 2011 7:29 AM

To: RidsAcraAcnw_MailCTR Resource; RidsAsibpManagement Resource; RidsOgcMailCenter Resource; RidsOcaaMailCenter Resource; RidsOcofoMailCenter Resource; RidsOigMailCenter Resource; RidsOipMailCenter Resource; RidsOcaMailCenter Resource; RidsOpaMail Resource; RidsSecyMailCenter Resource; RidsSecyCorrespondenceMCTR

Resource; RidsEdoMailCenter Resource; RidsAdmMailCenter Resource; RidsCsoMailCenter Resource; RidsOeMailCenter Resource; RidsFsmeOd Resource; RidsOiMailCenter Resource; RidsOIS Resource; RidsHrMailCenter Resource; RidsNroOd Resource; RidsNroMailCenter Resource; RidsNmssOd Resource; RidsNrrOd Resource; RidsNrrMailCenter Resource; RidsResOd Resource; RidsResPmdaMail Resource; RidsSbcrMailCenter Resource; RidsNsirOd Resource; RidsNsirMailCenter Resource; RidsRgn1MailCenter Resource; RidsRgn2MailCenter Resource; RidsRgn3MailCenter Resource; RidsRgn4MailCenter Resource

Cc: Davidson, Lawrence; Buchholz, Jeri; Johns, Nancy

Subject: WAIVER OF WORK SCHEDULE AND PAY CAP RULES FOR WORK IN RESPONSE TO THE EVENTS IN JAPAN

MEMORANDUM TO: Those on the Attached List

FROM: Miriam L. Cohen, Director/**RA** by **J. Buchholz for/**
Office of Human Resources

DATED: March 16, 2011

SUBJECT: WAIVER OF WORK SCHEDULE AND PAY CAP RULES FOR WORK IN RESPONSE TO THE EVENTS IN JAPAN

ADAMS Accession No. ML11075A003 refers

NOTE: Electronic distribution only

Charline Khan
Administrative Assistant (Rotation)
U.S. NUCLEAR REGULATORY COMMISSION
Office of Human Resources
P:301-492-2318
Charline.Khan@nrc.gov

March 16, 2011

MEMORANDUM TO: Those on the Attached List

FROM: Miriam L. Cohen, Director/RA by J. Buchholz for/
Office of Human Resources

SUBJECT: WAIVER OF WORK SCHEDULE AND PAY CAP RULES FOR
WORK IN RESPONSE TO THE EVENTS IN JAPAN

I have approved a waiver of the U.S. Nuclear Regulatory Commission (NRC) work schedule rules, as well as a waiver of the biweekly cap on combined salary plus premium pay, for NRC employees serving in and supporting the NRC Operations Center, as well as NRC employees working in Japan, in response to the current, serious nuclear power plant issues in that country.

Work Schedule Limitations

NRC permits a variety of types of work schedules, including 5-4/9 compressed work schedules (CWS) and NEWFlex flexible work schedules that include limitations on permissible workdays and working clock hours. Other types of work schedules, including Expanded-Compressed work schedules (E-CWS) in emergency situations, and First-40 work schedules in unusual situations, do not contain such limitations. A summary of work schedule options may be found on the intranet at <http://www.internal.nrc.gov/HR/work-schedule.html>.

I have approved a waiver of limitations on permissible workdays and working clock hours for NRC employees working in response to these events. As a result, employees on 5-4/9 CWS may work weekends, employees on NEWFlex may work Sundays, and employees on both types of work schedules may work any clock hours, as appropriate (an exception to the 11.25 hour maximum limitation on NEWFlex workdays is not possible).

Biweekly Cap

As a matter of Federal-wide law and regulations, employees who are exempt from the Fair Labor Standards Act (most NRC employees are exempt) normally are subject to a biweekly cap on combined salary plus premium pay. This year, the cap is equal to the salary for GG-15 step 10. Premium pay includes the following categories: night premium pay, Sunday premium pay, holiday premium pay, overtime premium pay, and "regular" compensatory time off (not religious compensatory time off or Special Compensatory Time Off for Travel).

For further details, please see the February 3, 2011, NRC Announcement entitled "Employee Resources: 2011 Cap on Combined Salary Plus Premium Pay," available on the intranet at <http://www.internal.nrc.gov/announcements/items/7625.html>.

Annual Cap

Federal law and regulations permit agencies to waive the biweekly cap and to adopt an annual cap on combined salary plus premium pay when, among other reasons, an employee receives premium pay for work directly related to resolving or coping with an emergency (or its immediate aftermath) that involves a direct threat to life or property.

I have approved a waiver of the biweekly cap and adoption of an annual cap for NRC employees working in response to these events.

Procedures

Note that employees who are responding to these events will be provided a document summarizing their work schedule options as well as their entitlements to premium pay.

Employees should consult with their time and attendance officials about any necessary changes to their Human Resources Management System workgroups.

Management should advise Jackie Jones, Financial Services Branch, Office of the Chief Financial Officer, of the names of employees who perform emergency-related premium work as well as the dates of such work. Please submit this information to Ms. Jones via a memorandum mailed to T-9 E2, or via e-mail to Jackie.Jones@nrc.gov. It is important to provide Ms. Jones this information as soon as practicable after the work begins to avoid difficulties processing the appropriate payments as the annual cap will be made effective at the beginning of the pay period in which the work was performed.

Should you have any questions on this matter, please contact me or have a member of your staff contact Larry Davidson at (301) 492-2286 or Lawrence.davidson@nrc.gov.

MEMORANDUM TO THOSE ON THE ATTACHED LIST DATED: March 16, 2011

SUBJECT: WAIVER OF WORK SCHEDULE AND PAY CAP RULES FOR WORK
IN RESPONSE TO THE EVENTS IN JAPAN

Edwin M. Hackett, Executive Director, Advisory Committee on Reactor Safeguards	RidsAcrsAcnw_MailCTR Resource
E. Roy Hawkens, Chief Administrative Judge, Atomic Safety and Licensing Board Panel	RidsAslbpManagement Resource
Stephen G. Burns, General Counsel	RidsOgcMailCenter Resource
Brooke D. Poole, Director, Office of Commission Appellate Adjudication	RidsOcaaMailCenter Resource
James E. Dyer, Chief Financial Officer	RidsOcfoMailCenter Resource
Hubert T. Bell, Inspector General	RidsOigMailCenter Resource
Margaret M. Doane, Director, Office of International Programs	RidsOipMailCenter Resource
Rebecca L. Schmidt, Director, Office of Congressional Affairs	RidsOcaMailCenter Resource
Eliot B. Brenner, Director, Office of Public Affairs	RidsOpaMail Resource
Annette Vietti-Cook, Secretary of the Commission	RidsSecyMailCenter Resource RidsSecyCorrespondenceMCTR Resource
R. William Borchardt, Executive Director for Operations	RidsEdoMailCenter Resource
Michael F. Weber, Deputy Executive Director for Materials, Waste, Research, State, Tribal, and Compliance Programs, OEDO	RidsEdoMailCenter Resource
Darren B. Ash, Deputy Executive Director for Corporate Management, OEDO	RidsEdoMailCenter Resource
Martin J. Virgilio, Deputy Executive Director for Reactor and Preparedness Programs, OEDO	RidsEdoMailCenter Resource
Mary C. Muessle, Acting Assistant for Operations, OEDO	RidsEdoMailCenter Resource
Kathryn O. Greene, Director, Office of Administration	RidsAdmMailCenter Resource
Patrick D. Howard, Director, Computer Security Office	RidsCsoMailCenter Resource
Roy P. Zimmerman, Director, Office of Enforcement	RidsOeMailCenter Resource
Charles L. Miller, Director, Office of Federal and State Materials and Environmental Management Programs	RidsFsmeOd Resource
Cheryl L. McCrary, Director, Office of Investigations	RidsOiMailCenter Resource
Thomas M. Boyce, Director, Office of Information Services	RidsOis Resource
Miriam L. Cohen, Director, Office of Human Resources	RidsHRMailCenter Resource
Michael R. Johnson, Director, Office of New Reactors	RidsNroOd Resource RidsNroMailCenter Resource RidsNmssOd Resource
Catherine Haney, Director, Office of Nuclear Material Safety and Safeguards	
Eric J. Leeds, Director, Office of Nuclear Reactor Regulation	RidsNrrOd Resource RidsNrrMailCenter Resource
Brian W. Sheron, Director, Office of Nuclear Regulatory Research	RidsResOd Resource RidsResPmdaMail Resource
Corenthis B. Kelley, Director, Office of Small Business and Civil Rights	RidsSbcrMailCenter Resource
James T. Wiggins, Director, Office of Nuclear Security and Incident Response	RidsNsirOd Resource RidsNsirMailCenter Resource
William M. Dean, Regional Administrator, Region I	RidsRgn1MailCenter Resource
Victor M. McCree, Regional Administrator, Region II	RidsRgn2MailCenter Resource
Mark A. Satorius, Regional Administrator, Region III	RidsRgn3MailCenter Resource
Elmo E. Collins, Jr., Regional Administrator, Region IV	RidsRgn4MailCenter Resource

Annual Cap

Federal law and regulations permit agencies to waive the biweekly cap and to adopt an annual cap on combined salary plus premium pay when, among other reasons, an employee receives premium pay for work directly related to resolving or coping with an emergency (or its immediate aftermath) that involves a direct threat to life or property.

I have approved a waiver of the biweekly cap and adoption of an annual cap for NRC employees working in response to these events.

Procedures

Note that employees who are responding to these events will be provided a document summarizing their work schedule options as well as their entitlements to premium pay.

Employees should consult with their time and attendance officials about any necessary changes to their Human Resources Management System workgroups.

Management should advise Jackie Jones, Financial Services Branch, Office of the Chief Financial Officer, of the names of employees who perform emergency-related premium work as well as the dates of such work. Please submit this information to Ms. Jones via a memorandum mailed to T-9 E2, or via e-mail to Jackie.Jones@nrc.gov. It is important to provide Ms. Jones this information as soon as practicable after the work begins to avoid difficulties processing the appropriate payments as the annual cap will be made effective at the beginning of the pay period in which the work was performed.

Should you have any questions on this matter, please contact me or have a member of your staff contact Larry Davidson at (301) 492-2286 or Lawrence.davidson@nrc.gov.

DISTRIBUTION:

HR r/f

DIRECTORY/SUBDIRECTORY: G:\HRPP\PAY

DOCUMENT NAME: Waiver of Biweekly Cap for Japan Response.docx

WITS/EDO/HR TICKET NO. :

SUBJECT FILE FOLDER NAME:

ADAMS ACCESSION NUMBER: ML11075A003

Publicly Available Non-Publicly Available Sensitive Non-Sensitive

OFFICE	HR/HRPP	HR/HRPP	HR/HROP	HR/ODD	HR/OD
NAME	LDavidson	NJohns LDavidson for	JBuchholz	GTracy JBuchholz for	MCohen JBuchholz for
DATE	3/16/2011	3/16/2011	3/16/2011	3/16/2011	3/16/2011

OFFICIAL RECORD COPY

From: Clayton, Brent
Sent: Friday, April 01, 2011 4:00 PM
To: Hood, Tanya
Cc: Lauron, Carolyn; Schaaf, Robert; Hatchett, Gregory; Dent, Kimberly; Brown, David; Hart, Michelle; Berry, Lee
Subject: FW: ACTION YT-2011-0058 DCIP, DSER: Request for Concurrence RG 1.179 "Standard Format and Content of License Termination Plans for Nuclear Power Plant Reactors"
Attachments: 5. Redline-strikeout.comarison. ML1104904610.doc; 1. Routing and Transmittal Slip.pdf; 2. Request for concurrence. ML1104904390.doc; 3. RG 1.179. rev 1. ML1104904190.doc; 4. Regulatory Analysis. ML1104904250.doc
Importance: High

DSER concurs on the draft Reg Guide with the following comments. We have one additional staff person (Michelle Hart) who has been working in the Operations Center and has not had an opportunity to review the draft. If she has an opportunity to review it and wishes to provide additional comments, we will provide them to you on Monday.

1.

2.

(b)(5)

3.

--Brent

From: Lauron, Carolyn
Sent: Monday, March 28, 2011 1:37 PM
To: Clayton, Brent; Schaaf, Robert
Cc: Hatchett, Gregory; Griggs, Alicia; Dent, Kimberly
Subject: ACTION YT-2011-0058 DCIP, DSER: Request for Concurrence RG 1.179 "Standard Format and Content of License Termination Plans for Nuclear Power Plant Reactors"
Importance: High

Hi –

This is the YT that they requested we review.

Alicia – please add this to the tracking system. DSER Due date: 04/01/11, NRO Due date: 04/04/11. Assign to DSER/Lauron

Thanks,
Carolyn
2736

From: Berry, Lee
Sent: Monday, March 28, 2011 12:30 PM
To: Lockhart, Denise; Dent, Kimberly
Cc: Rivera-Varona, Aida; Cheney, Valentina; Lauron, Carolyn; Correa, Yessie; Coates, Anissa; RidsNroMailCenter Resource; Hood, Tanya; Montgomery, Shandeth; McGovern, Denise; Shams, Mohamed
Subject: ACTION YT-2011-0058 DCIP, DSER: Request for Concurrence RG 1.179 "Standard Format and Content of License Termination Plans for Nuclear Power Plant Reactors"
Importance: High

YT-2011-0058 reassigned from DE to DCIP and DSER. Provide concurrence or concurrence w/comment to Tanya Hood, DNRL, by April 4, 2011.

Thanks,

Lee Berry

Management Analyst
Office of New Reactors
415-1487
T 06 D-15
lee.berry@nrc.gov

From: RidsNroMailCenter Resource
Sent: Wednesday, March 23, 2011 11:31 AM
To: Montgomery, Shandeth
Cc: McGovern, Denise; Shams, Mohamed; Correa, Yessie; Berry, Lee; Hood, Tanya
Subject: ACTION (DE): YT-2011-0058 - Request for Concurrence RG 1.179 "Standard Format and Content of License Termination Plans for Nuclear Power Plant Reactors"
Importance: High

YT-2011-0058

Click link below to view assigned action. Please also see e-mail and attachments for further details and/or instructions regarding this action.

*Thank you,
NRO Correspondence Team*

Amiisa

<http://epm.nrc.gov/PMDA/Lists/Ticket%20Tracker/DispForm.aspx?ID=3486&Source=http%3A%2F%2Fepm%2Enrc%2Egov%2F%2FPMDA%2FLists%2FTicket%2520Tracker%2FYellow%2520Tickets%2Easpx>

From: Hood, Tanya

Sent: Wednesday, March 23, 2011 10:34 AM

To: RidsNroMailCenter Resource

Subject: FW: Request for Concurrence RG 1.179 "Standard Format and Content of License Termination Plans for Nuclear Power Plant Reactors"

Good Morning,

Please assign a yellow ticket for ~~DE~~ DCIP and DSER to complete the following request.

Attached is a request for concurrence on a revision of RG 1.179 "Standard Format and Content of License Termination Plans for Nuclear Power Plants." James Shepherd, FSMS is the technical lead. It was sent out for public comments and none were received.

We are requesting concurrence or concurrence with comments by April 4th.

Thanking you in advance.

Tanya

Attached

1. Routing & transmittal slip
2. Request for concurrence
3. RG 1.179 Rev 1
4. Regulatory analysis
5. Redline-strikout comparison showing changes since 1999

ROUTING AND TRANSMITTAL SLIP			2/18/2011		
TO:	NAME	ACTION REQUESTED	COMMENTS	INITIALS	DATE
	Jennifer Borges	Concur		<i>JDB</i>	2/18/11
PM	Edward O'Donnell	Concur		<i>EO</i>	2/18/11
BC	Thomas Boyce	Concur/SUNSI Review		<i>TB</i>	2/18/11
DD	Michael Case	Concur/Sign Memo		<i>MC</i>	2/18/11
OFFICE	RES	<input type="checkbox"/>			
DD	N/A	Concur			
OFFICE	FSME	<input checked="" type="checkbox"/>	<i>Concurrence requested by April 5, 2011</i>		
LIAISON	Harry Felsher, DWMEP	Distribution			
DD	Larry Camper, DWMEP	Concur			
OFFICE	NMSS	<input type="checkbox"/>			
LIAISON	Liaison	Distribution			
DD	N/A	Concur			
OFFICE	NRO	<input checked="" type="checkbox"/>	<i>Concurrence requested by April 5, 2011</i>		
LIAISON	Tanya Simms, DNRL	Distribution			
BC	Thomas Bergman, DE	Concur			
OFFICE	NRR	<input checked="" type="checkbox"/>			
LIAISON	Holly Cruz, DPR	Distribution			
DD	Patrick Hiland, DE	Concur			
OFFICE	NSIR	<input type="checkbox"/>			
LIAISON	Liaison	Distribution			
DD	N/A	Concur			
OFFICE	OGC	<input checked="" type="checkbox"/>			
AGC	Edward Williamson, OGC	No Legal Objection (NLO)			

SUBJECT:	Request for Concurrence on Revision 1 of Regulatory Guide 1.179, "Standard Format and Content of License Termination Plans for Nuclear Power Plant Reactors."		
REMARKS:	Draft was issued as DG-1228, dated August 2010		
FROM:	Edward O'Donnell	Room No.:	2A22
		Phone No.:	301-251-7455

MEMORANDUM TO: Thomas A. Bergman, Director
Division of Engineering
Office of New Reactors

Larry W. Camper, Director
Division of Waste Management and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

Patrick L. Hiland, Director
Division of Engineering
Office of Nuclear Reactor Regulation

Edward L. Williamson, Assistant General Counsel
for Operating Reactors
Office of the General Counsel

FROM: Michael J. Case
Division of Engineering
Office of Nuclear Regulatory Research

SUBJECT: REQUEST FOR CONCURRENCE ON REVISION 1 OF REGULATORY
GUIDE 1.179

I am forwarding for your concurrence (or concurrence with comments) a revision of Regulatory Guide 1.179, "Standard Format and Content of License Termination Plans for Nuclear Power Plant Reactors." It deals with general procedures for the preparation of license termination plans for nuclear power reactors and is an update of the January 1999 version of the guide. The enclosed version was issued for public comment as DG-1228 and no comments were received. Enclosed with this memorandum are a clean copy of the guide with which you had previously concurred along with a redline/strikeout version which shows the proposed changes.

Following office concurrence and review by the Advisory Committee on Reactor Safeguards and the Office of the General Counsel, the agency will publish a notice in the *Federal Register* announcing the issuance and availability of Regulatory Guide 1.179.

CONTACT: James C. Shepherd, FSME
301-415-6712

Edward O'Donnell, RES/DE
301-251-7455

T. Bergman, et al.

- 2 -

Should questions or issues arise during the concurrence review period, please contact either of the staff listed below as early as possible to address them in a timely manner.

Enclosures:

1. Regulatory Guide 1.179 clean version
2. Regulatory Analysis
3. Redline/strikeout version showing changes

Should questions or issues arise during the concurrence review period, please contact either of the staff listed below as early as possible to address them in a timely manner.

Enclosures:

1. Regulatory Guide 1.179 clean version
2. Regulatory Analysis
3. Redline/strikeout version showing changes

DISTRIBUTION:

DE r/f

ADAMS Accession No.: ML110490395

OFFICE	RES/DE	RES/DE	RES/DE	SUNSI Review	RES/DE	NRO
NAME	J. Borges	E. O'Donnell	T. Boyce	T. Boyce	M. Case	T. Bergman
DATE	/ /11	/ /11	/ /11	/ /11	/ /11	/ /11
OFFICE	FSME	NRR	OGC (NLO)	QTE		
NAME	L. Camper	P. Hiland	E. Williamson	via e-mail		
DATE	/ /11	/ /11	/ /11	03/09/10		

OFFICIAL RECORD COPY

From: Gibson, Kathy
Sent: Friday, April 01, 2011 7:22 PM
To: PMT09 Hoc
Subject: Re: ACTION: DRAFT PMT request to RES-RST

Thanks Steve, I appreciate the update.

From: PMT09 Hoc
To: Gibson, Kathy
Cc: Hoc, PMT12
Sent: Fri Apr 01 19:13:06 2011
Subject: RE: ACTION: DRAFT PMT request to RES-RST

Kathy

The MELCOR source term was received and sent to DOE NITOPS and NARAC on March 31, 2011 at 10:12 pm. (NARAC takes direction from NITOPS)

PMT discussed the status of this calculation with DOE at about 5 pm tonight and we learned that the White House had not yet directed that the run be made.

Steve LaVie
Radiological Assessment Assistant Director
Protective Measures Team
U.S. Nuclear Regulatory Commission

From: Hoc, PMT12
Sent: Friday, April 01, 2011 1:51 PM
To: PMT09 Hoc
Subject: FW: ACTION: DRAFT PMT request to RES-RST

From: Gibson, Kathy
Sent: Friday, April 01, 2011 1:50 PM
To: RST01 Hoc; RST07 Hoc; PMT01 Hoc; Hoc, PMT12
Cc: Tinkler, Charles; Schaperow, Jason; Lee, Richard
Subject: Re: ACTION: DRAFT PMT request to RES-RST

Please verify that this source term was received. Also was it sent to NARAC or actually used for any dose projections by PMT or NARAC? We would be interested in the results. Thanks.

From: Schaperow, Jason
To: RST01 Hoc; RST07 Hoc; RST08 Hoc; PMT01 Hoc; Hoc, PMT12
Cc: Tinkler, Charles; Uhle, Jennifer; Gibson, Kathy; Sheron, Brian
Sent: Thu Mar 31 15:37:59 2011
Subject: RE: ACTION: DRAFT PMT request to RES-RST

The attached information is provided by RES in response to a PMT request of 3/30/11 to provide a realistic, up-to-date estimation of source terms for dose projections to address future potential radiological releases from the Fukushima Unit 1 reactor and the Unit 4 spent fuel pool.

From: Tinkler, Charles
Sent: Wednesday, March 30, 2011 10:10 AM
To: Schaperow, Jason
Subject: FW: ACTION: DRAFT PMT request to RES-RST
Importance: High

From: PMT01 Hoc
Sent: Wednesday, March 30, 2011 9:39 AM
To: Esmaili, Hossein; Tinkler, Charles; Lee Col
Cc: Lee, Richard; Hoc, PMT12; PMT01 Hoc; PMT11 Hoc; PMT02 Hoc
Subject: ACTION: DRAFT PMT request to RES-RST
Importance: High

Attached for your comment.
Request input ASAP.

Contacts:
Tony Huffert
Rich Clement
PMT – NRC Ops Center

(b)(6)

***** DRAFT 09:30 / 3-30-2011 DRAFT *****

**PMT REQUEST TO RST TO PROVIDE A REALISTIC, UP-TO-DATE ESTIMATION
OF PLANT CONDITIONS AND SOURCE TERMS FOR DOSE PROJECTIONS**

"Pessimistic Source Term for US Embassy in Tokyo"

(b)(5)

***** DRAFT 09:30 / 3-30-2011 DRAFT *****

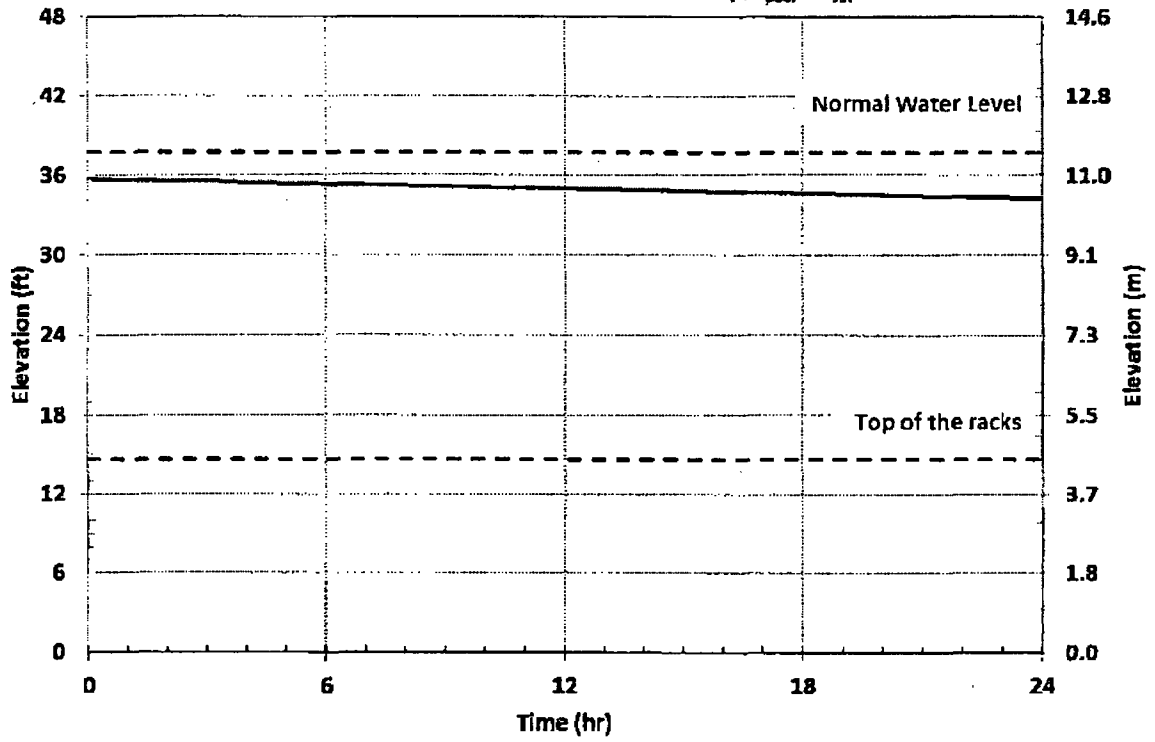
(b)(5)

Charles Tinkler
Jason Schaperow
March 31, 2011

Detailed radiological release for Fukushima Unit 1 reactor.

isotope	release fraction	release duration (hours)	release corrected for decay (Ci)
Ba140	0.016	0.5	1.77E+05
Ce144	0.001	0.5	3.55E+04
Cs134	0.018	24	1.00E+05
Cs136	0.018	24	3.89E+03
Cs137	0.018	24	6.62E+04
I131	0.011	0.5	2.08E+04
I132	0.011	0.5	2.15E-105
I133	0.011	0.5	6.11E-07
I134	0.011	0.5	9.28E-283
I135	0.011	0.5	3.01E-33
Kr85	0.3	0.5	1.30E+05
Kr85m	0.3	0.5	9.79E-51
Kr87	0.3	0.5	1.71E-193
Kr88	0.3	0.5	5.64E-83
La140	0.00005	24	1.93E-03
Mo99	0.004	24	4.39E+01
Np239	0.001	0.5	2.49E+01
Ru103	6E-06	0.5	1.65E+02
Ru106	6E-06	0.5	1.03E+02
Sb127	0.0072	0.5	3.34E+01
Sb129	0.0072	0.5	2.73E-53
Sr89	0.016	0.5	4.23E+05
Sr90	0.016	0.5	4.41E+04
Sr91	0.016	0.5	2.39E-21
Te129m	0.0072	0.5	8.66E+03
Te131m	0.0072	0.5	1.49E-04
Te132	0.0072	0.5	2.29E+02
Xe131m	0.3	0.5	1.68E+04
Xe133	0.3	0.5	2.33E+05
Xe133m	0.3	0.5	2.33E+01
Xe135	0.3	0.5	6.70E-22
Xe138	0.3	0.5	0.00E+00
Y91	0.00005	24	1.82E+03

1F4 SFP Boil-off Calculation
Water Level
Initial Conditions: Level = -2-ft from top, $T_{pool} = T_{sat}$



From: Hart, Michelle
Sent: Monday, April 04, 2011 10:31 AM
To: Schaaf, Robert
Cc: Carolyn Lauron
Subject: additional Ops Center shift

I agreed to work an additional ops center shift for this pay period. I'll be in the ops center this coming Saturday (4/9) from 3-11pm. This is in addition to the M, W, and F shifts from 3-11 pm. I haven't signed up for next week yet. I'll do that today and let you know.

Michelle

From: Hoc, PMT12
Sent: Thursday, April 14, 2011 2:19 PM
To: Hart, Michelle
Subject: FW: Japan source term information
Attachments: NISA_SourceTerm_en20110412 4.pdf

From: Nasstrom, John S. [mailto:Nasstrom1@lnl.gov]
Sent: Thursday, April 14, 2011 2:15 PM
To: Hoc, PMT12; HOO Hoc; Watson, Bruce
Cc: 'narac'
Subject: Japan source term information

Attention PMT:

Attached is the Japan press release with their source term estimates for Fukushima.

As I discussed with Bruce Watson and Michelle Hart on the phone today, DOE asked us to contact you to see if you could provide any assistance with the following:

- Information the NRC Japan team may have on the basis and details of Japan's source term estimates (including any assumed release times)
- Contacts in NRC (RST, PMT, Japan) that may have information that may help in refined estimates of Fukushima source terms.

Thank you looking into this, and for the invaluable assistance you have already provided for this event.

Sincerely,
John Nasstrom

NARAC Operations

(b)(6)

April 12, 2011

INES (the International Nuclear and Radiological Event Scale) Rating on
the Events in Fukushima Dai-ichi Nuclear Power Station
by the Tohoku District - off the Pacific Ocean Earthquake

The Rating of the International Nuclear and Radiological Event Scale (INES) on the events in Fukushima Dai-ichi Nuclear Power Station (NPS), Tokyo Electric Power Co. Inc. (TEPCO), caused by the Tohoku District - off the Pacific Ocean Earthquake is temporarily assessed as Level 7, considering information obtained after March 18th.

However, the amount of discharged radioactive materials is approximately 10 percent of the Chernobyl accident which was assessed on the same level.

1. INES

INES is the rating, which International Atomic Energy Agency (IAEA) and Nuclear Energy Agency, Organization for Economic Cooperation and Development (OECD/NEA) established and proposed to the Member States in March 1992, in order to indicate the impact on safety by the individual event in a nuclear facility and so on. Japan has also utilized it since 1 August 1992.

2. Events in Fukushima Dai-ichi NPS, TEPCO, by the Tohoku District - off the Pacific Ocean Earthquake

On 18 March, the ratings of the events in Fukushima Dai-ichi NPS by the Tohoku District - off the Pacific Ocean Earthquake were informed to be temporarily assessed as Level 5, considering information obtained before March 18th. However, Nuclear and Industrial Safety Agency (NISA) estimated the total amount of discharged radioactive materials from the reactors of Fukushima Dai-ichi NPS to the air, making a trial

calculation using the result of analysis of the situation of the reactors and so on, which was carried out by Japan Nuclear Energy Safety Organization (JNES). This estimation resulted in the value corresponding to Level 7 of INES rating*, as listed in the following table..

* The value representing radiation impact, which is converted to the amount equivalent to ¹³¹I (Iodine), exceeds several tens of thousands of tera-beccquerel (of the order of magnitude as 10¹⁶ Bq).

In addition, Nuclear Safety Commission of Japan (NSC) also estimated and announced the result of the trial calculation in the current stage regarding the total amount of discharged radioactive materials to the air, which had been being carried out in the Commission. This trial calculation is counted backward from the results of monitoring data of ¹³¹I and ¹³⁷Cs (Caesium) as the total amount of the discharge from the Fukushima Dai-ichi NPS, This results in the value corresponding to Level 7 of INES rating as well.

	Assumed amount of the discharge from Fukushima Dai-ichi NPS		(Reference) Amount of the discharge from the Chernobyl accident
	Estimated by NISA	Announced by NSC	
¹³¹ I ... (a)	1.3×10 ¹⁷ Bq	1.5×10 ¹⁷ Bq	1.8×10 ¹⁸ Bq
¹³⁷ Cs	6.1×10 ¹⁵ Bq	1.2×10 ¹⁶ Bq	8.5×10 ¹⁶ Bq
(Converted value to ¹³¹ I) ... (b)	2.4×10 ¹⁷ Bq	4.8×10 ¹⁷ Bq	3.4×10 ¹⁸ Bq
(a) + (b)	3.7×10 ¹⁷ Bq	6.3×10 ¹⁷ Bq	5.2×10 ¹⁸ Bq

(Notes) The conversion of the values to be equivalent to radiation impact of ¹³¹I regarding the NISA's estimation and the NSC's

announcement were carried out by NISA in accordance with the INES User's Manual.

Although Level 7 is the highest level of INES rating, it is estimated that the amount of discharged radioactive materials to the environment in the current stage is approximately 10 percent of the Chernobyl accident, which was assessed on the same level in the past.

3. Procedures to be taken

This information is about the result of the total amount of the discharge from Fukushima Dai-ichi NPS in the current stage. As radioactive materials are being released to the environment, NISA will continuously gather and evaluate information.

In addition, the official level of INES will be determined, considering the technical evaluation from specialist view points made by INES Evaluation Subcommittee (Chairman: Dr. Naoto Sekimura, Professor of University of Tokyo, Nuclear Professional School Engineering, Department of Nuclear Engineering and Management), which set up in the Nuclear and Industrial Safety Subcommittee of the Advisory Committee for Natural Resources and Energy, after the recurrence prevention measures are confirmed based on the concrete causes found.

(Contact Person)

Mr. Toshihiro Bannai

Director, International Affairs Office,
NISA/METI

Phone: +81-(0)3-3501-1087

From: Salus, Amy
Sent: Thursday, April 14, 2011 2:24 PM
To: Temps, Robert; Ahn, Tae; Arndt, Steven; Barrett, Harold; Boska, John; Brown, David; Bucholtz, Kristy; Buckley, John; Caballero, Bruno; Cahill, Christopher; Cameron, James; Circle, Jeff; DAbate, David; Drozd, Andrzej; Dube, Donald; Erb, Delson; Essig, Thomas; Faraz, Yawar; Fuller, Edward; Garry, Steven; Hamzehee, Hossein; Hardies, Robert; Hart, Michelle; Hinson, Charles; Jenkins, Ronaldo; Jolicoeur, John; Kammerer, Annie; Karas, Rebecca; Kelly, Glenn; Lane, John; Lee, Richard; Lynch, James; McGhee, James; McHugh, James; McKinley, Raymond; Mendiola, Anthony; Miller, Mark; Mitchell, Matthew; Munday, Joe; Murphy, Martin; Nimitz, Ronald; Noggle, James; Norton, Charles; Orth, Steven; Parillo, John; Reichard, Michael; Ring, Mark; Roach, Edward; Rubin, Stuart; Salley, MarkHenry; Schaperow, Jason; Schlapper, Gerald; Schmidt, Wayne; Shams, Mohamed; Spitzberg, Blair; Watson, Bruce; Wertz, Geoffrey; Wilson, George; Yarsky, Peter
Cc: Sheron, Brian; Uhle, Jennifer; Leeds, Eric; Boger, Bruce; Ruland, William; Wiggins, Jim; Moore, Scott; Lewis, Robert; Haney, Catherine; Kokajko, Lawrence; Doane, Margaret; Mamish, Nader; Muessle, Mary; Andersen, James; Johnson, Michael; Flanders, Scott; Cohen, Miriam; Tracy, Glenn; Zimmerman, Roy; Dean, Bill; Lew, David; McCree, Victor; Wert, Leonard; Satorius, Mark; Pederson, Cynthia; Collins, Elmo; Evans, Michele; Holahan, Patricia; Weber, Michael; Virgilio, Martin
Subject: Thank You for Volunteering to Provide Support in Japan

Thank you to everyone who volunteered to support the NRC's Japan Site Team over the past month. While you were not deployed, your offer to support did not go unnoticed and was greatly appreciated by management. There will be additional requests for Site Team support in the near future. While the size and skill set of the team in Japan beyond May 1 has not been finalized I encourage you to continue to express your interest if the request is for a time frame that you can support.

Sincerely,

Michele Evans
Acting Deputy OD, NSIR

From: Hart, Michelle
Sent: Monday, April 18, 2011 2:44 PM
To: Conatser, Richard
Subject: RE: Japan Team -- Task #4701

I'll take a look at it while I'm in the ops center tonight. Assuming I have time. I'll be manning the PMT position, so I am aware of it anyway.

Michelle

From: Conatser, Richard
Sent: Monday, April 18, 2011 9:56 AM
To: McKenney, Christopher; Schaffer, Steven; Dehmel, Jean-Claude; Watson, Bruce; LaVie, Steve; Hart, Michelle
Cc: Shoop, Undine; Pedersen, Roger; Clemons-Webb, Candace; Jimenez, Manuel; Garry, Steven
Subject: Japan Team -- Task #4701

All,

I was asked to provide some information to the Japan Team regarding some of the Health Physics related aspects of Emergency Planning. For this task, the mission is for the Japan Team to provide some information to the Ambassador's Staff (so the Ambassador is better prepared to answer questions that may be asked of him). In support of that mission, I prepared this draft outline that contains some information that may be useful to the Japan Team.

If you have the time and the inclination, please review and provide comments. I'd like to add some Q&As but I have not had time to do that yet. If you'd like to add some Q&As, please do. One note, the dose calculation at the end needs to include the bioaccumulation factor, I'll make sure that gets corrected. This is just a strawman, so let me know what you think.

If you have any comments, please provide them to me. The Japan Team meets with the Ambassador's Staff within the next 24 hours, so a quick response would be great in order to support that meeting. This will also be used for the longer term, so even if you have comments later this week, please pass them to me. Any comments you have would be greatly appreciated.

Thanks,

Richard L. Conatser
Health Physicist
Nuclear Regulatory Commission
301-415-4039
Richard.Conatser@NRC.gov

DRAFT

Comparison of Intervention Levels for Different Countries

Draft prepared by NRC Staff in IHPB and other NRC personnel for NRC use

17-Apr-11

Task Description:

(b)(5)

Strategy:

(b)(5)

Key Information Regarding Scope:

(b)(5)

(b)(5)

Organization, Command, and Control:

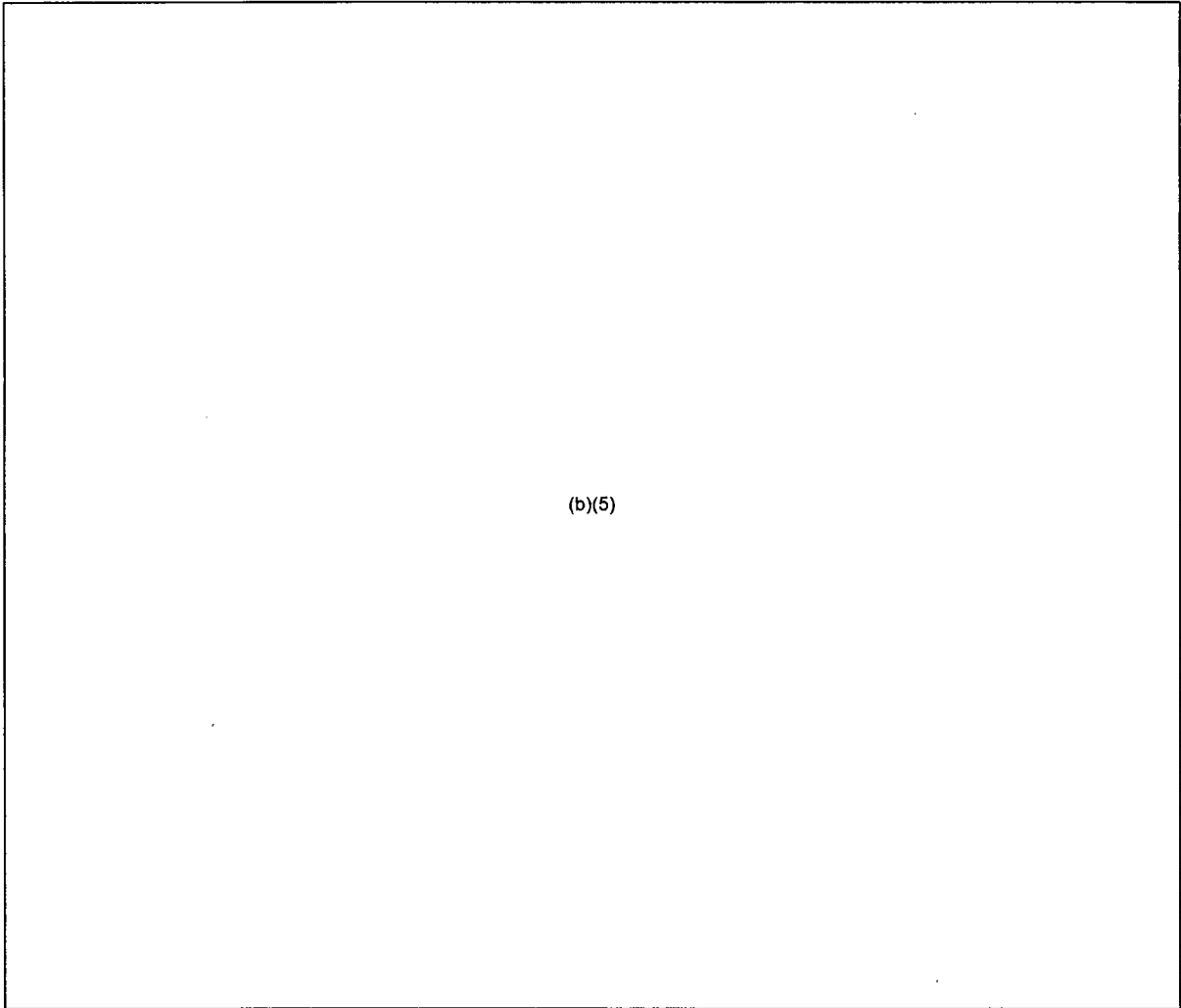
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Emissions of Radiation and Radioactive Material:

(b)(5)

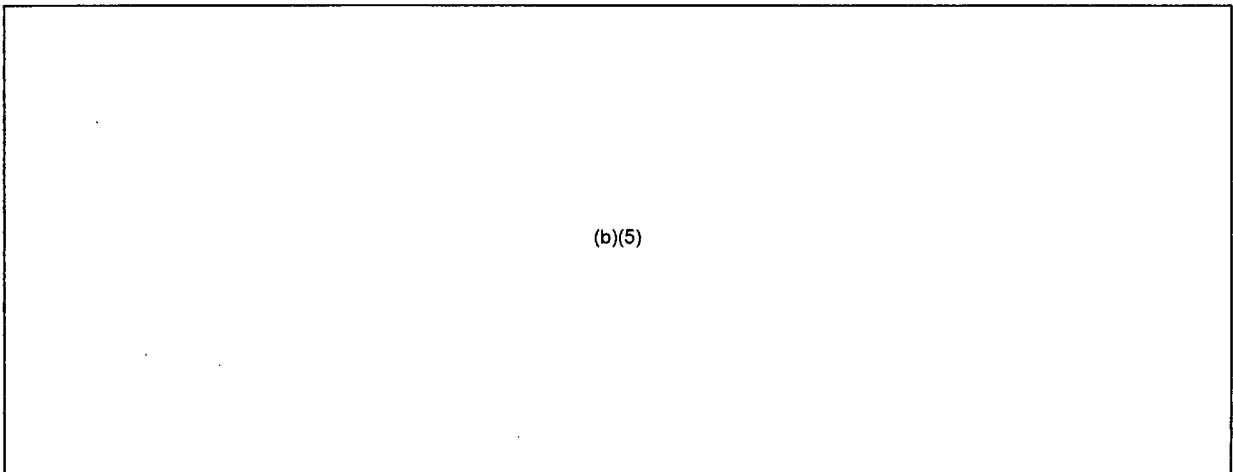
Protective Actions:

(b)(5)



(b)(5)

Derived Intervention Levels:



(b)(5)

(b)(5)

(b)(5)

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Exposure Pathways:

(b)(5)

(b)(5)

(b)(5)

From: Watson, Bruce
Sent: Wednesday, April 20, 2011 2:58 PM
To: Watson, Bruce; Hoc, PMT12
Cc: Hart, Michelle
Subject: RE: Point of Contact for NARAC

On 4/20/11 I emailed John Nasstom that the Sandia contact is Randy Gauntt. This task is closed.

Bruce A. Watson, CHP
Chief - Reactor Decommissioning Branch
US Nuclear Regulatory Commission
Rockville, MD 20852
301-415-6221 Office

From: Watson, Bruce
Sent: Wednesday, April 20, 2011 12:51 PM
To: Hoc, PMT12
Cc: Hart, Michelle
Subject: RE: Point of Contact for NARAC

4/20/11 @1300: I called John Nasstrom at NARAC to follow up on his request from last week. John confirmed that He was aware thru his contacts with DOE in Japan that Sandia NL was working for NRC on possibly recreating the source terms using MELCOR. He asked that if we had any specific contact names in Japan, he would contact them otherwise he would depend on his DOE contacts.

Bruce A. Watson, CHP
Chief - Reactor Decommissioning Branch
US Nuclear Regulatory Commission
Rockville, MD 20852
301-415-6221 Office

From: Hoc, PMT12
Sent: Friday, April 15, 2011 9:26 AM
To: Watson, Bruce
Subject: RE: Point of Contact for NARAC

Bruce

Thanks for the update. Keep those cards and letters coming – so we can keep the ET advised of the situation and know when we have completed the action.

Sandi Wastler
PMT/PAAD

From: Watson, Bruce
Sent: Friday, April 15, 2011 6:52 AM
To: Hoc, PMT12; Steve LaVie; Hart, Michelle
Cc: Hiland, Patrick; Gibson, Kathy; Rosenberg, Stacey; Wastler, Sandra
Subject: RE: Point of Contact for NARAC

PMT,

Disregard the previous email, somehow I send it before completing the message. I hope this clarifies any issues.

Here is the chronology of events:

On 4/13 at 8:52 PM, the PMT sent an email to the RAADs requesting that one of us call NARAC. After getting clarification from Kathy Brock, PMT on 4/14 around 1030 AM, I called NARAC to set up a call with John Nasstrom.

On 4/14 at 1342, Michele and I requested Kathy Brock send out the following email based on our conversation with John Nasstrom.

Hello RST and Japan Team,

Can you please respond to these two questions to assist the staff in answering a question from NARAC on the development of new source terms. Please respond to all. NRC staff points of contact are Bruce Watson and Michelle Hart. This is not an action, just a question – we are just looking for information.

- Do we have anyone recreating the source term from the reactors and SFP based on plant conditions or field measurement readings?
- Are there updates on releases or degree of core damage based on plant data?

After K. Brock's email, I decided to document our conversation with NARAC which is my ~ 1430 email as follows: On 4/14 at 1245, Michele Hart and I had a call with John Nasstrom at NARAC. At the request of DOE/OSTP (Dr. Fetter at the White House), NARAC is attempting to recreate the source term/releases from Fukushima using deposition data. NARAC would like to know if the NRC-RST or the Japan Team have tried to recreate the source term/releases and would be share the data with them. John will email the 4/12 Japan press release citing their source term estimates. He will also email the Dr. Fetter's spreadsheet comparing source terms; the Japan estimates, the IAEA estimate. and what John believes is the NRC "Realistic Plausible" case.

(b)(5)

Bruce A. Watson, CHP
Chief - Reactor Decommissioning Branch
US Nuclear Regulatory Commission
Rockville, MD 20852
301-415-6221 Office

From: Hoc, PMT12
Sent: Friday, April 15, 2011 5:20 AM
To: Watson, Bruce; Steve LaVie; Hart, Michelle
Cc: Hiland, Patrick; Gibson, Kathy
Subject: RE: Point of Contact for NARAC

Bruce,

Would you mind clarifying the steps that you plan on taking in helping NARAC? There is some confusion in the PMT as to exactly what steps are going to be taken.

Thanks.

-Jessica Kratchman
PMT PAAD

From: Watson, Bruce
Sent: Thursday, April 14, 2011 2:16 PM
To: Hoc, PMT12; Steve LaVie; Hart, Michelle
Subject: RE: Point of Contact for NARAC

(b)(5)

Bruce A. Watson, CHP
Chief - Reactor Decommissioning Branch
US Nuclear Regulatory Commission
Rockville, MD 20852
301-415-6221 Office

From: Hoc, PMT12
Sent: Wednesday, April 13, 2011 8:22 PM
To: Steve LaVie; Hart, Michelle; Watson, Bruce
Subject: Point of Contact for NARAC

All

(b)(5)

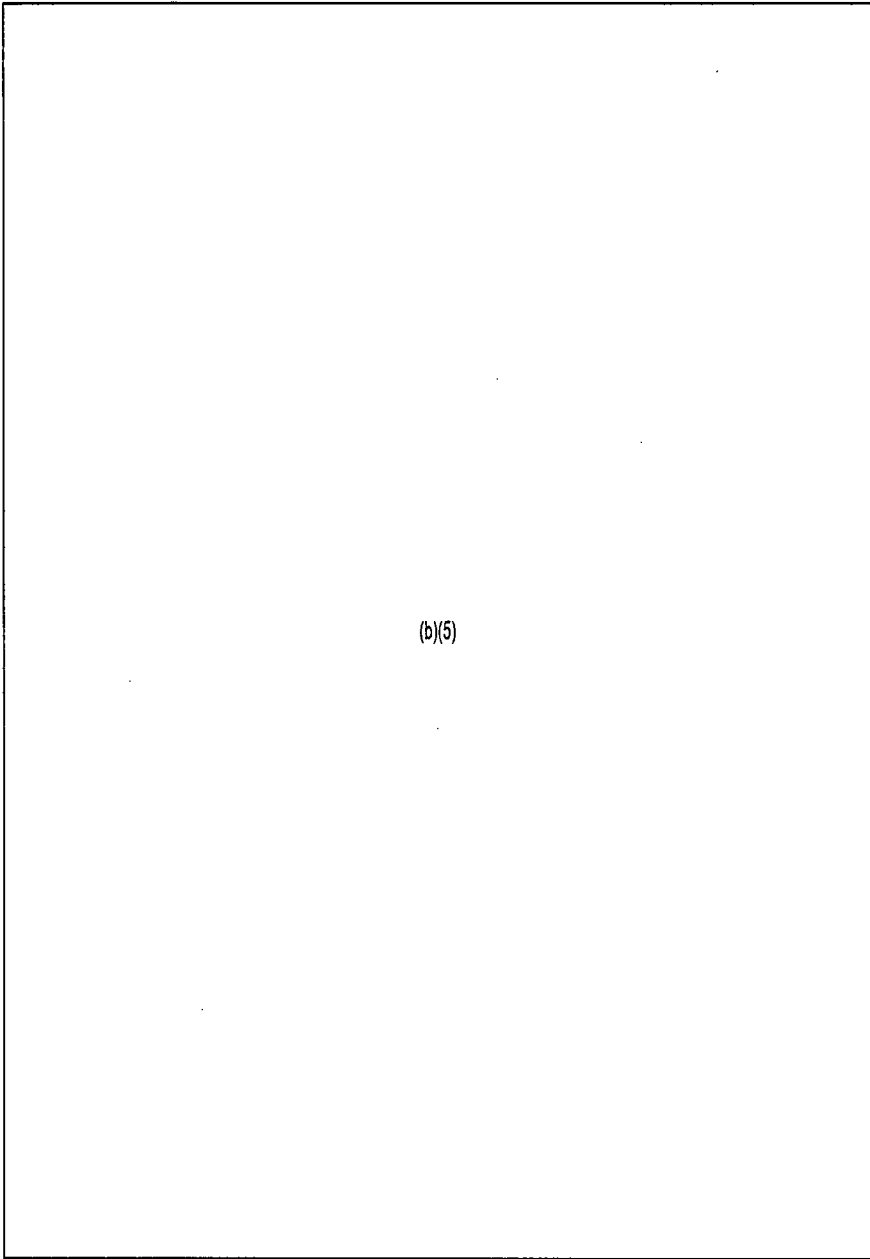
Would you be able to be the contact person for this action? Please let the PMT PAAD know as soon as possible if one of you can assist in this manner. Also let the PMT PAAD know if I need to send this request to your management. NRC needs to get back to NARAC soon.

Sandra Wastler
PMT PAAD



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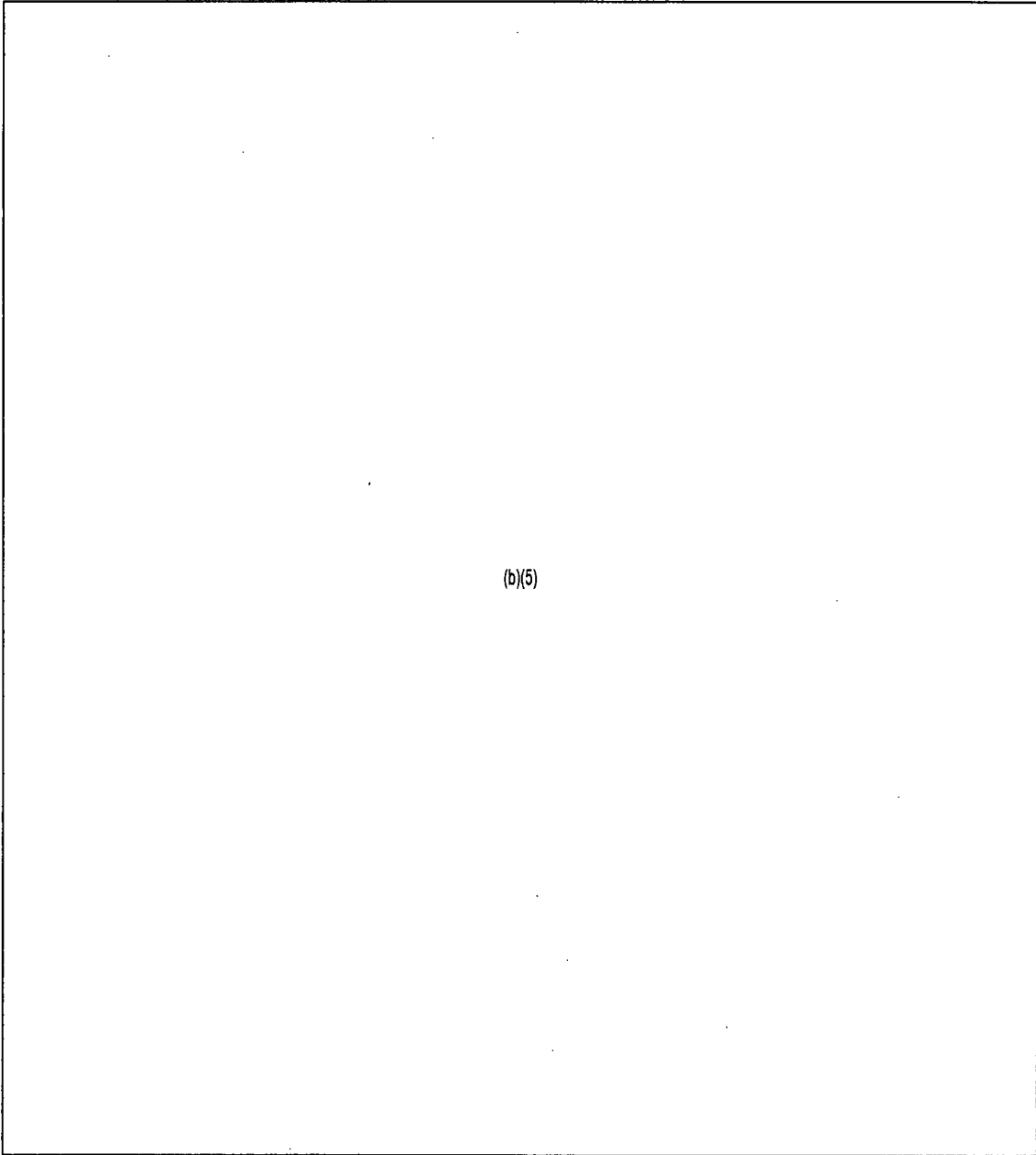


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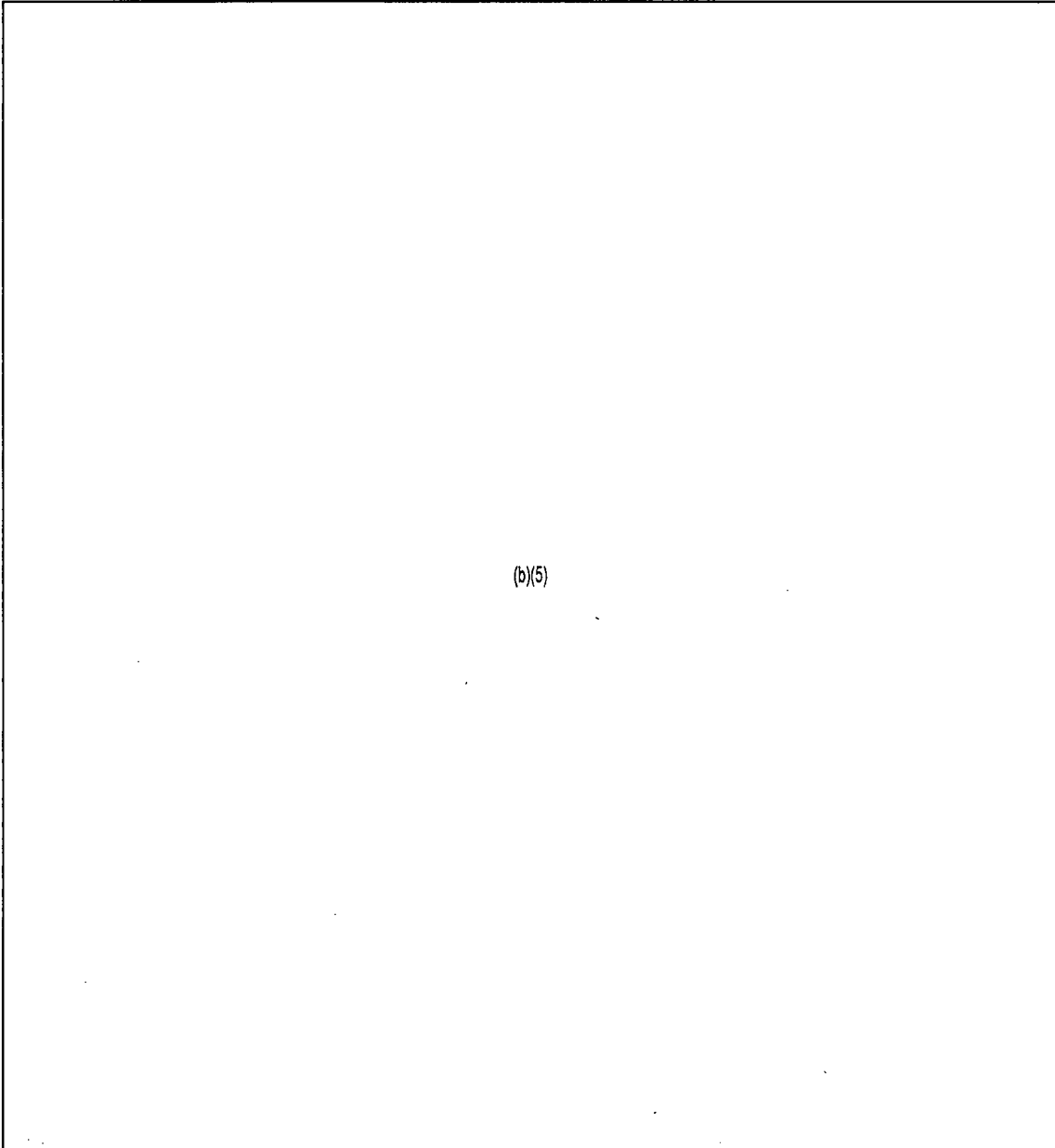
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CONTACT: Damian Peko (phone: 301-903-7283; email: Damian.Peko@nuclear.energy.gov)



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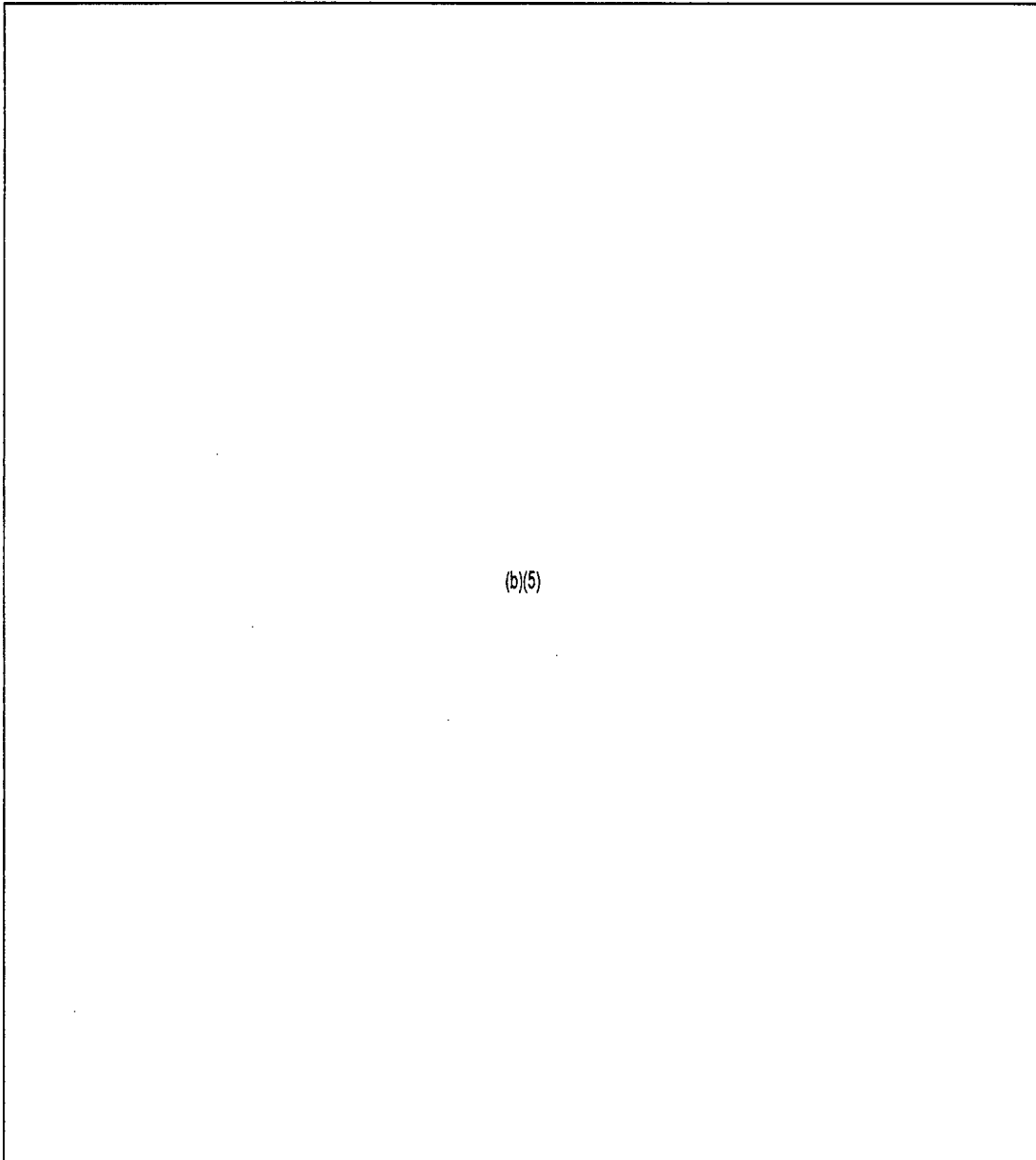


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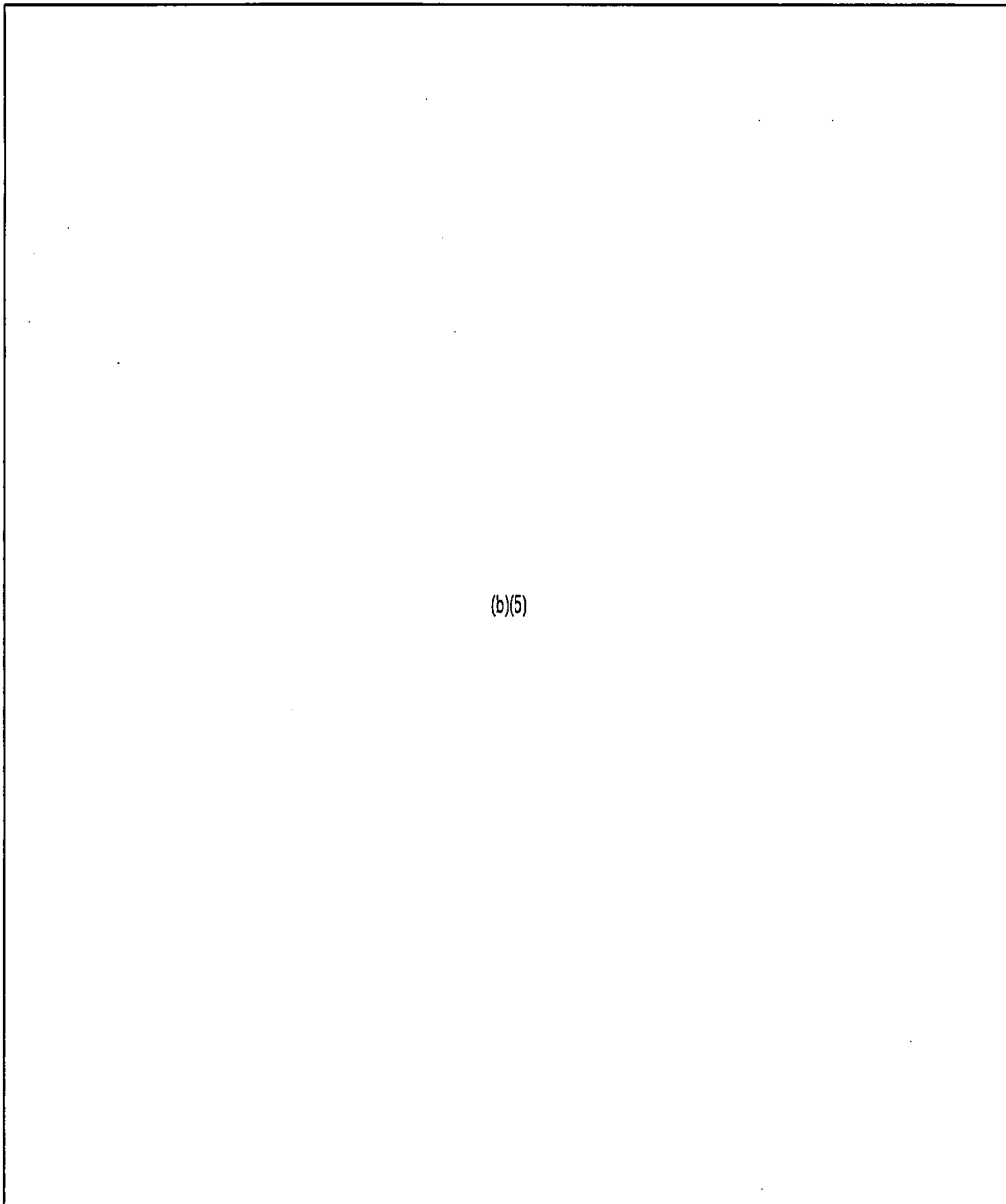


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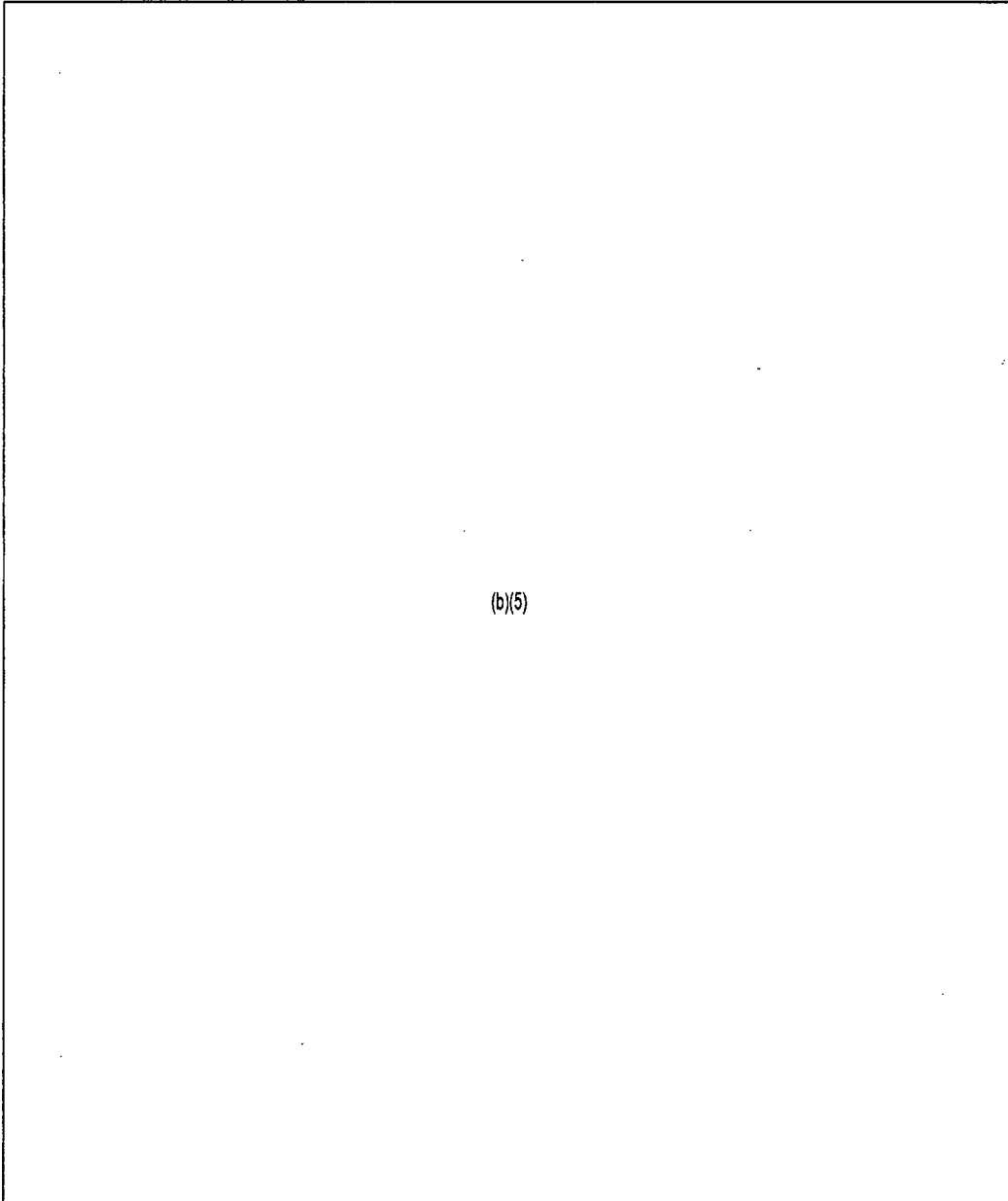
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Nuclear Energy

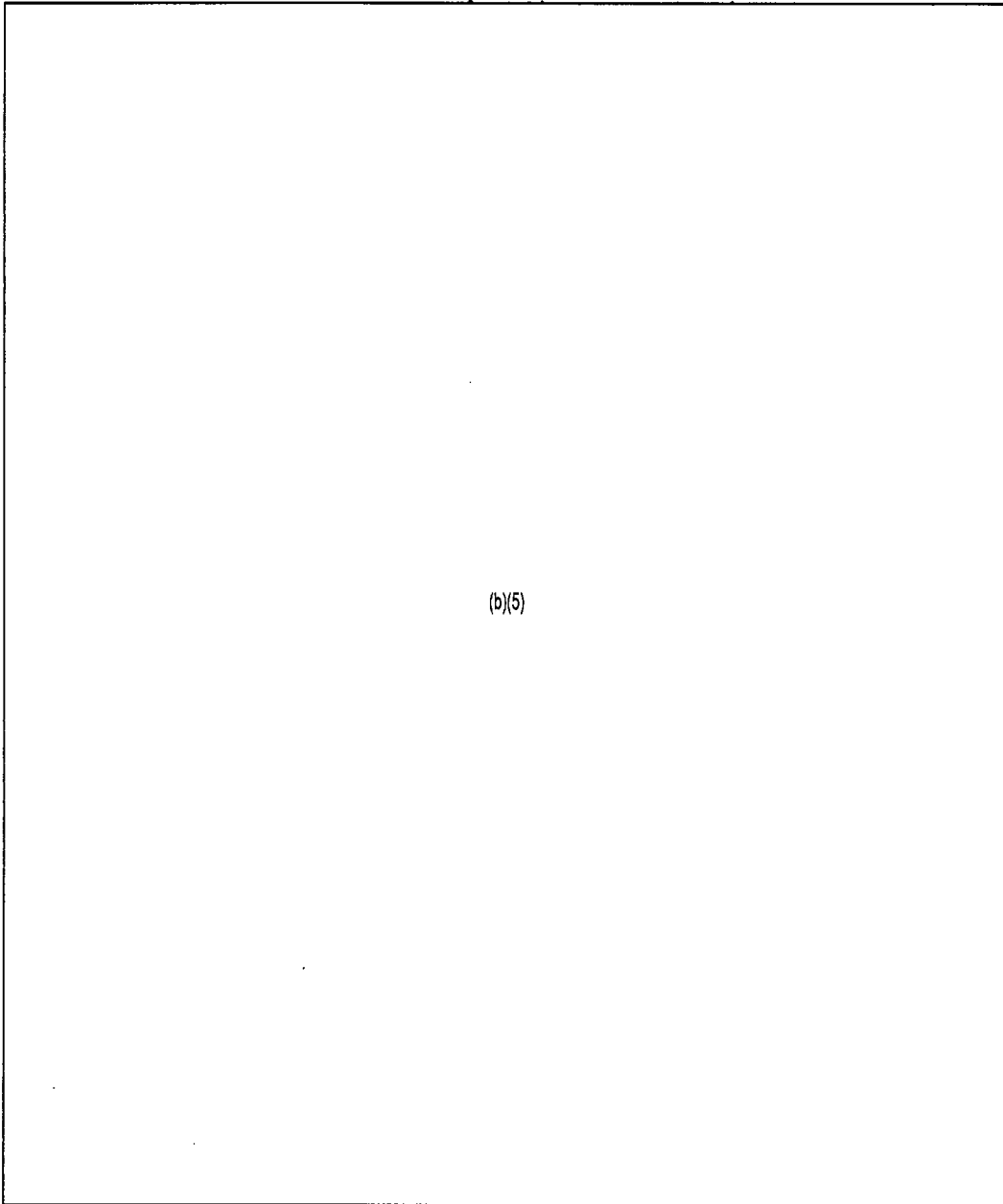


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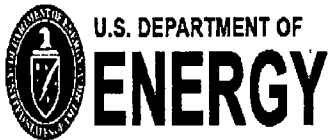
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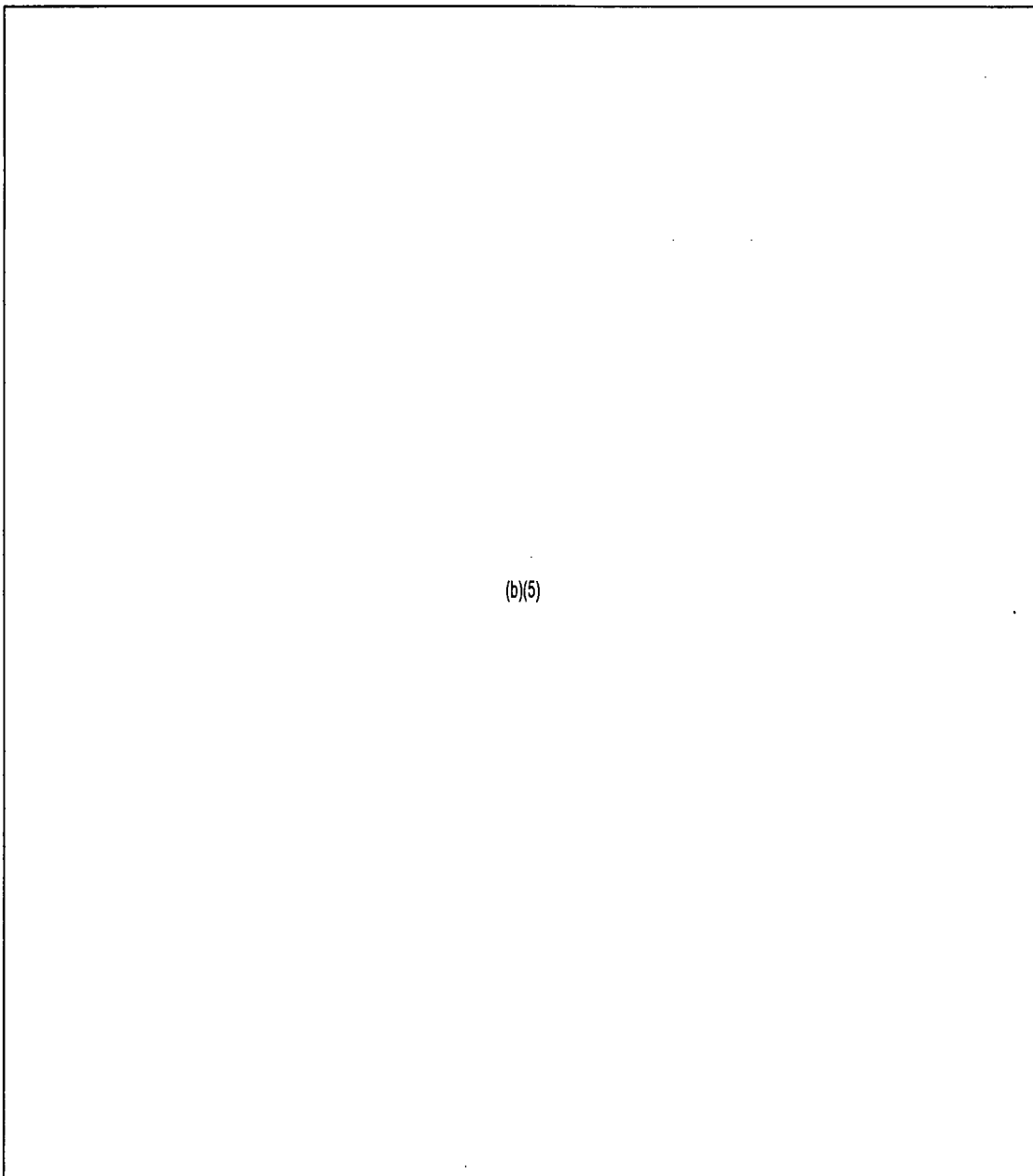
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CONTACT: Damian Peko (phone: 301-903-7283; email: Damian.Peko@nuclear.energy.gov)



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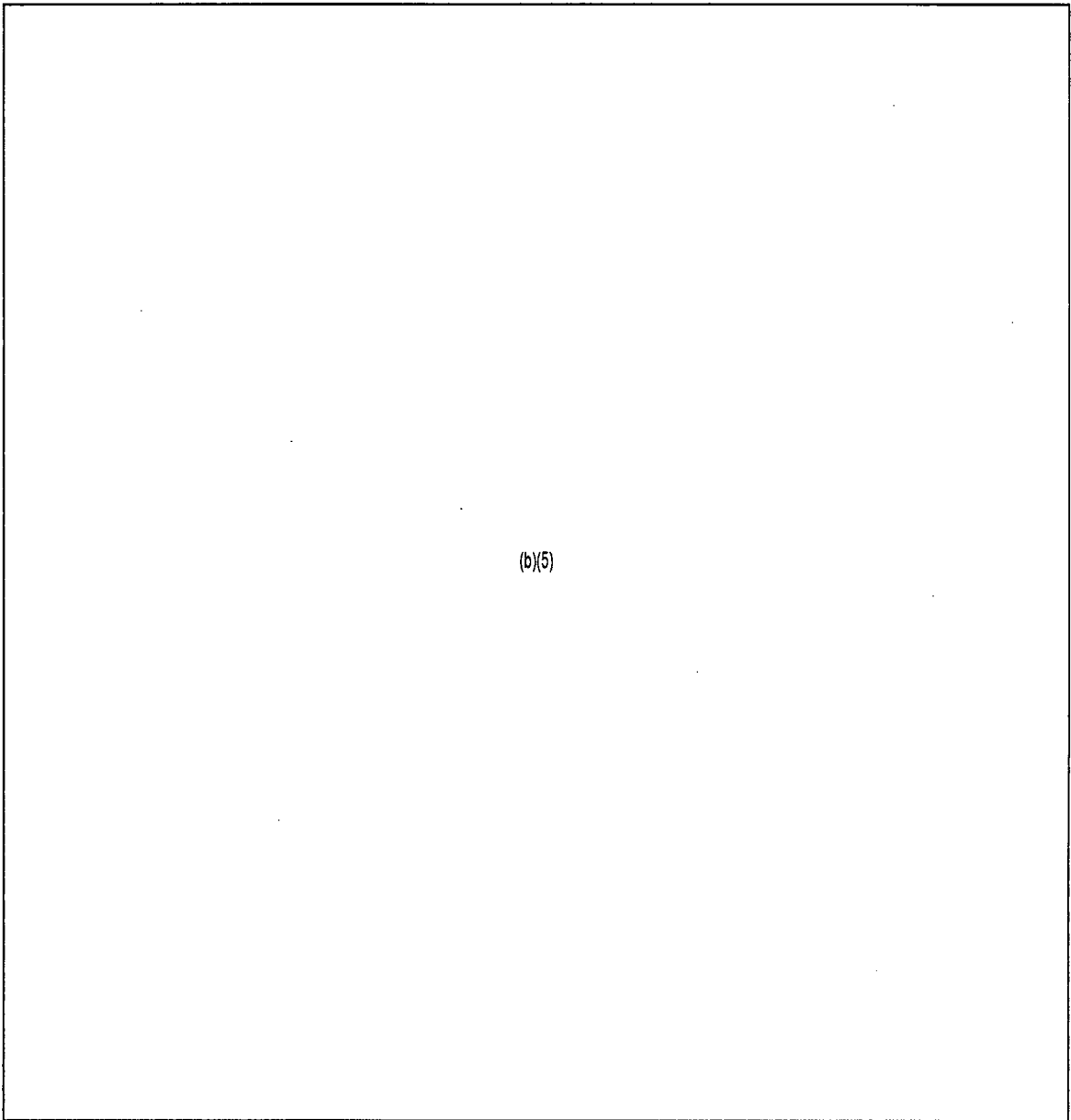
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CONTACT: Damian Peko (phone: 301-903-7283; email: Damian.Peko@nuclear.energy.gov)



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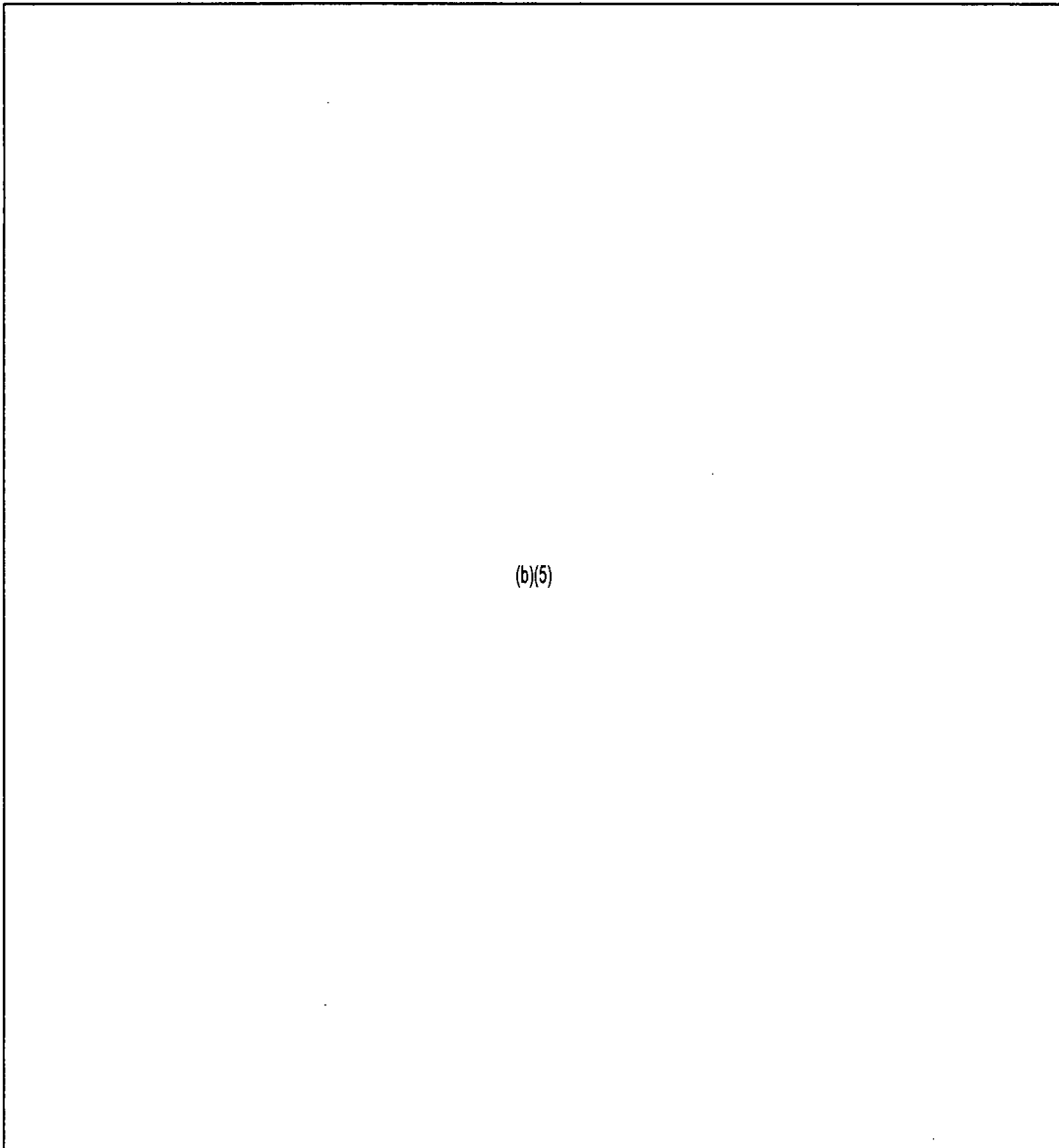


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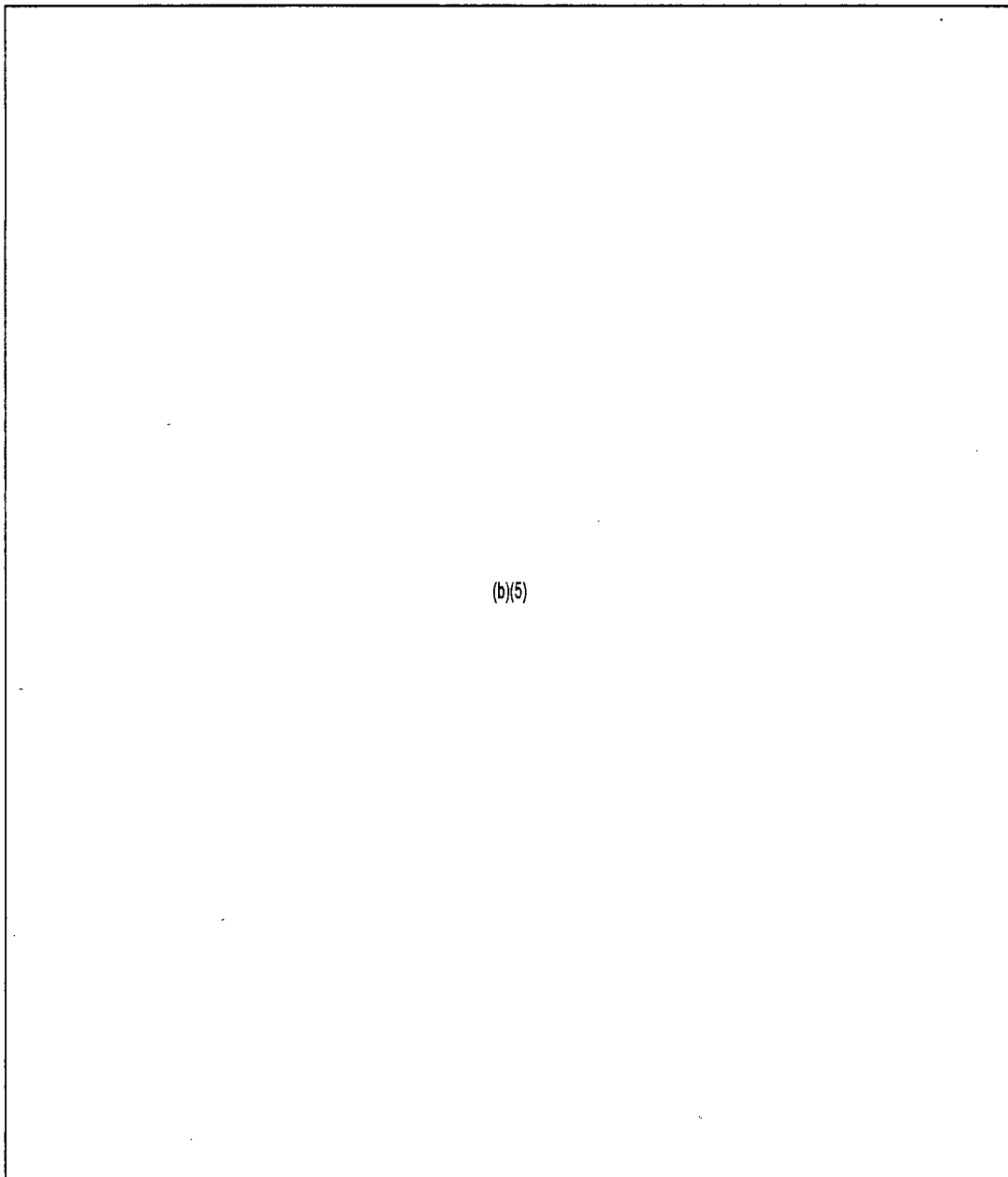


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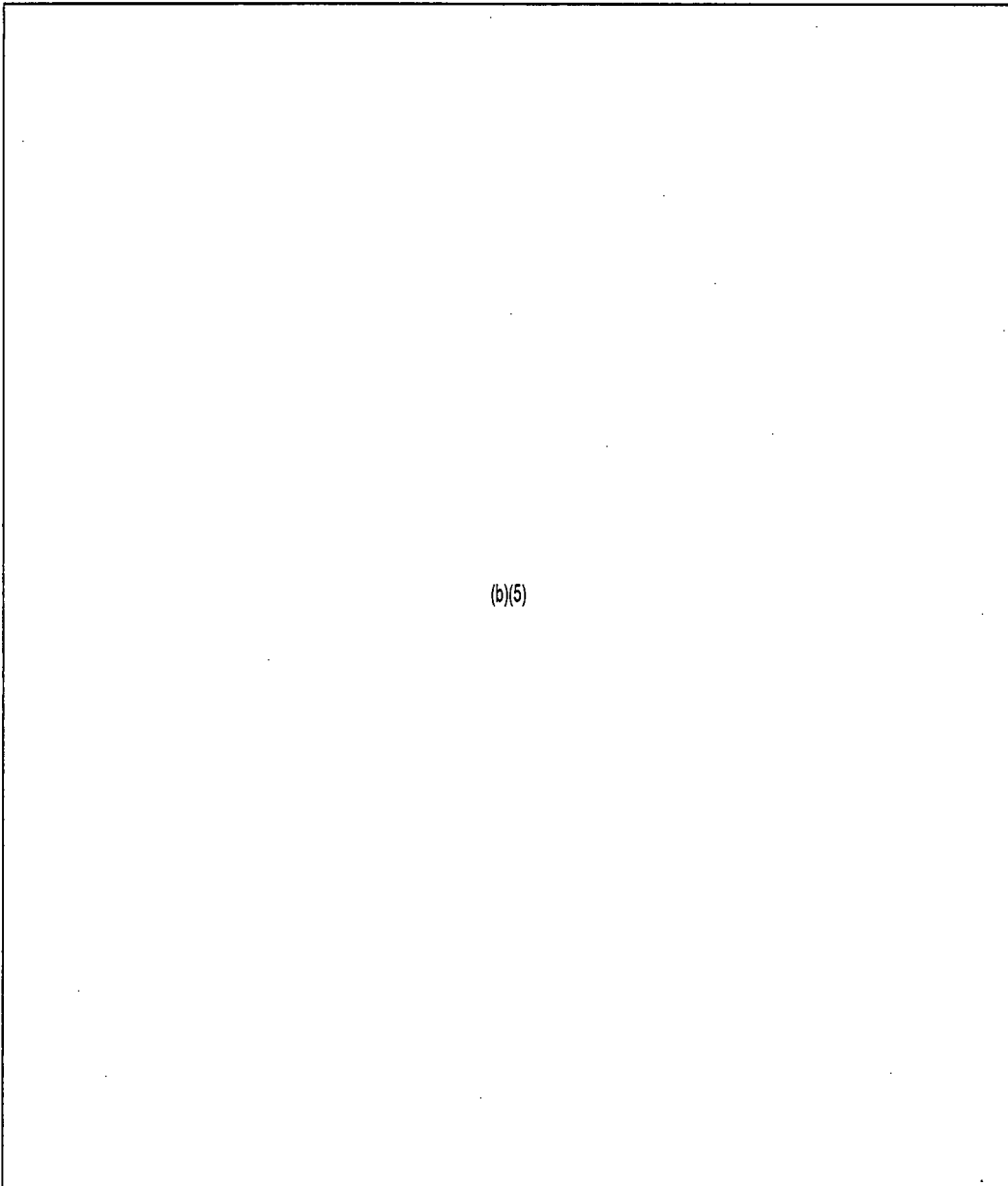


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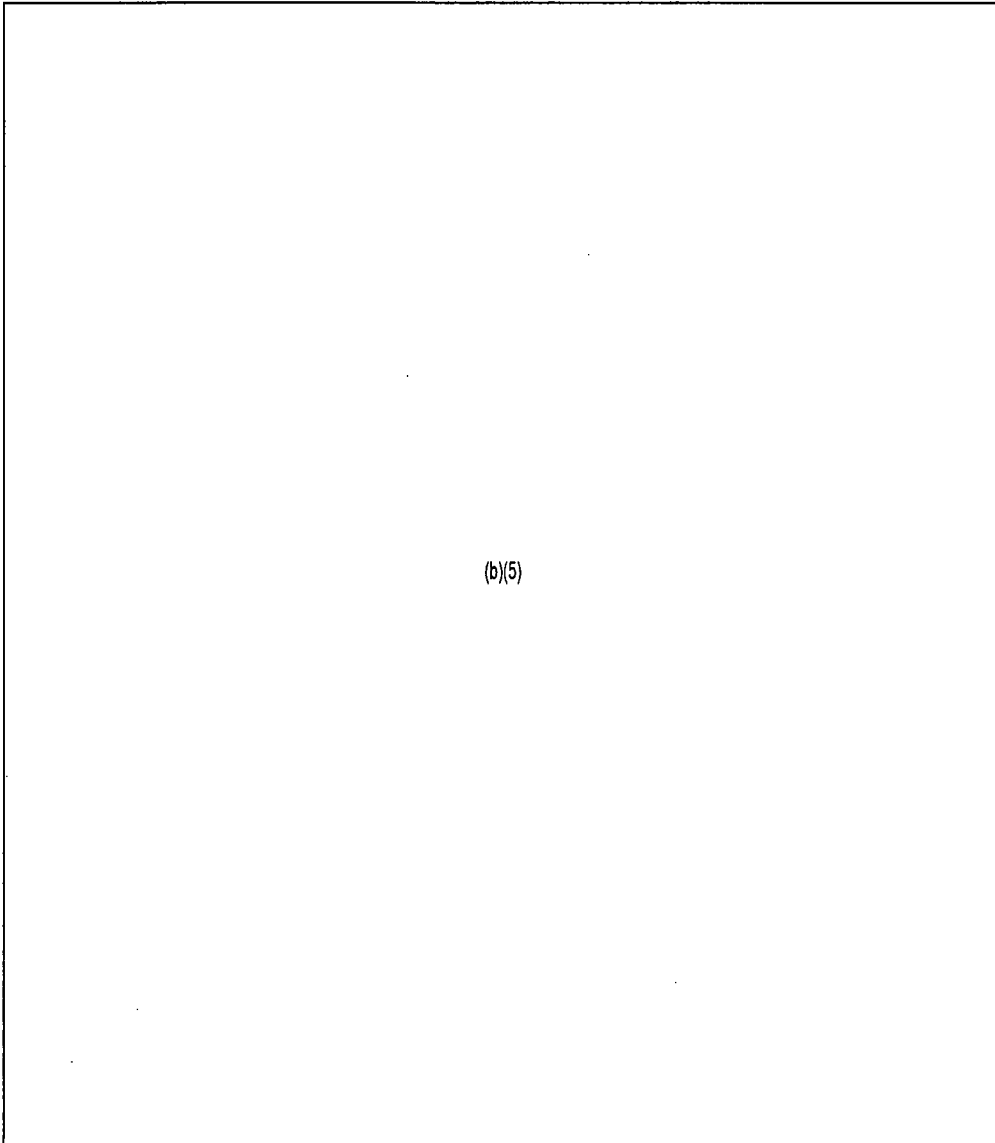
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CONTACT: Damian Peko (phone: 301-903-7283; email: Damian.Peko@nuclear.energy.gov)



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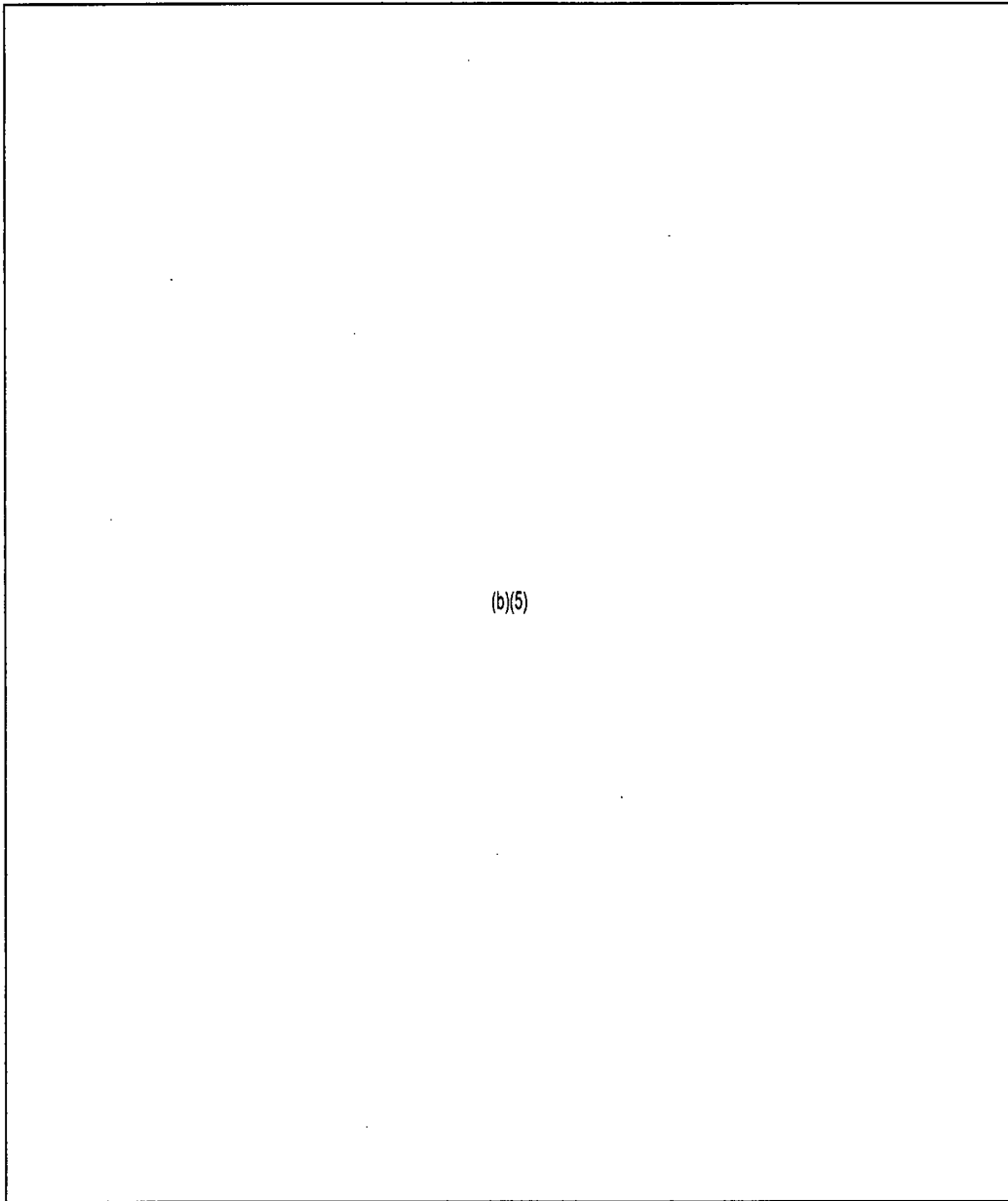


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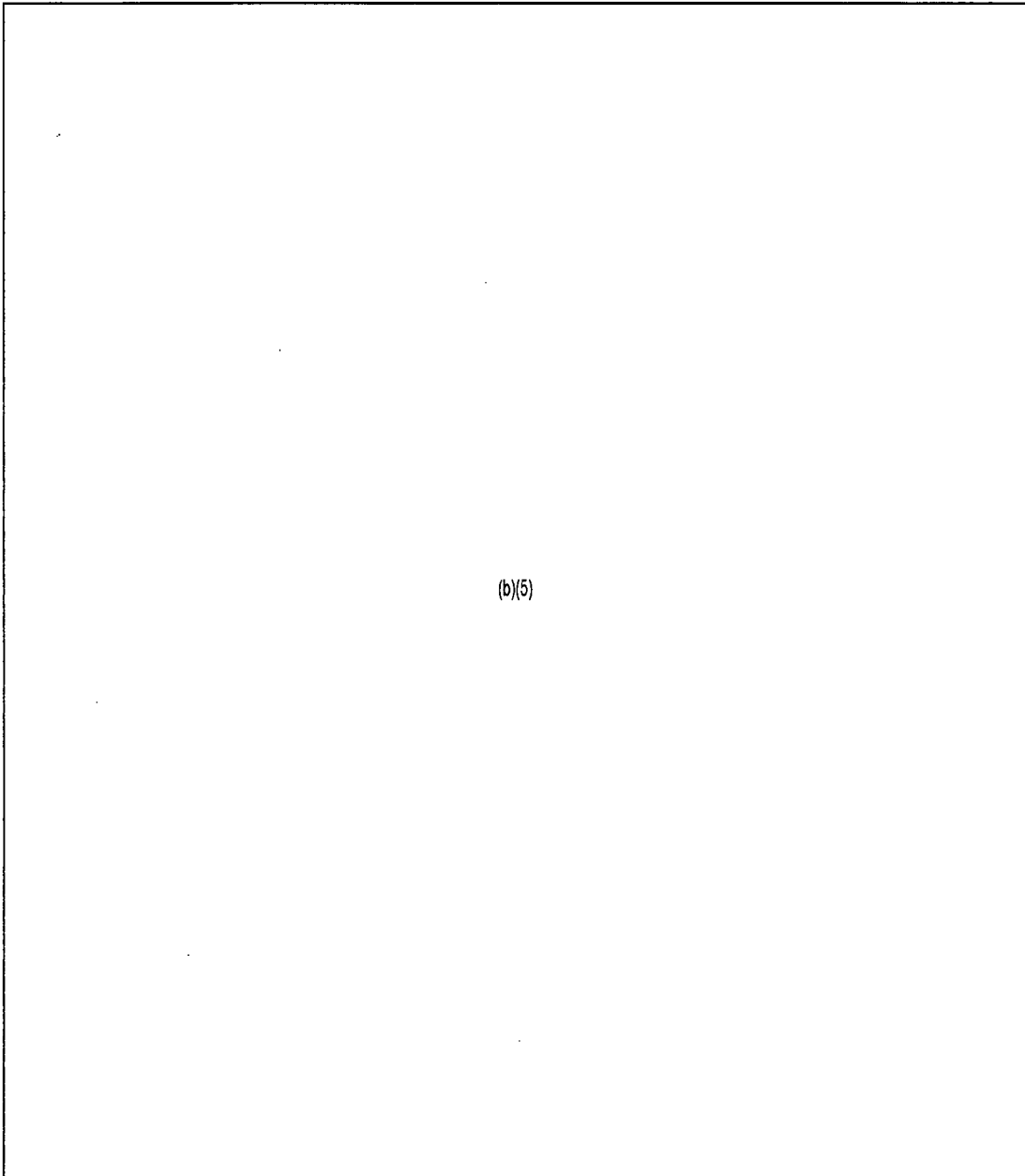


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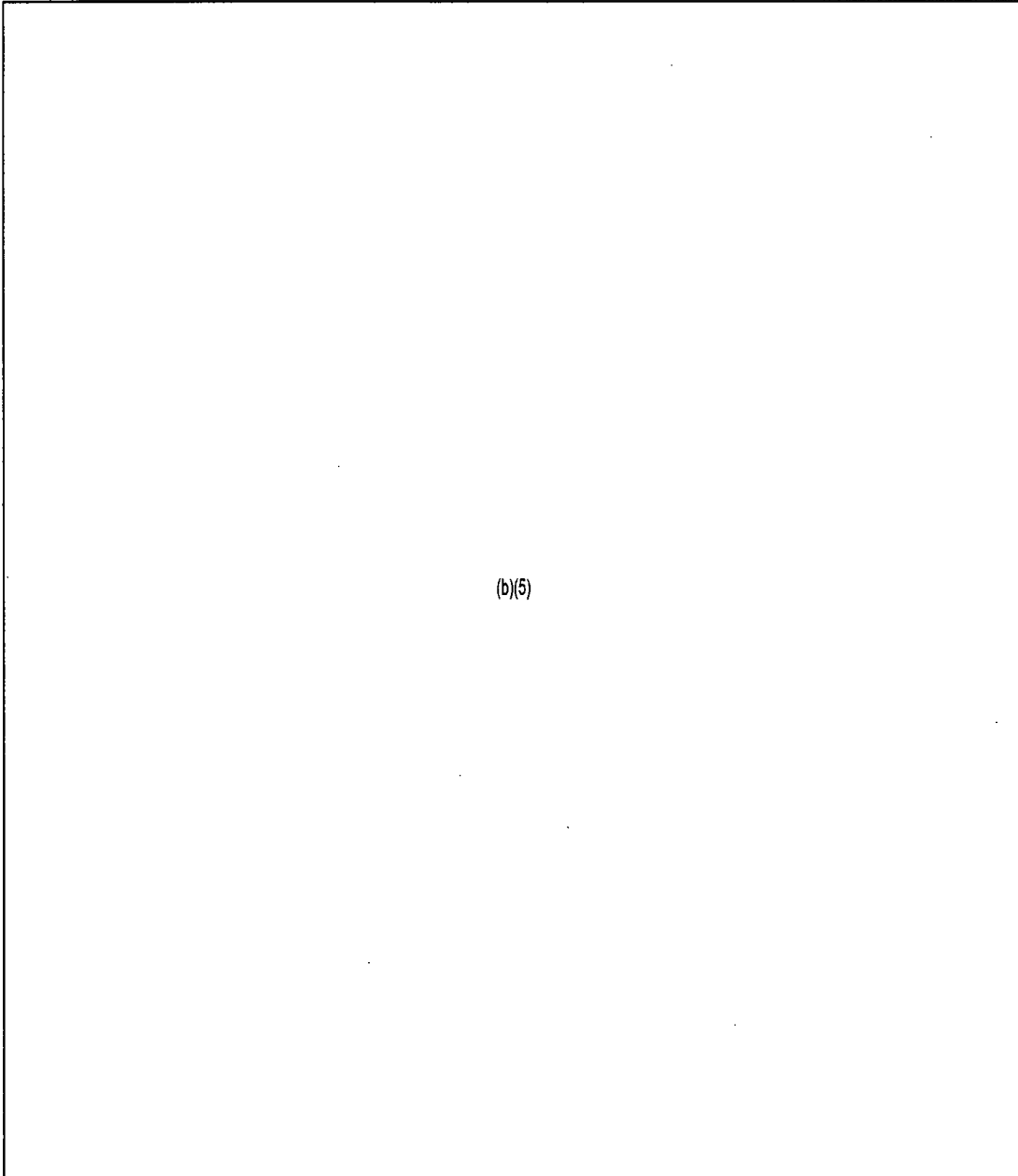


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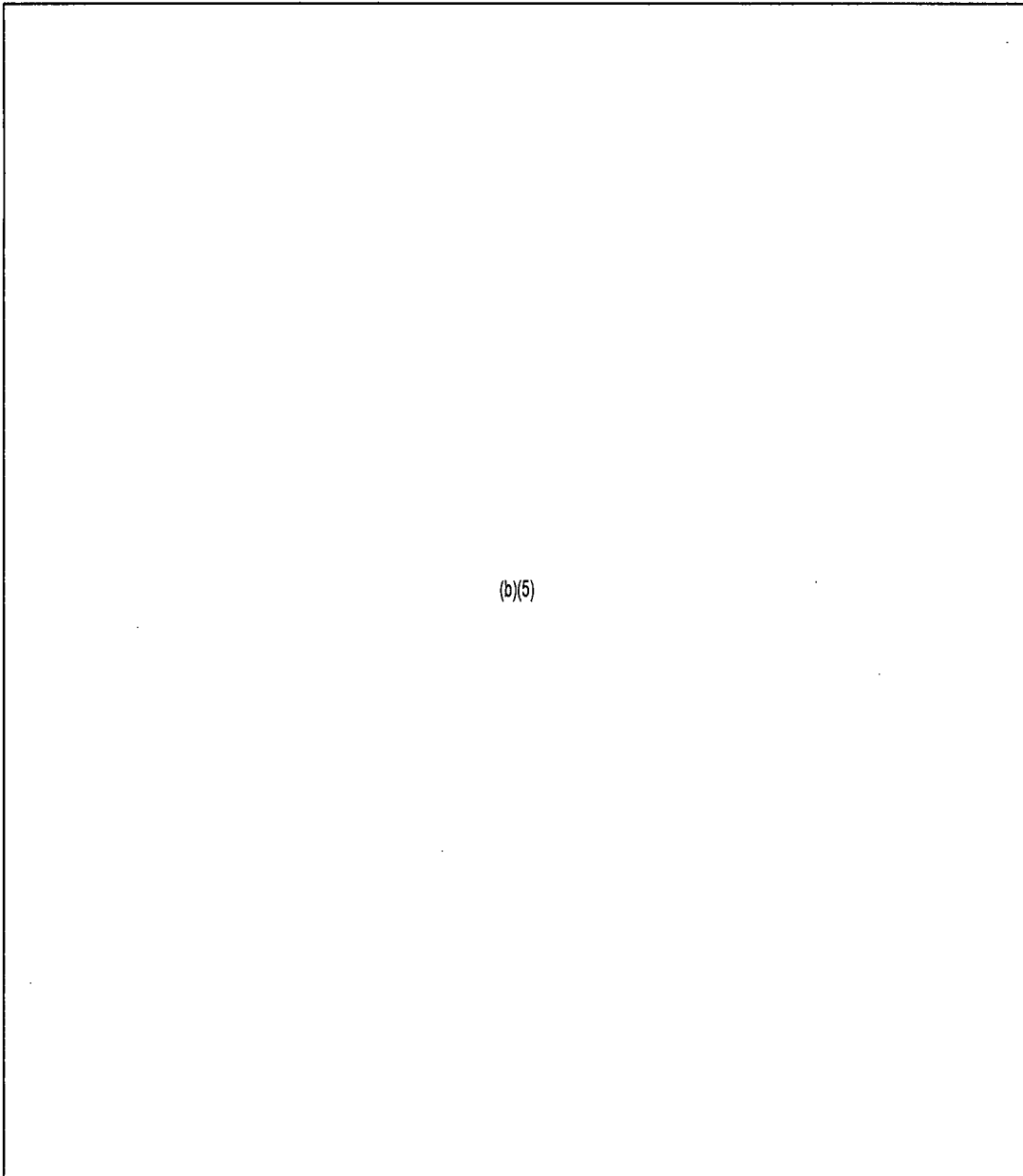


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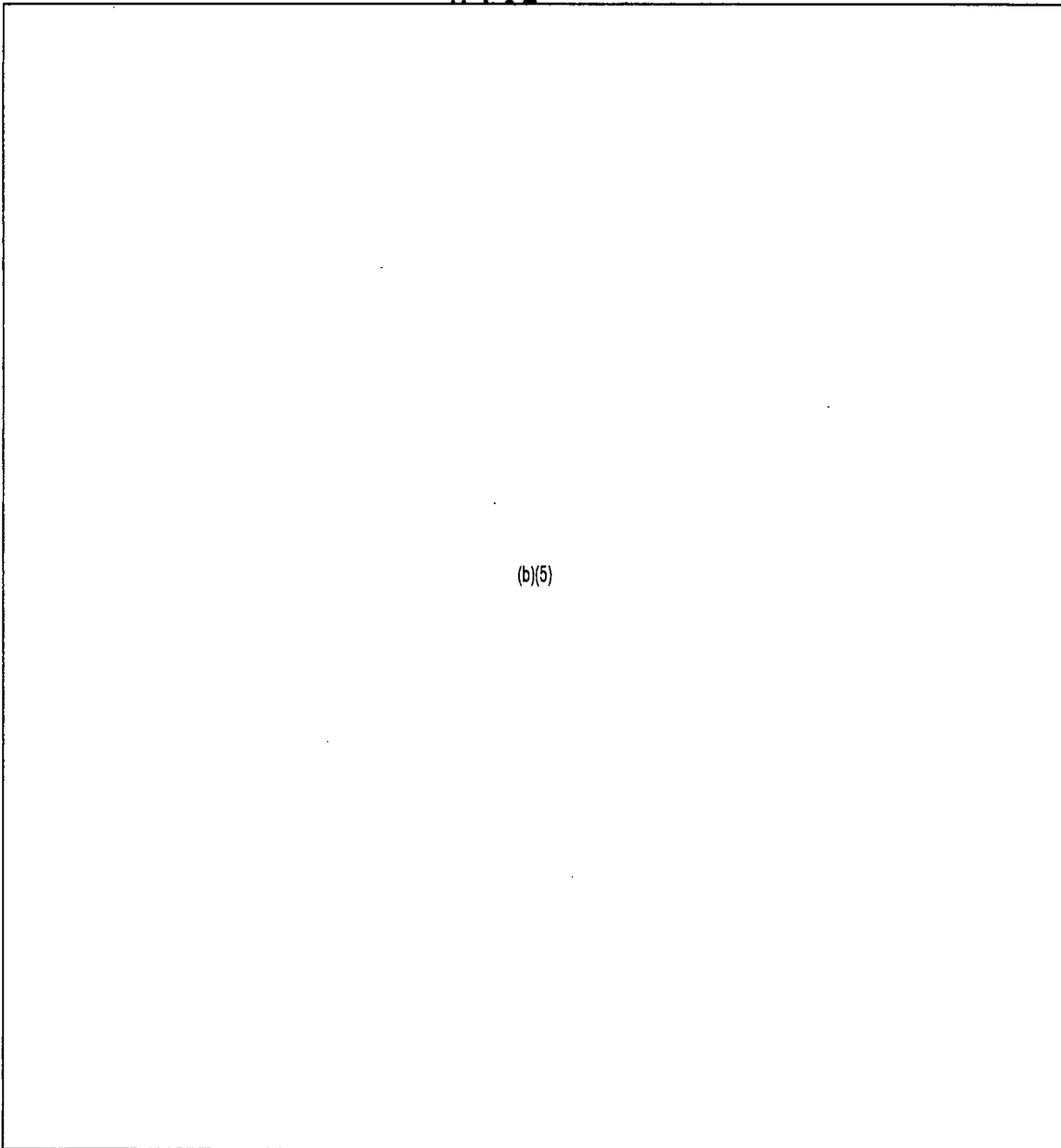


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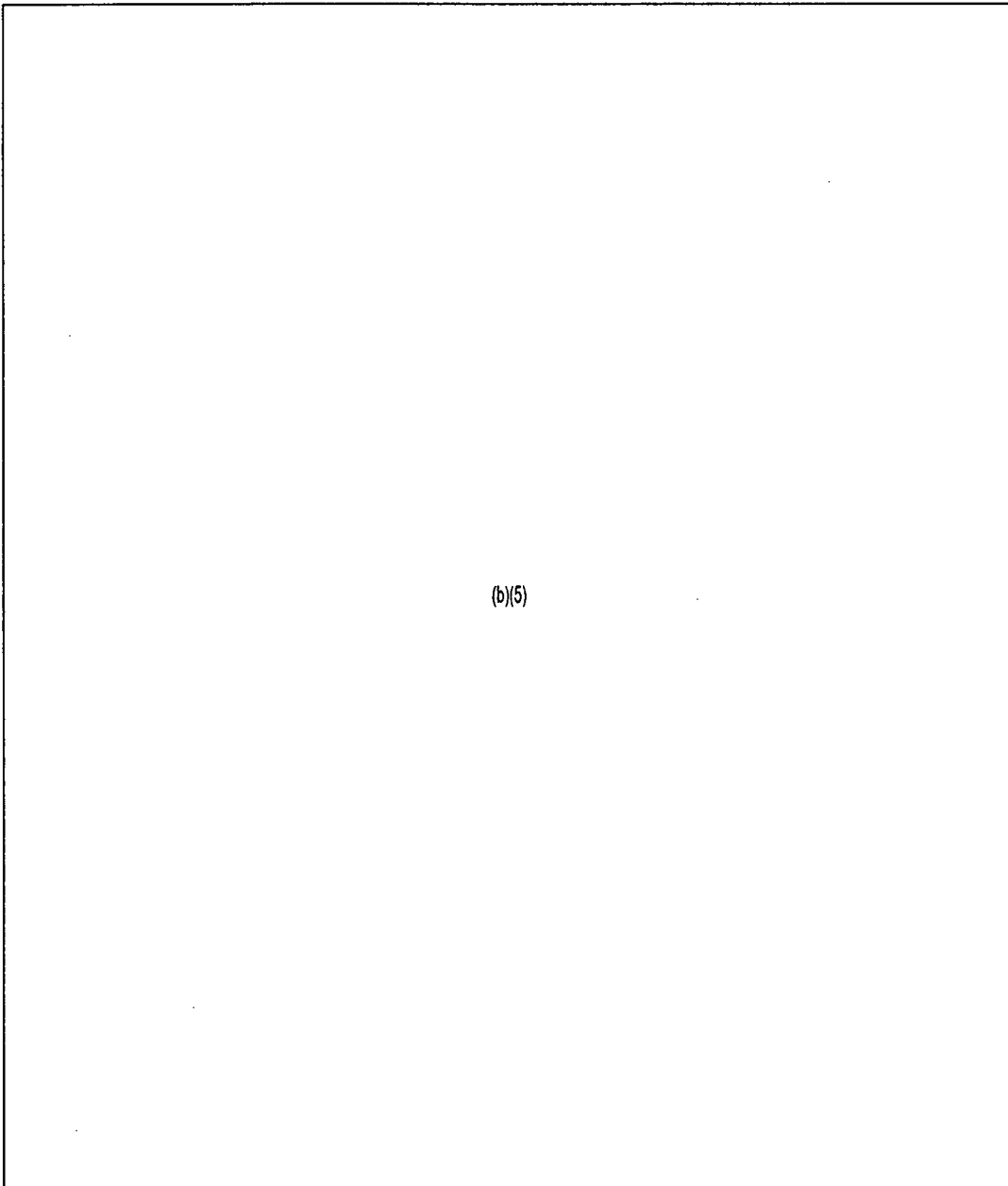


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ENERGY

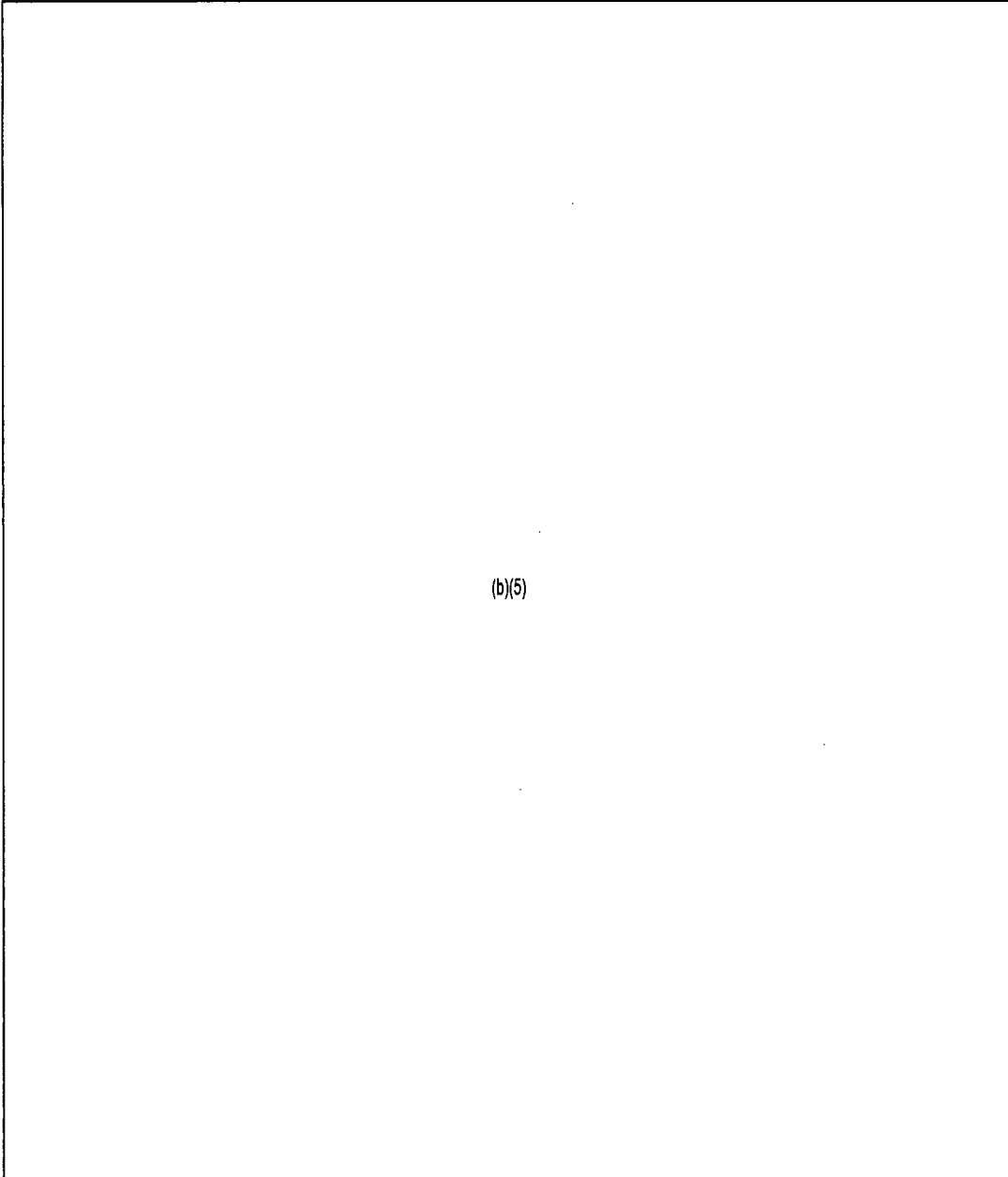
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ENERGY

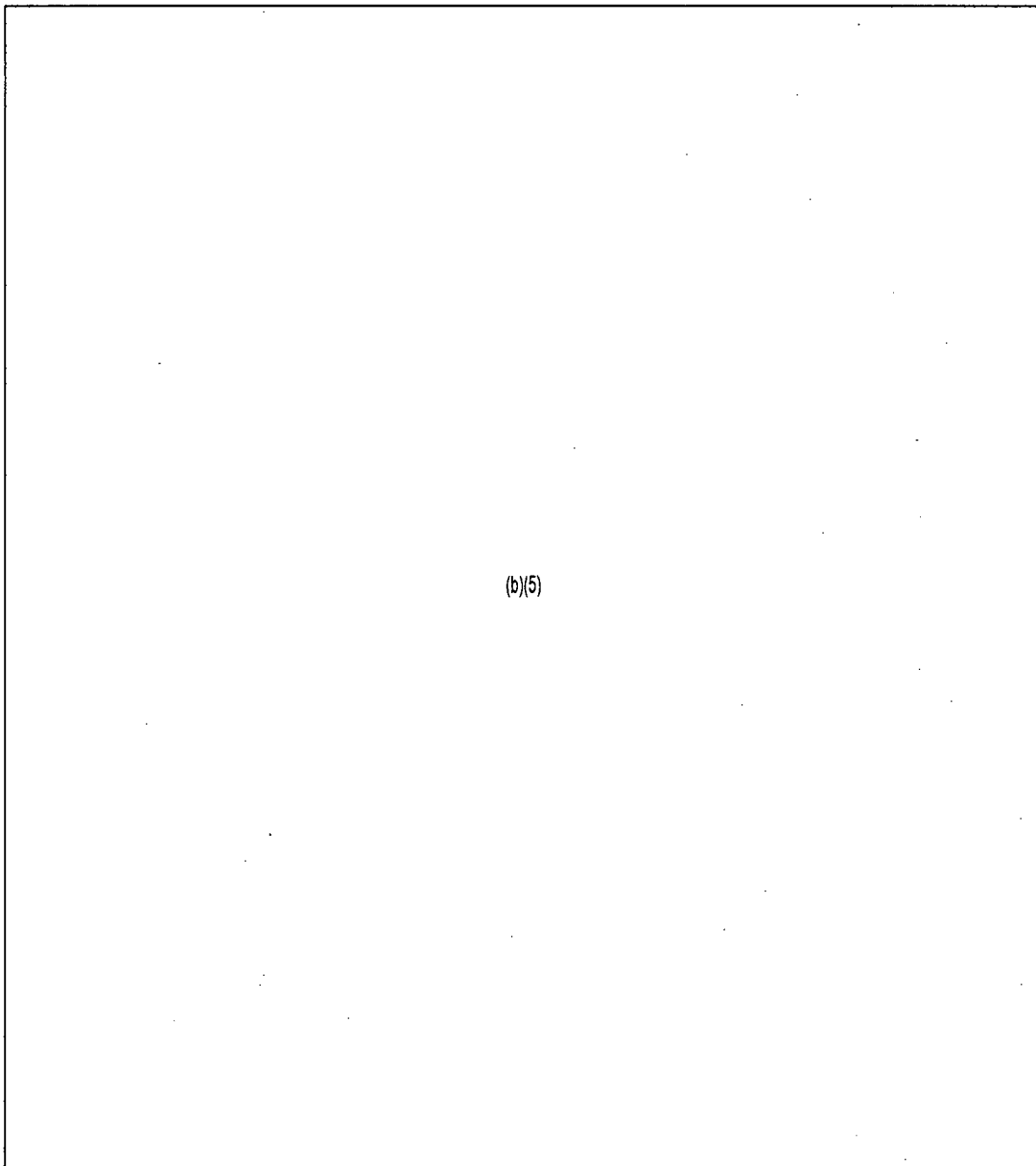
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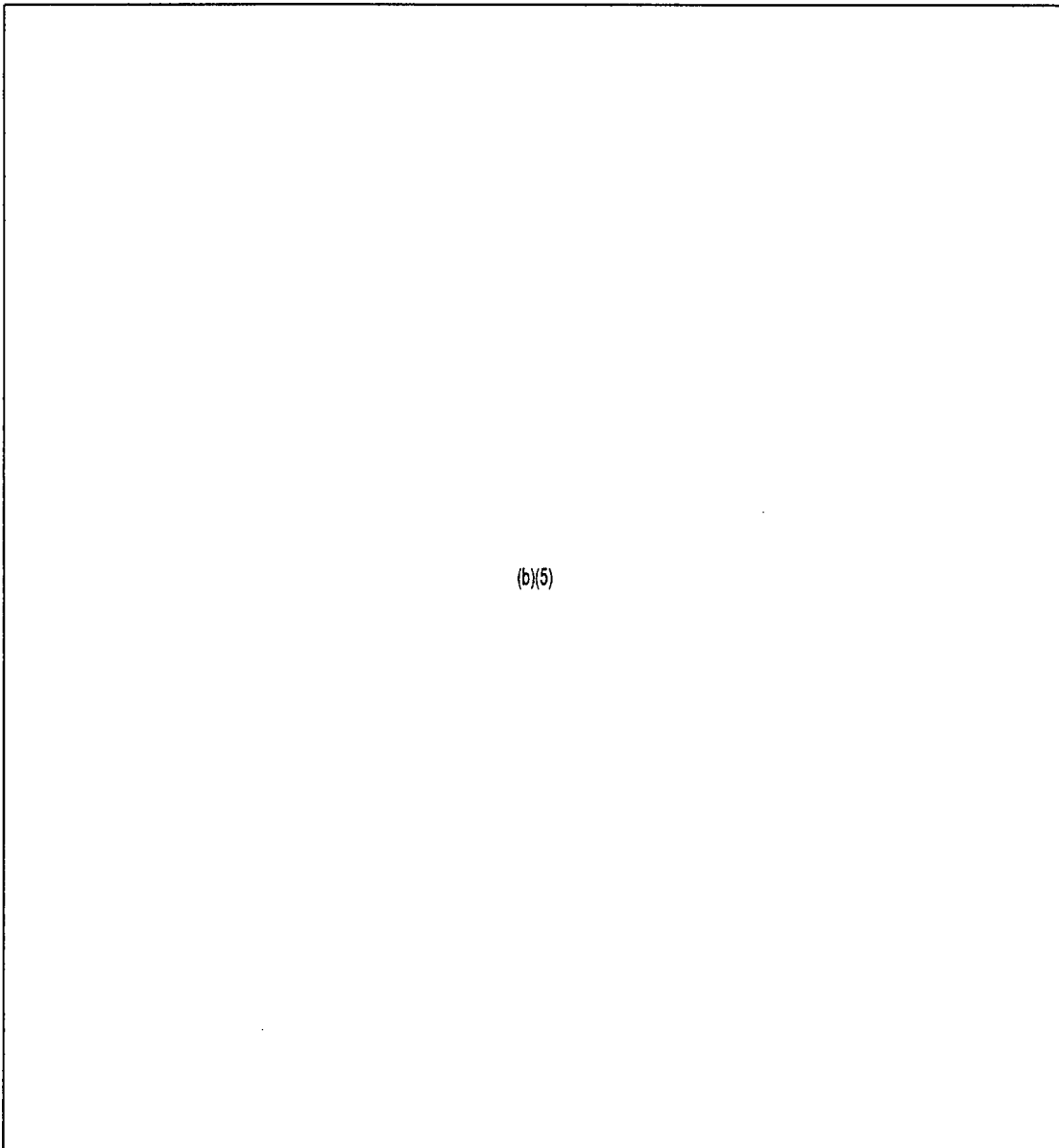
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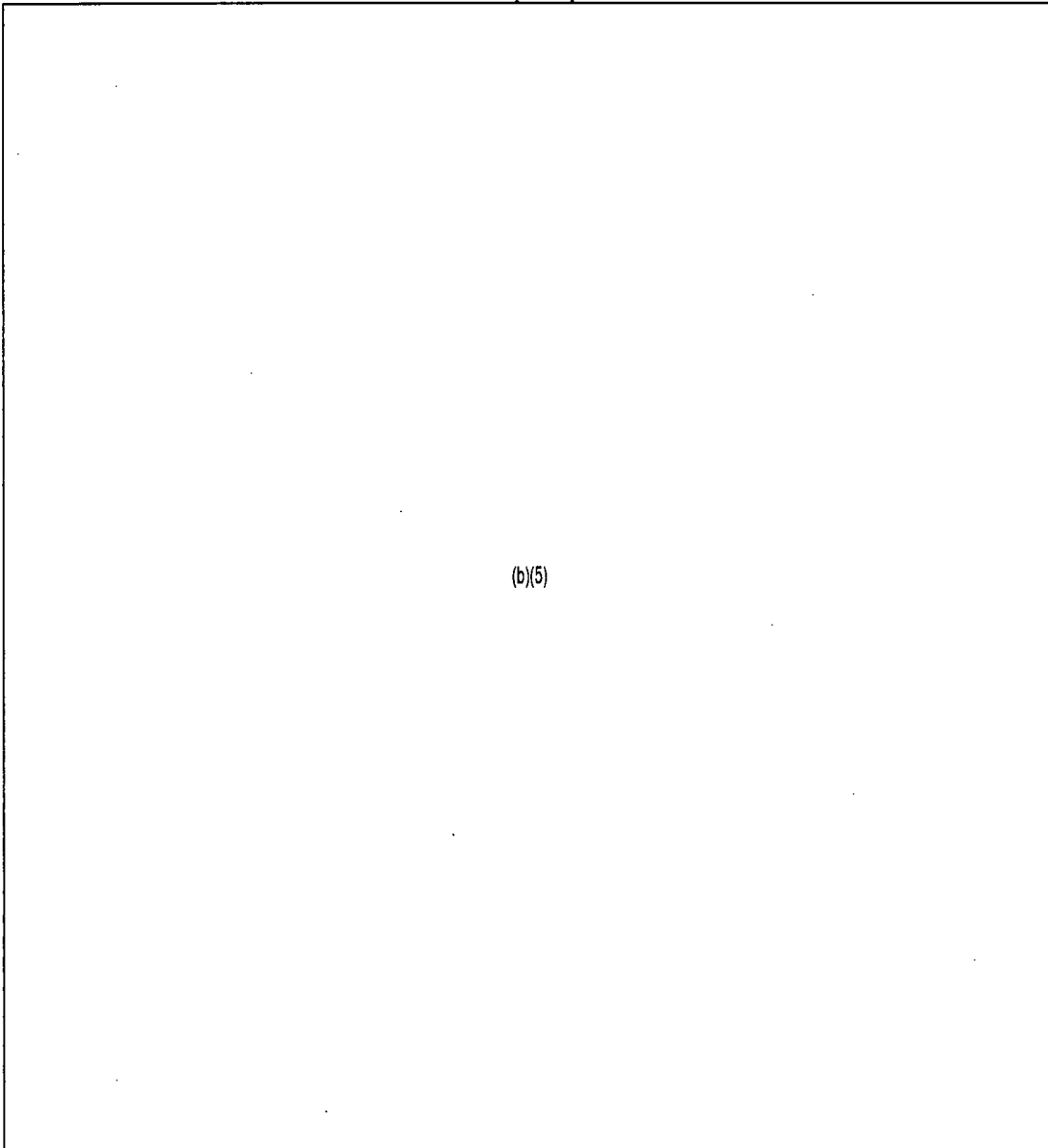


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ENERGY

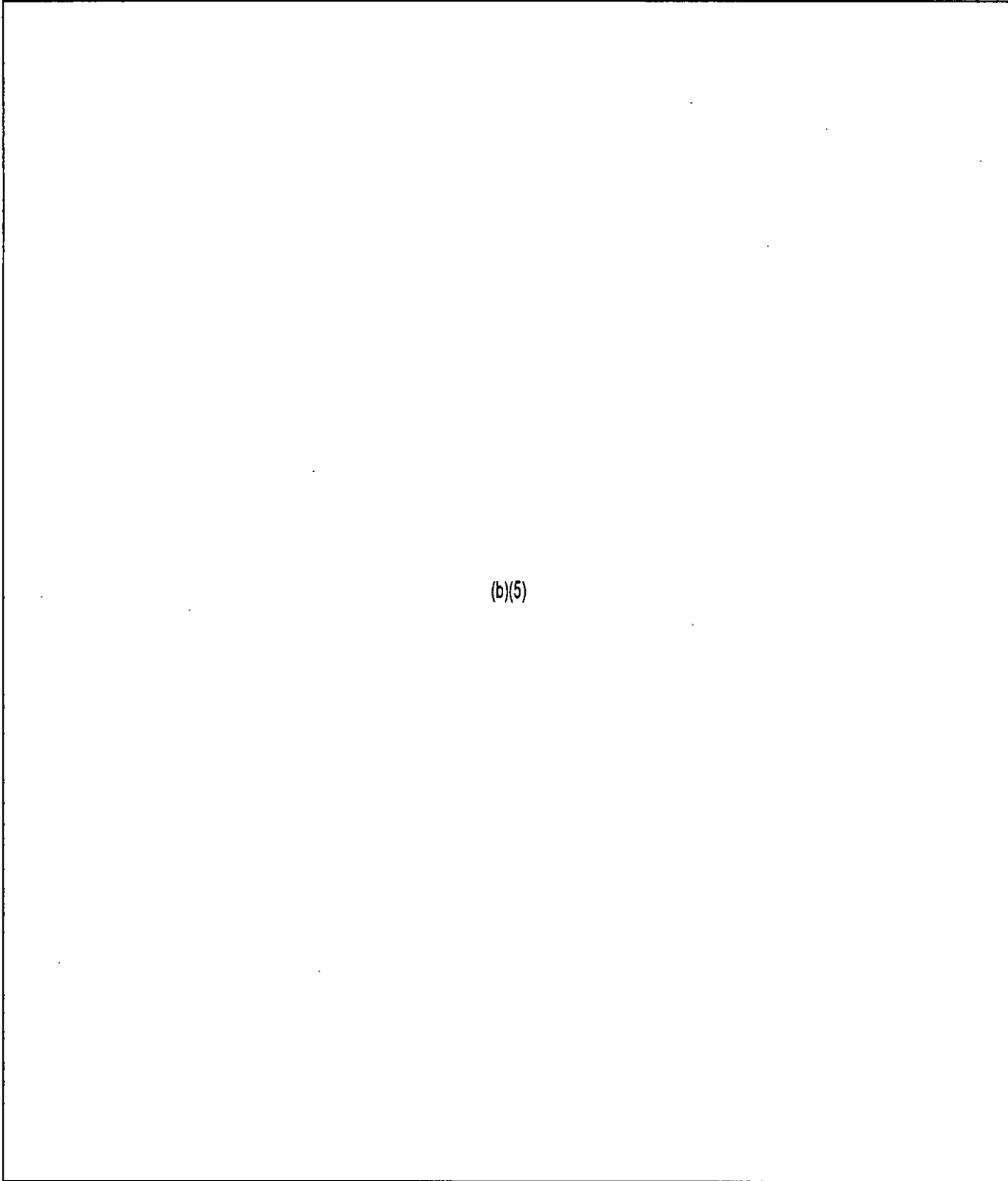
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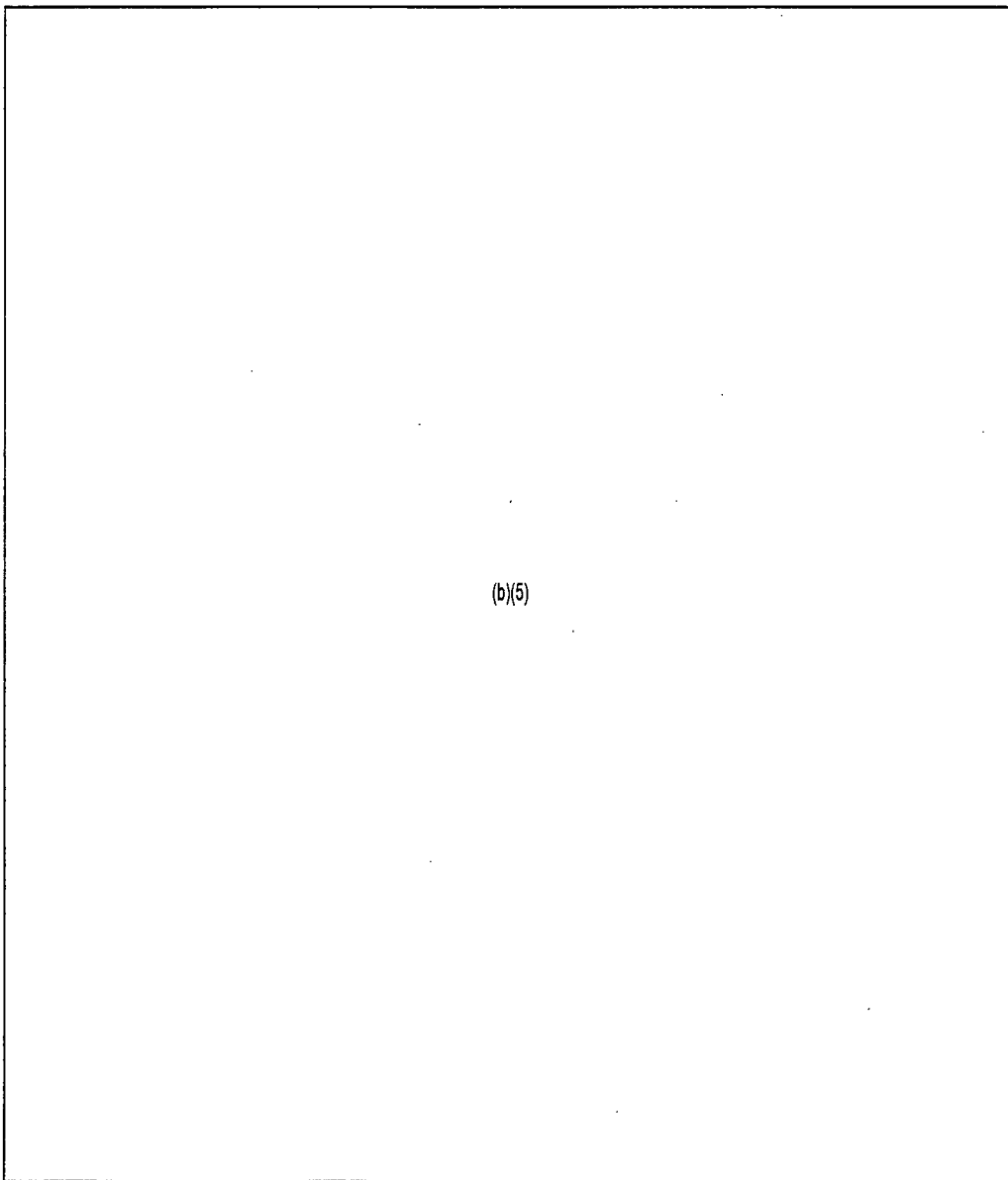


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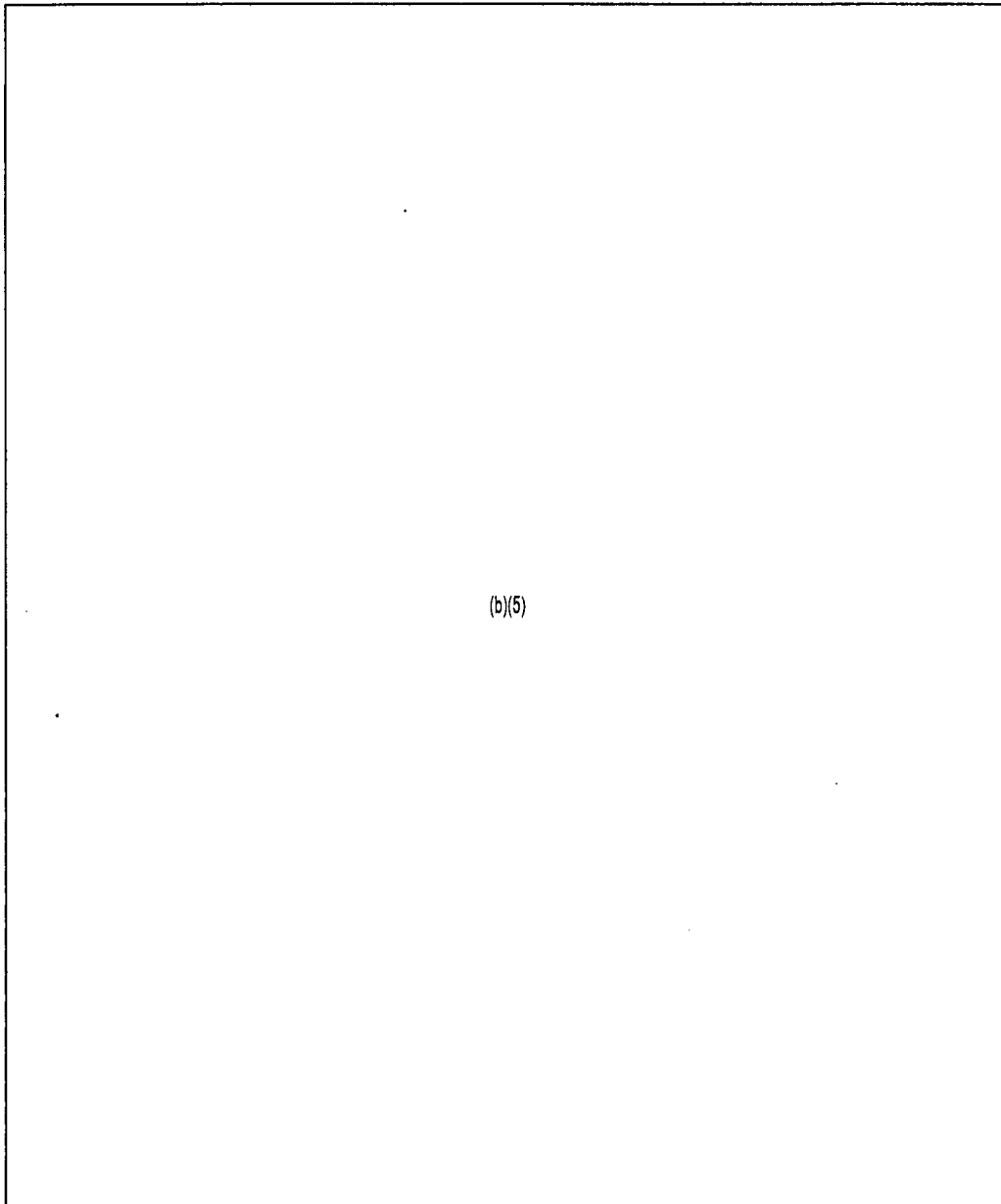
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ENERGY

Nuclear Energy

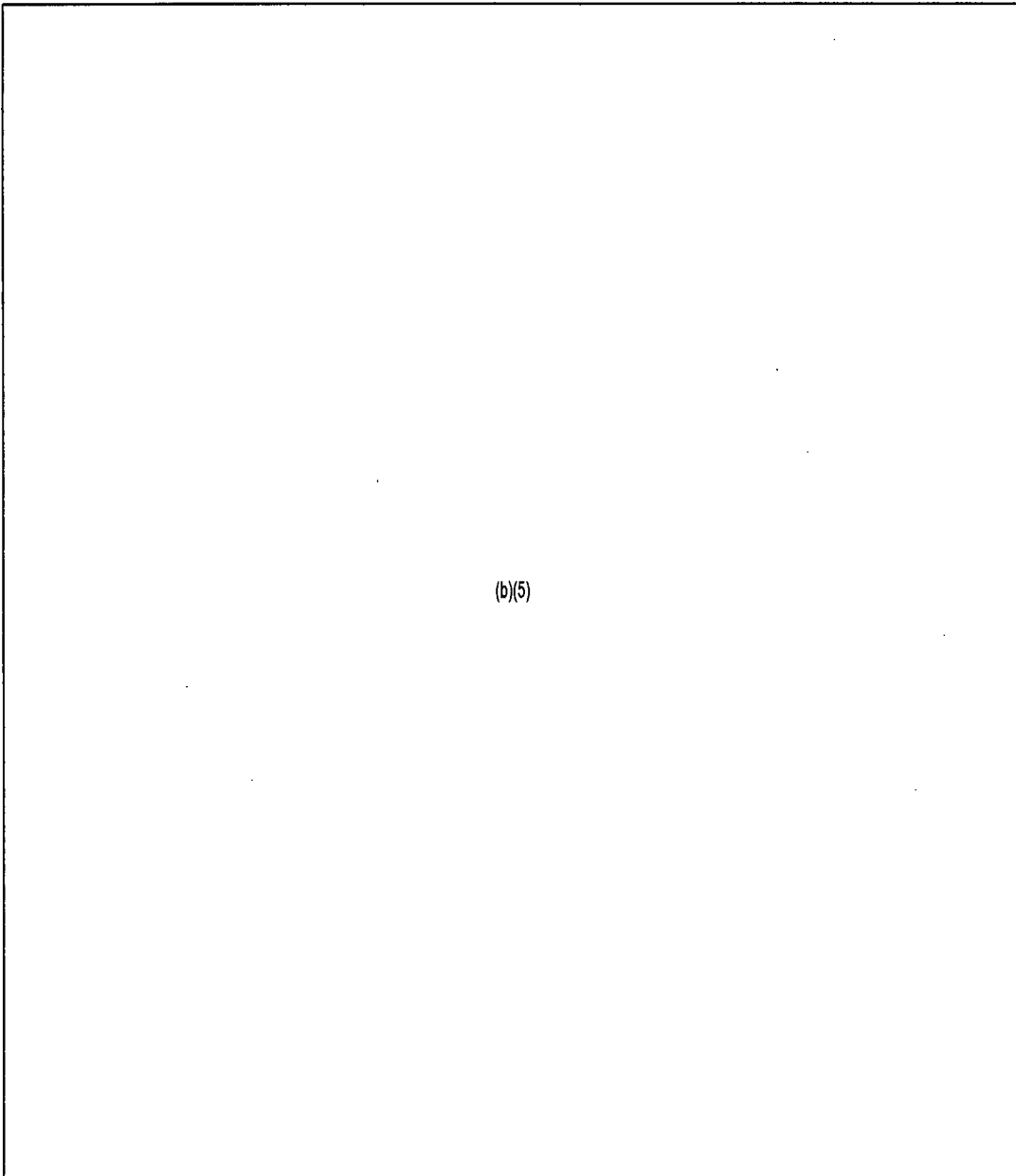


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ENERGY

Nuclear Energy

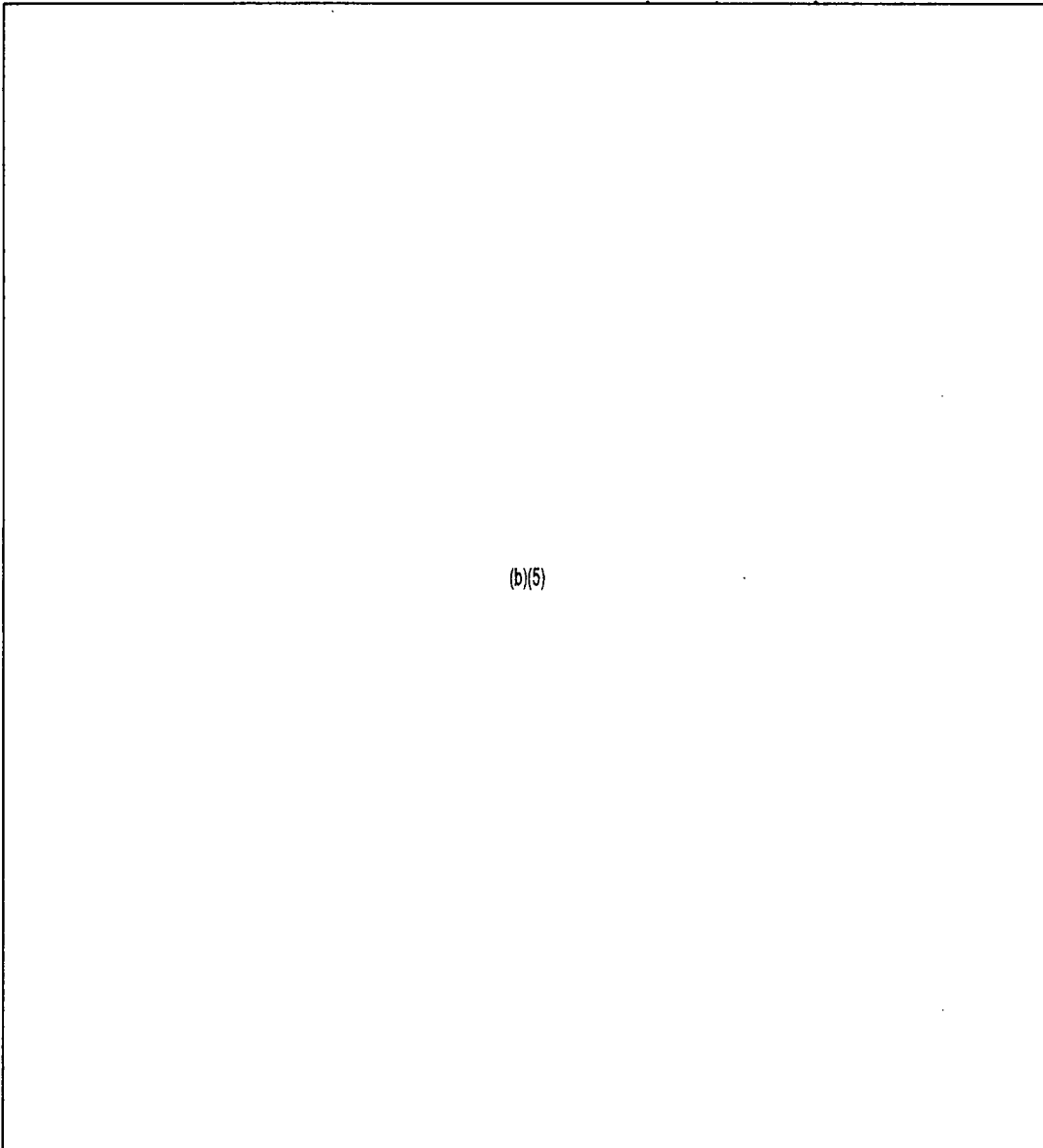


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ENERGY

Nuclear Energy

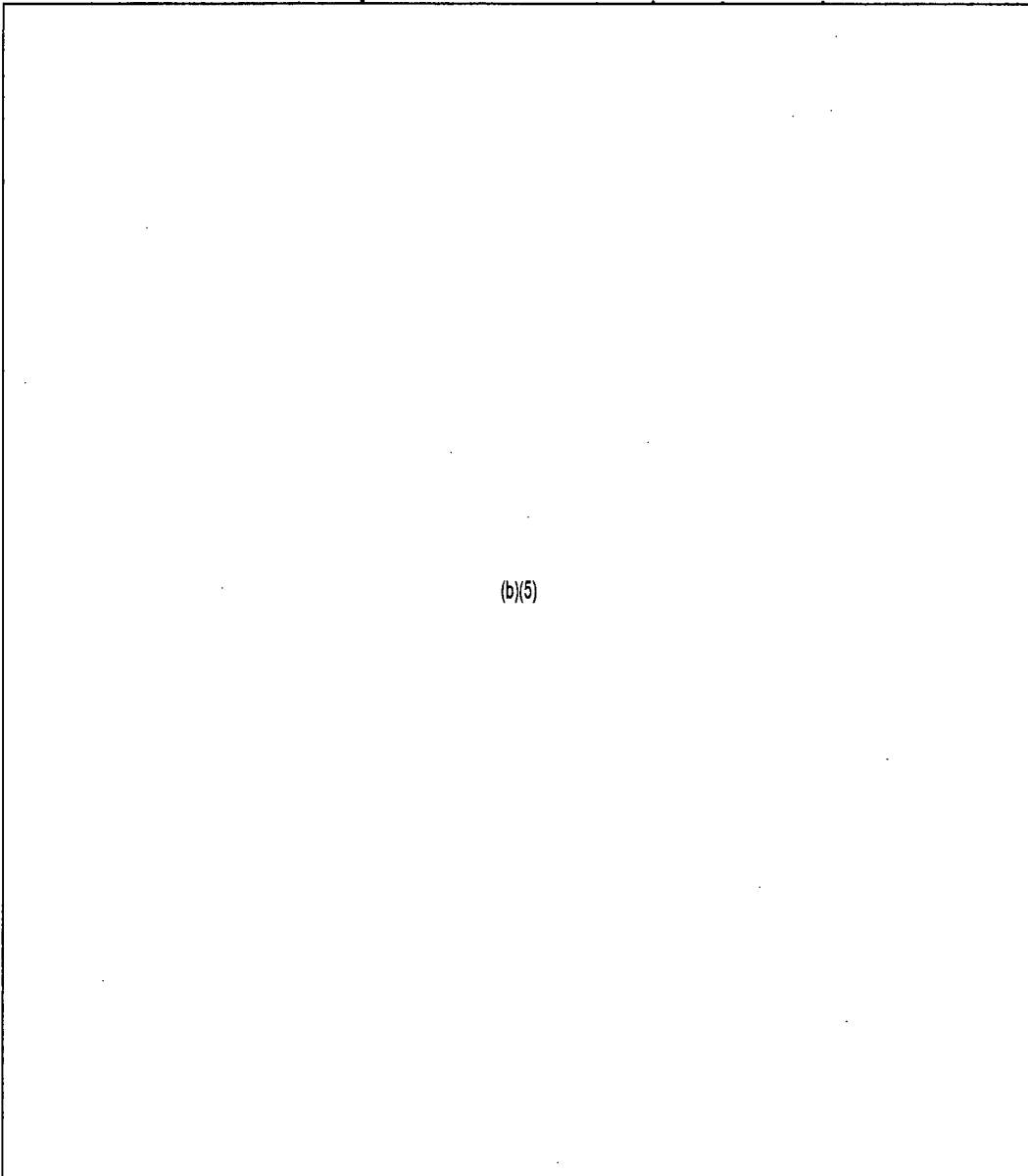


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ENERGY

Nuclear Energy



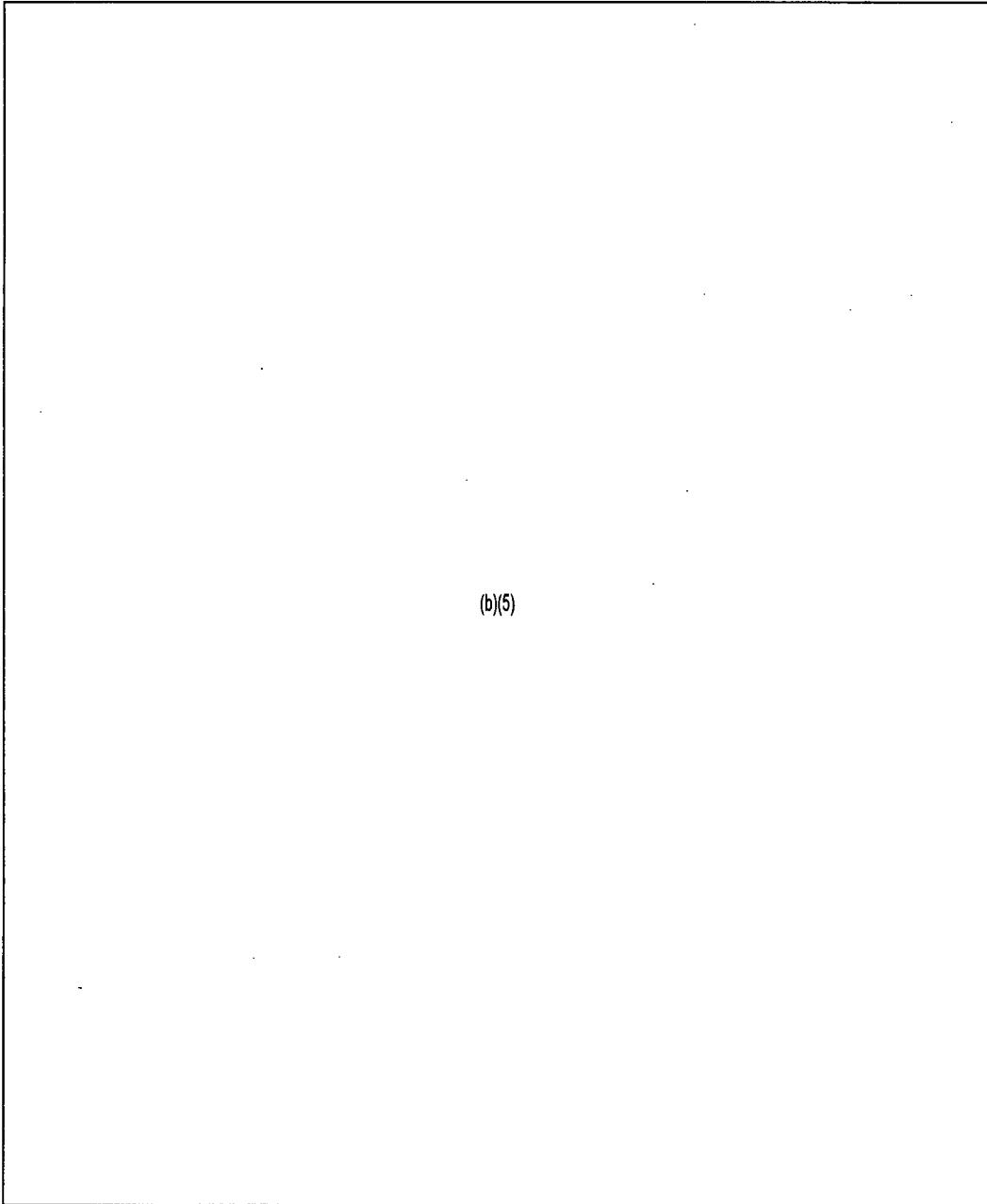
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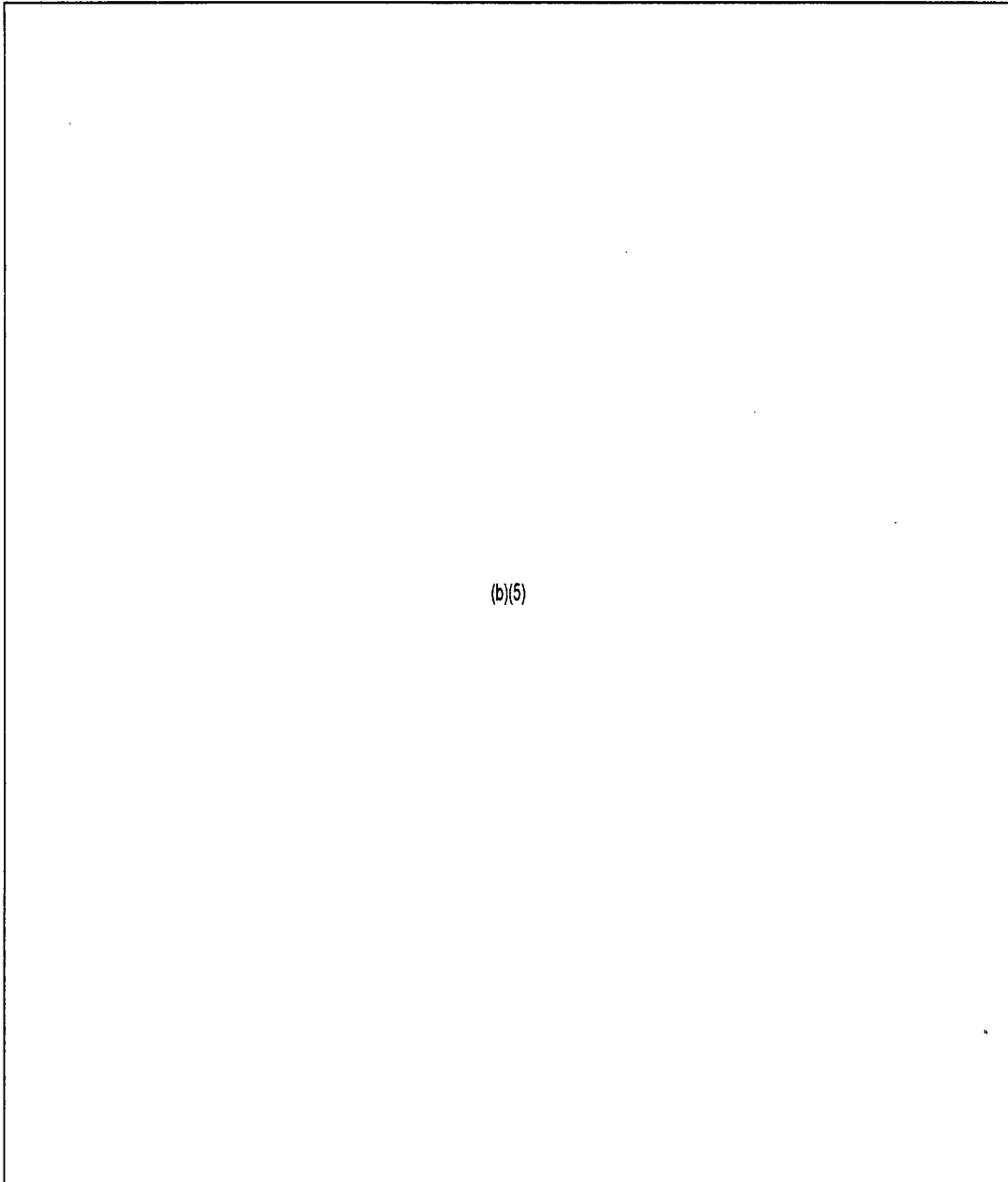
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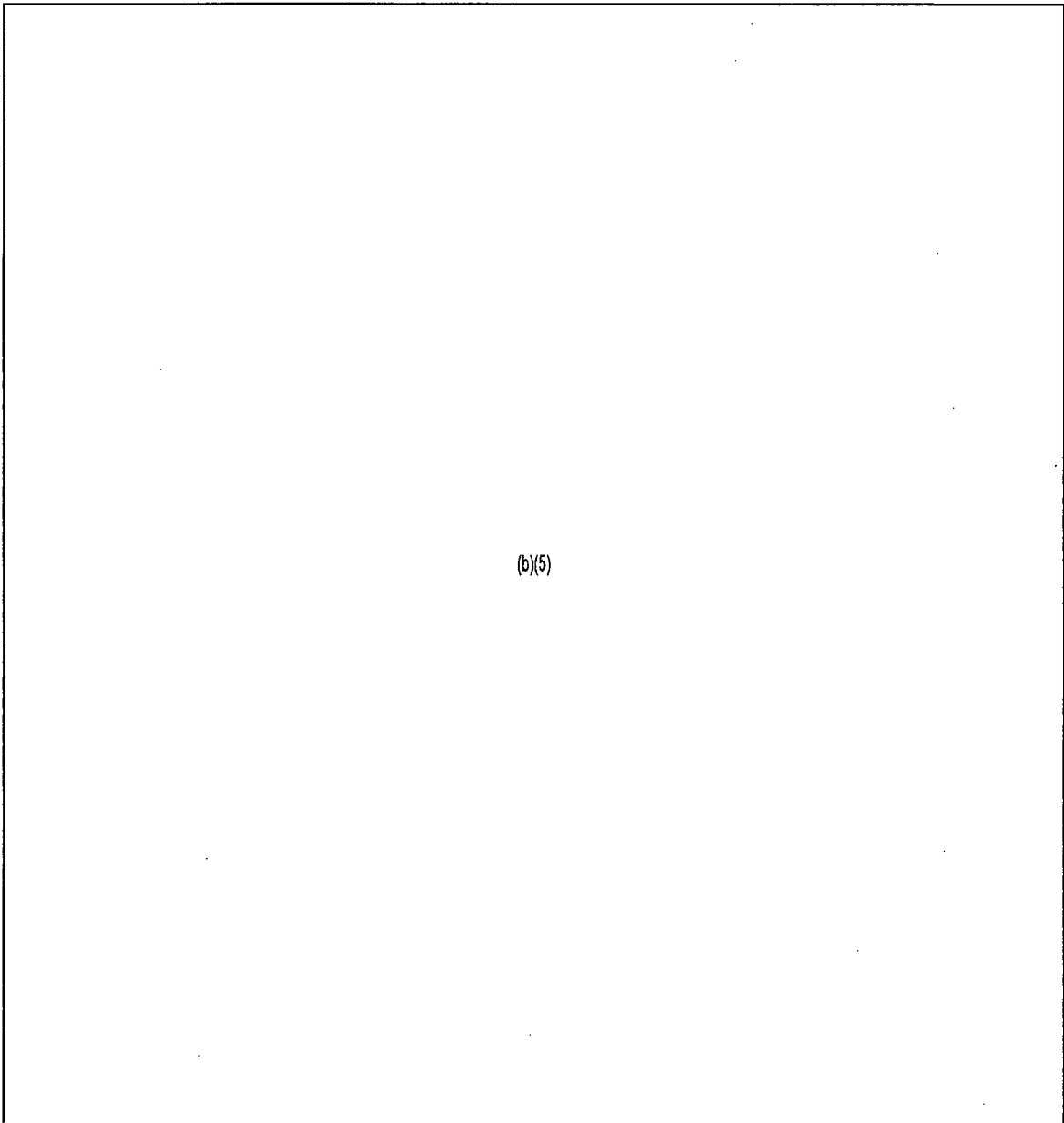


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ENERGY

Nuclear Energy

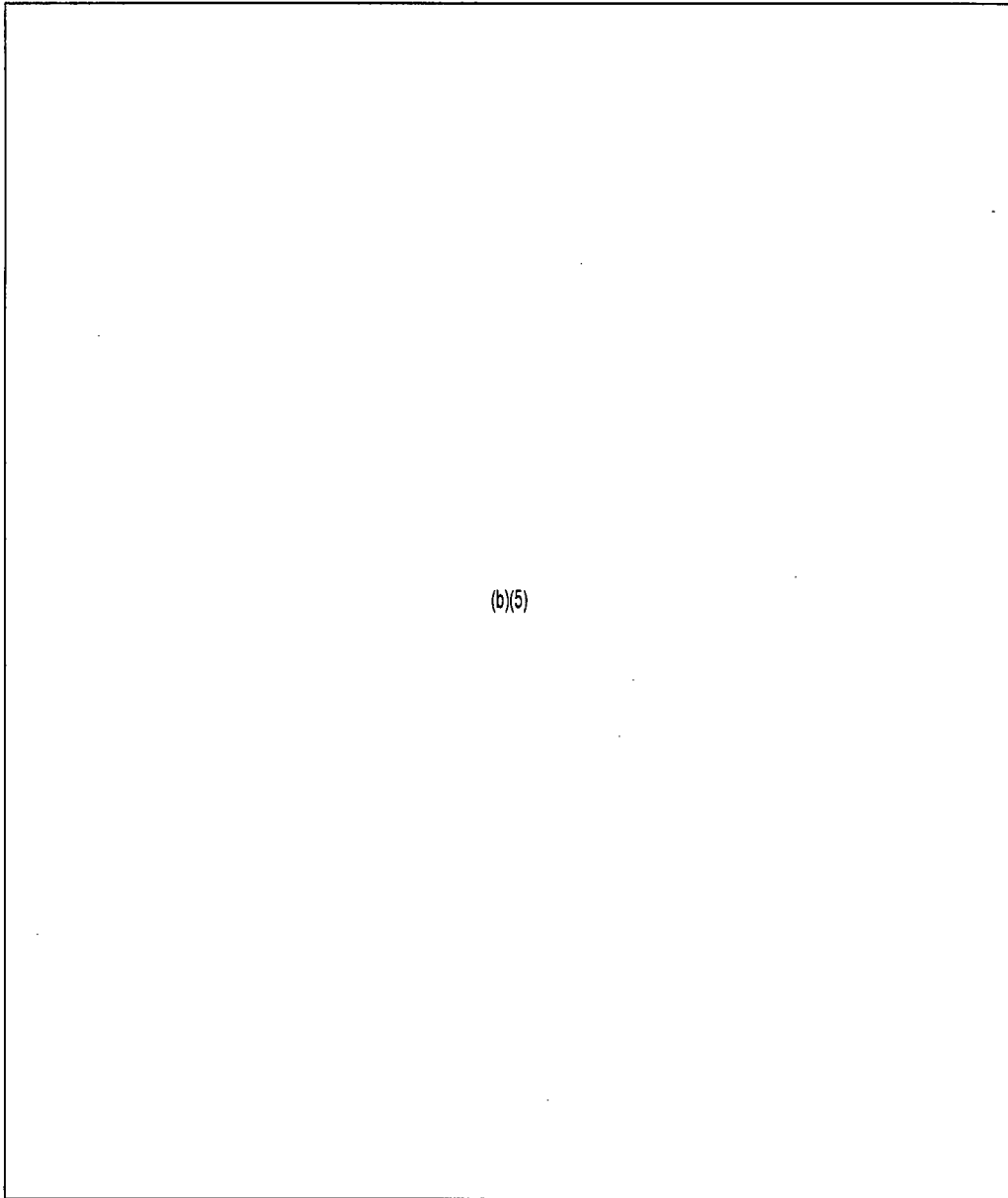


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Nuclear Energy

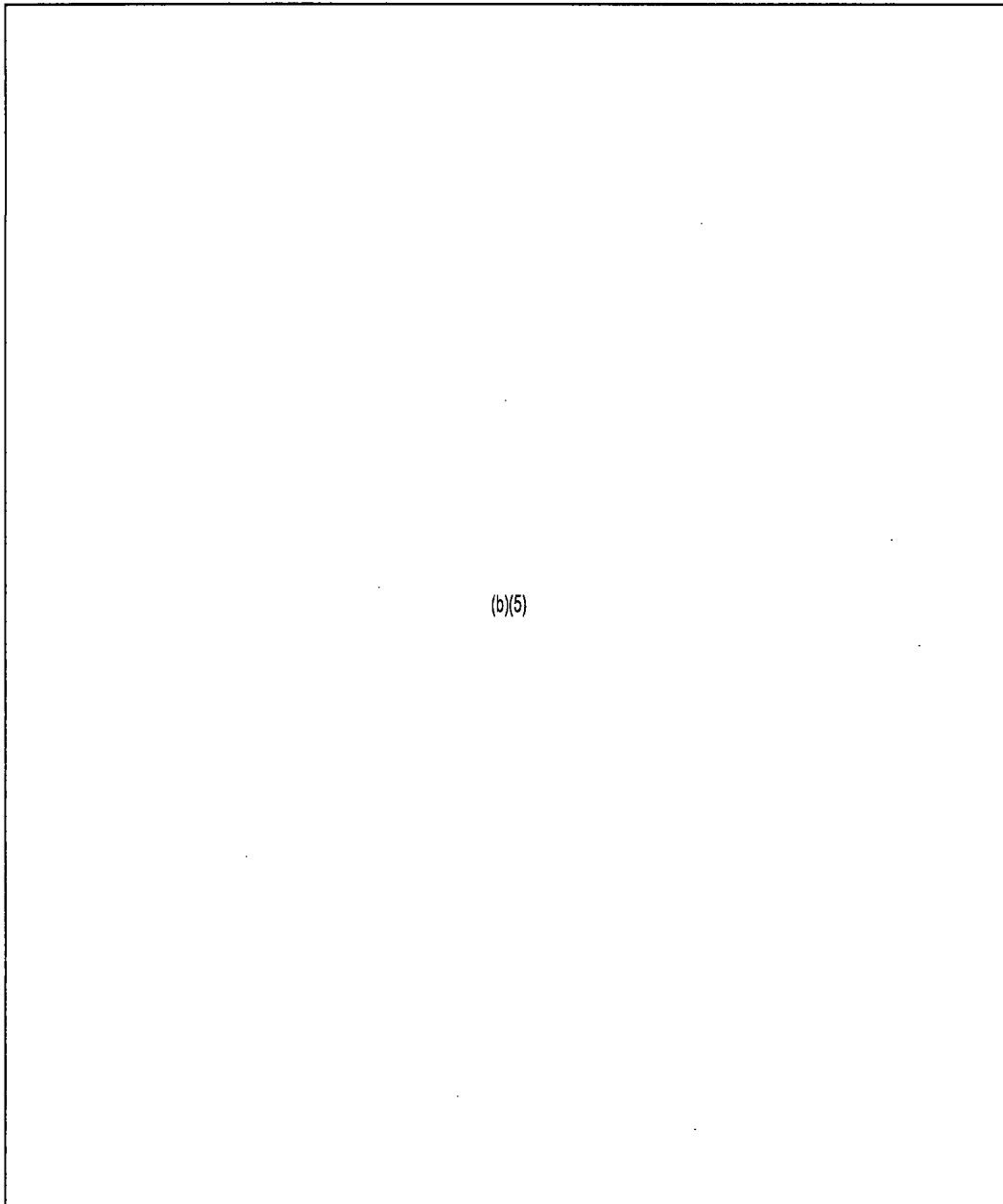


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ENERGY

Nuclear Energy

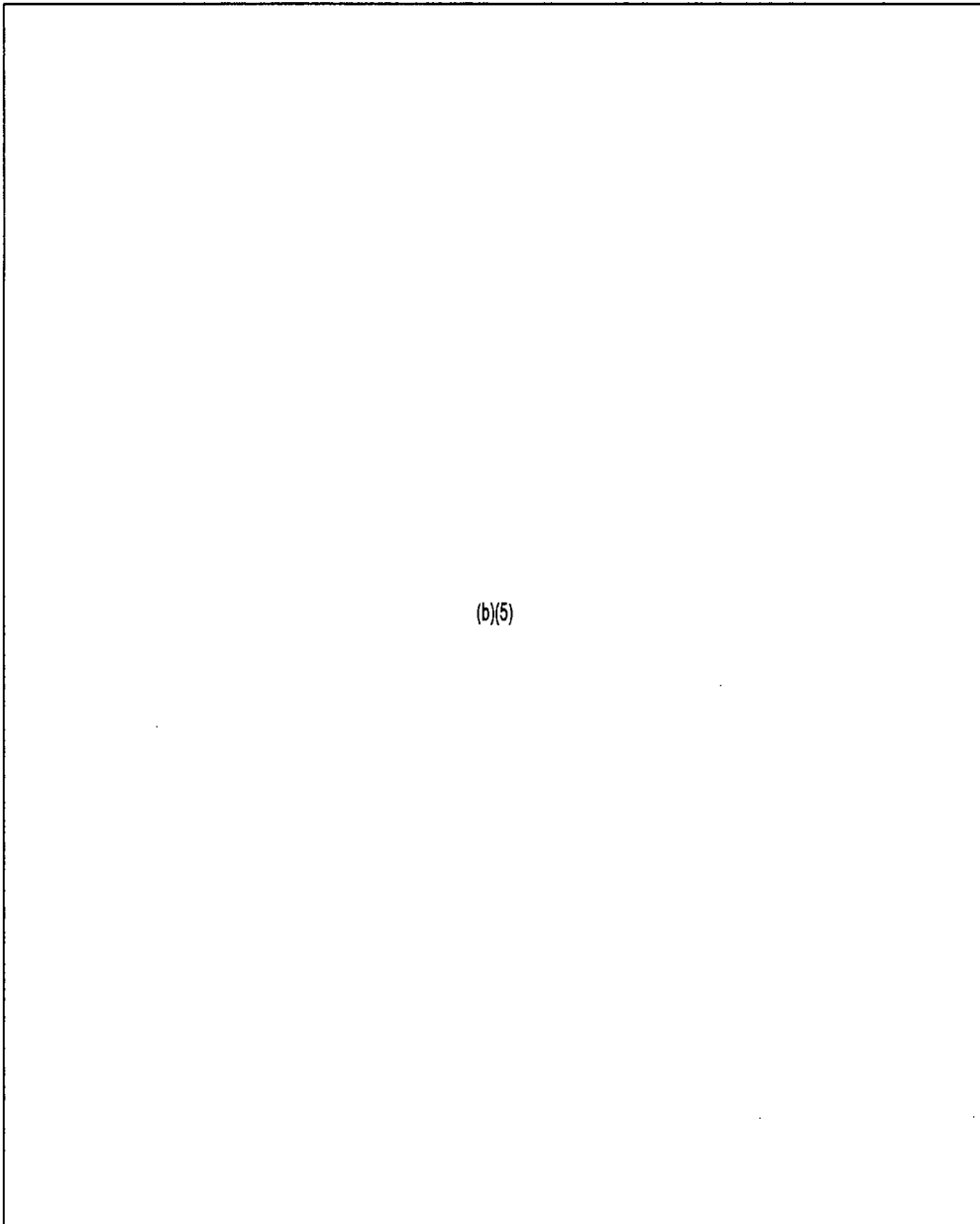


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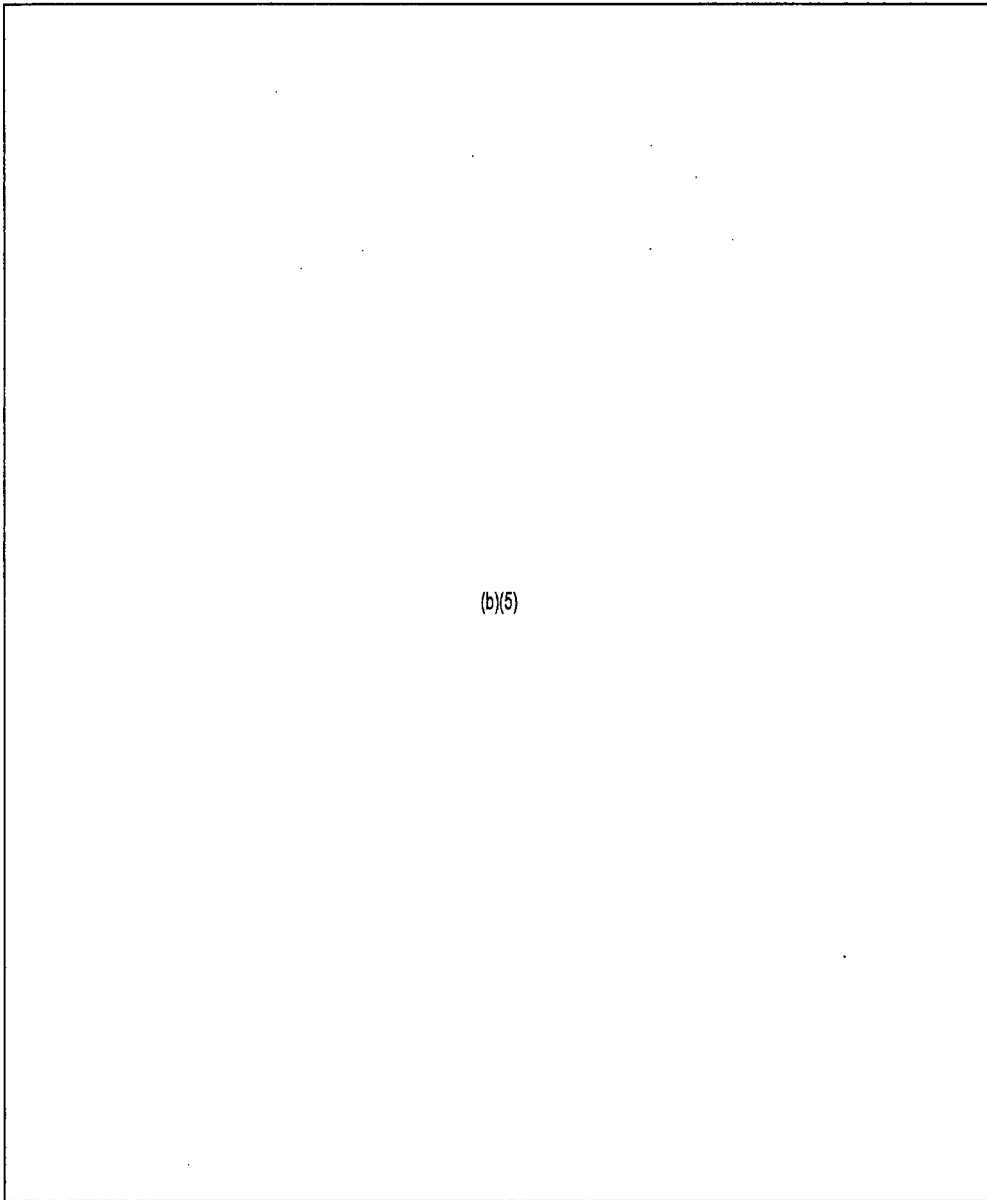
Nuclear Energy

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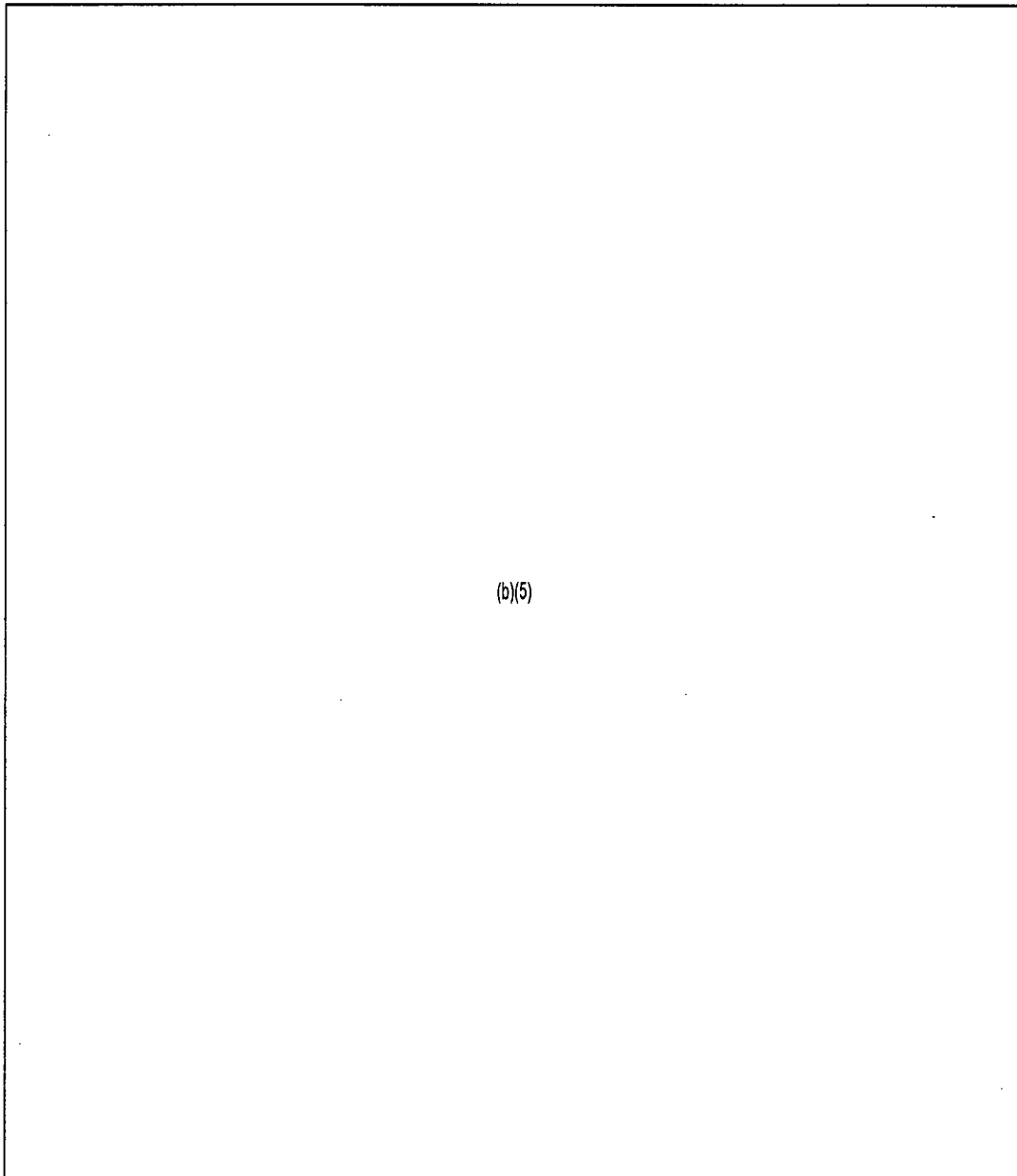
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Nuclear Energy

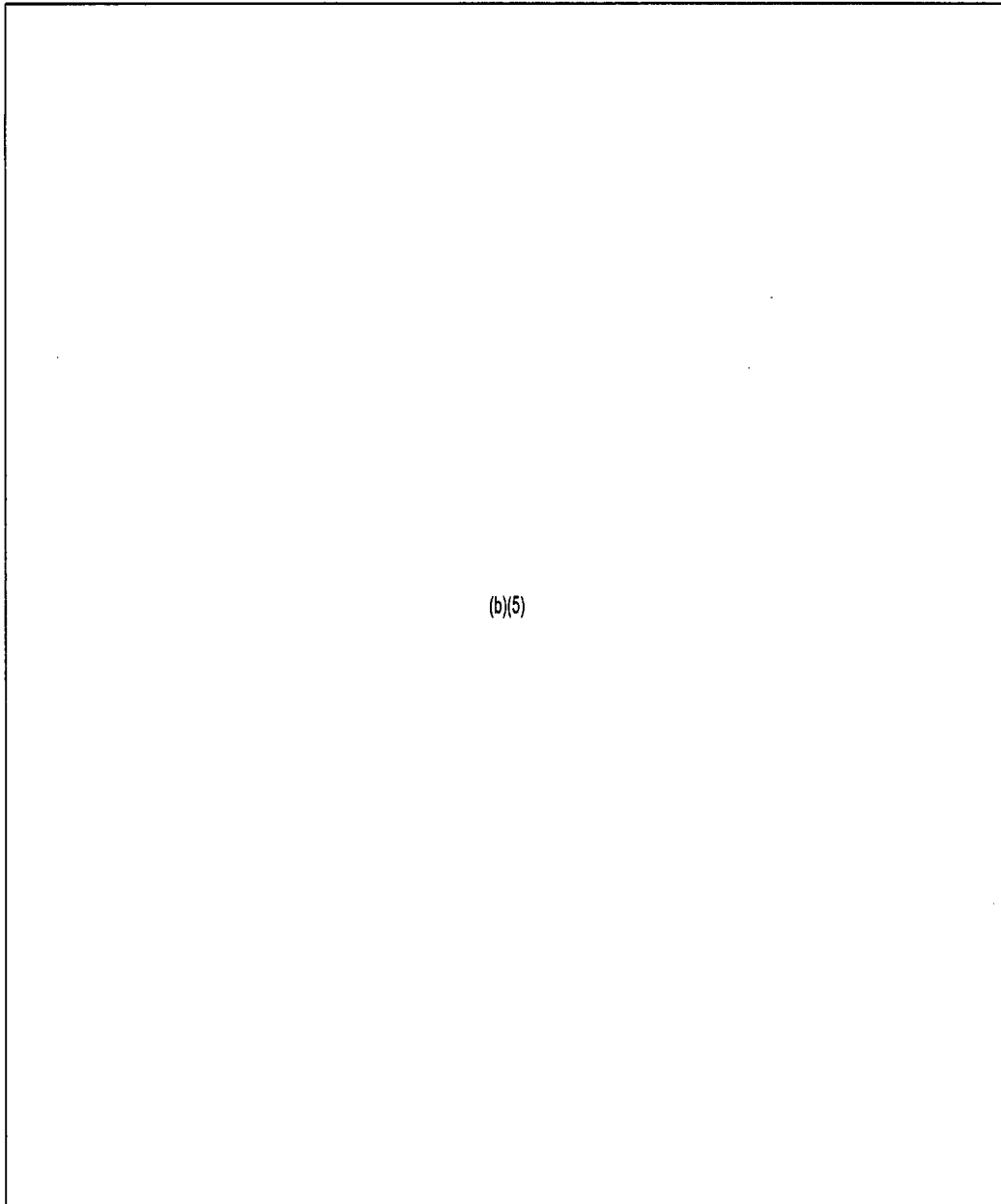


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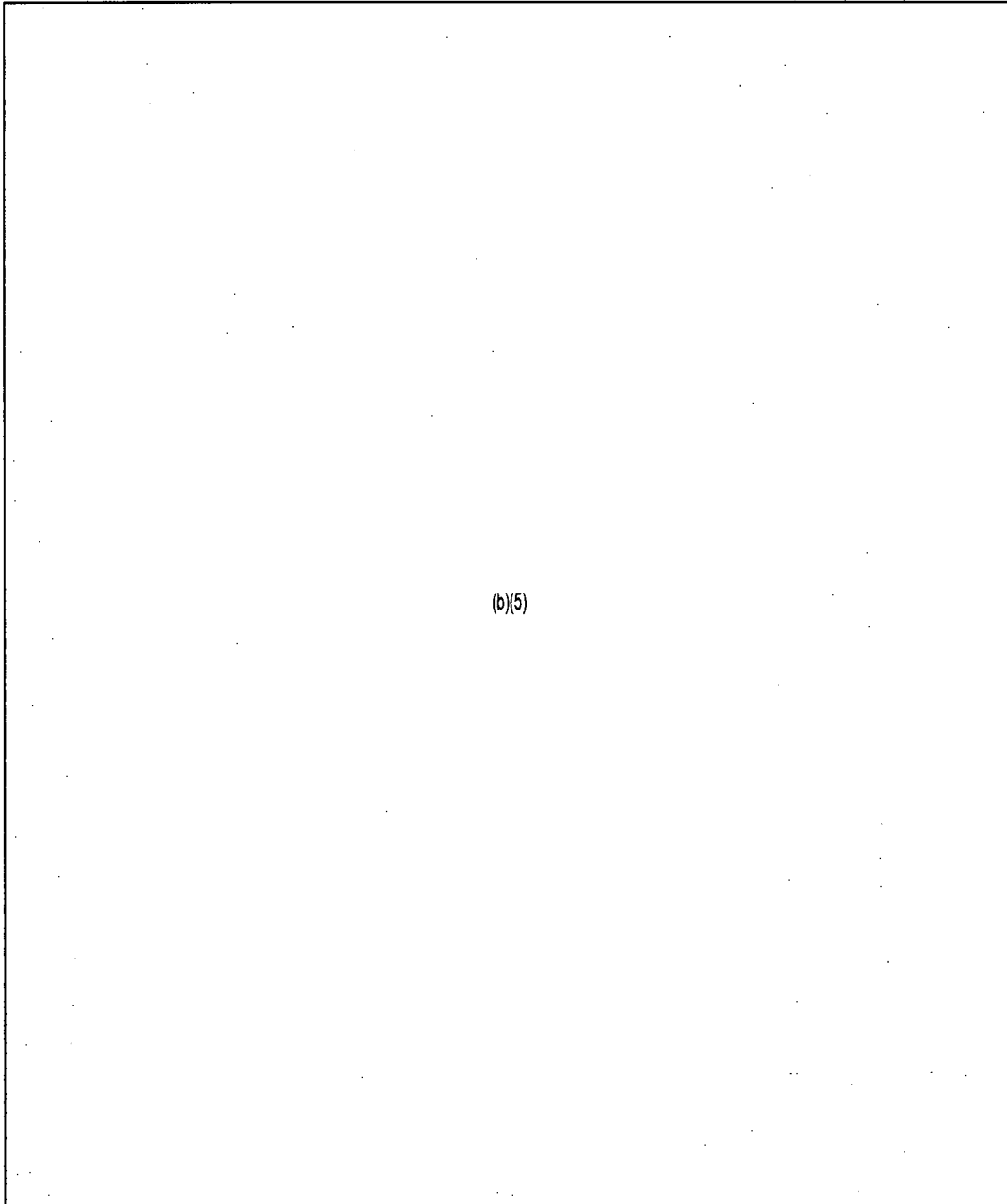
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Nuclear Energy

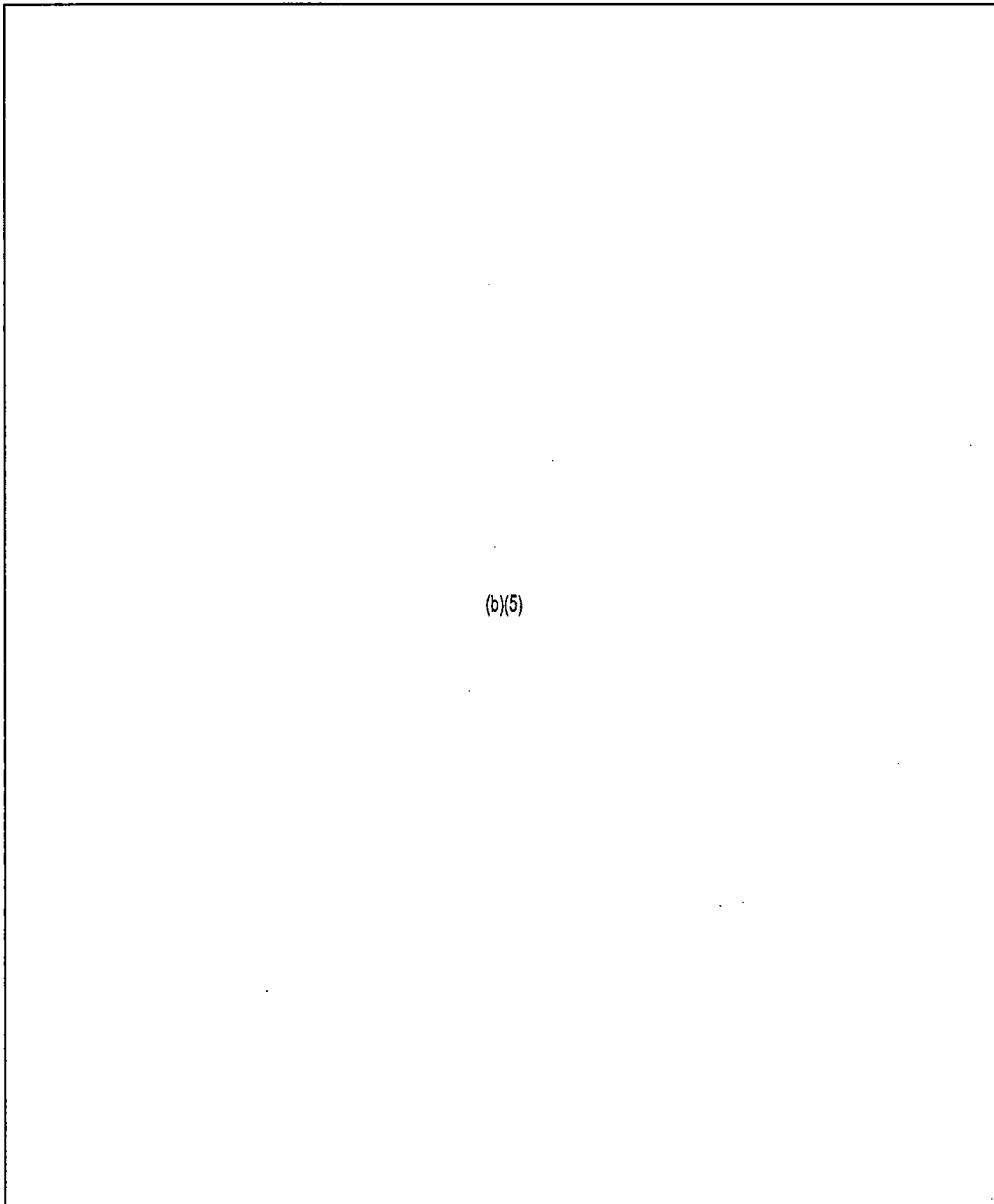


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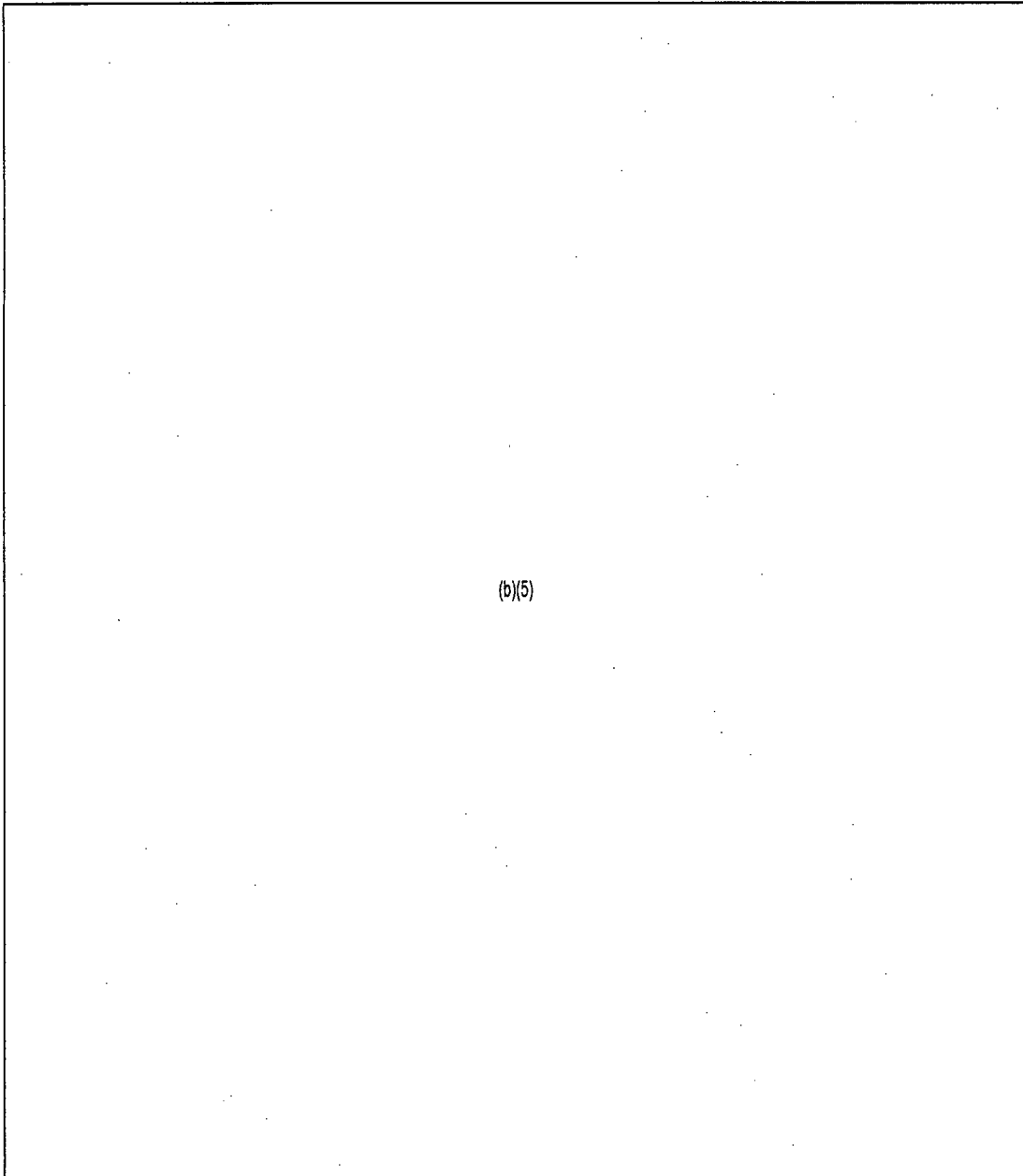


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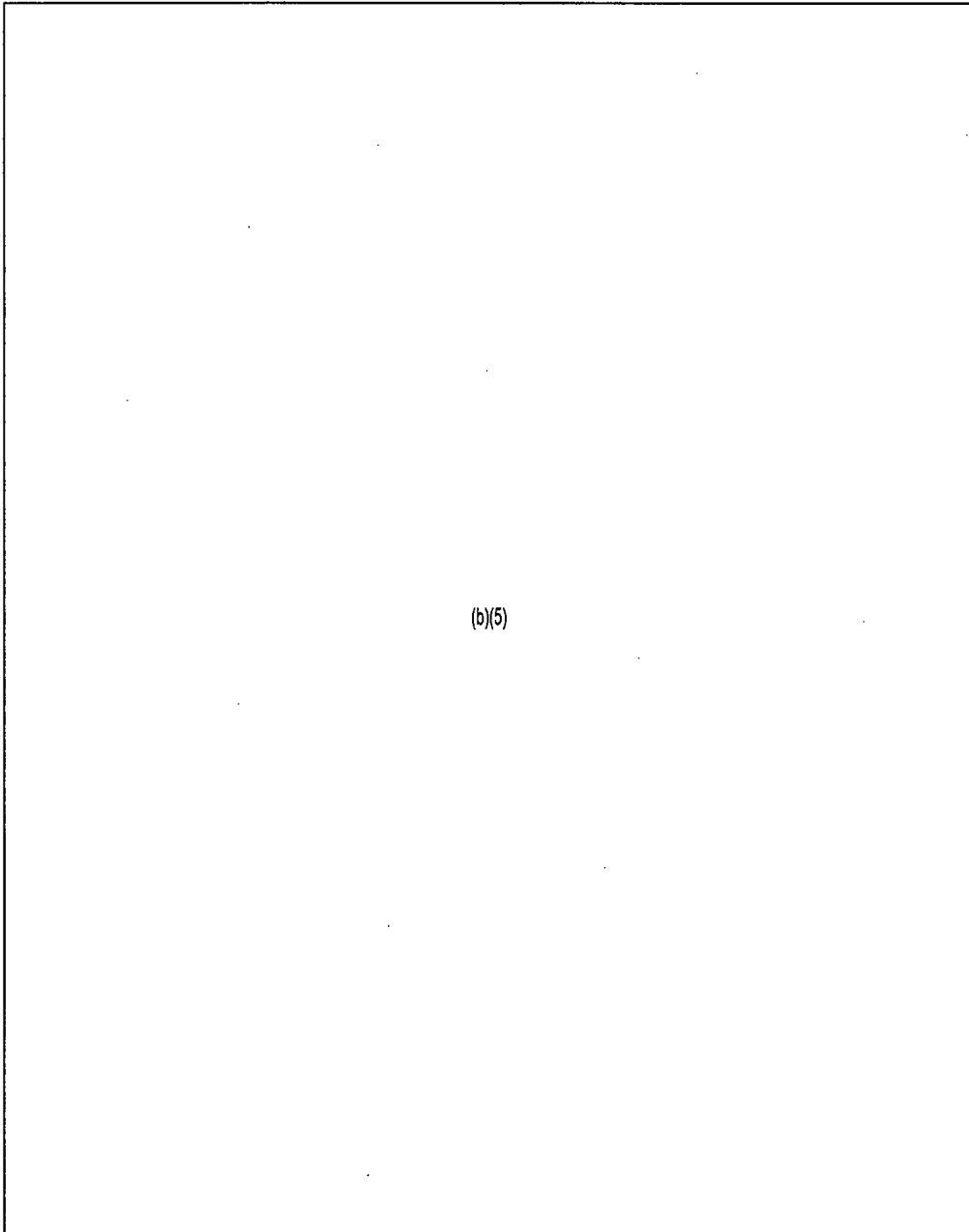
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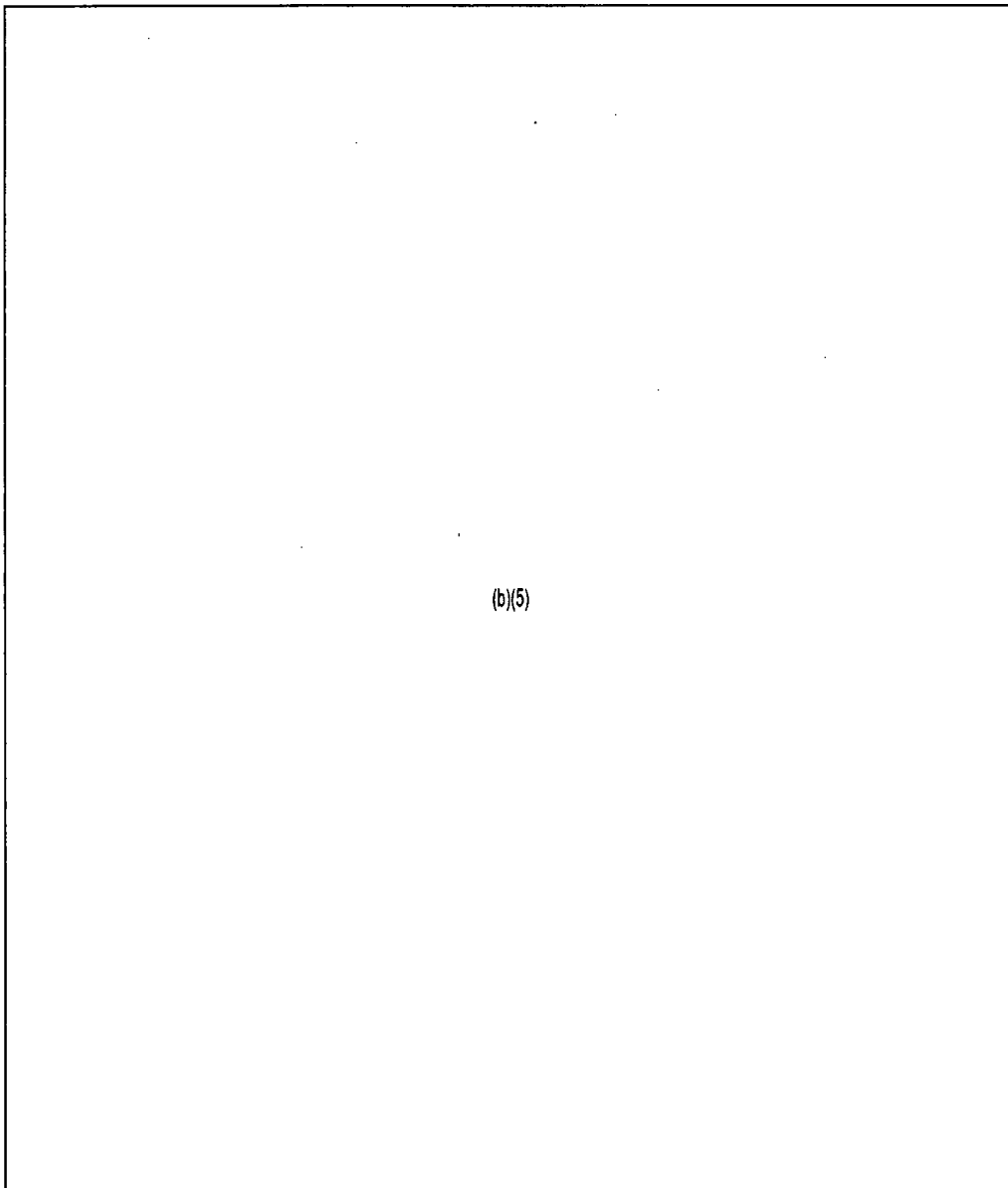


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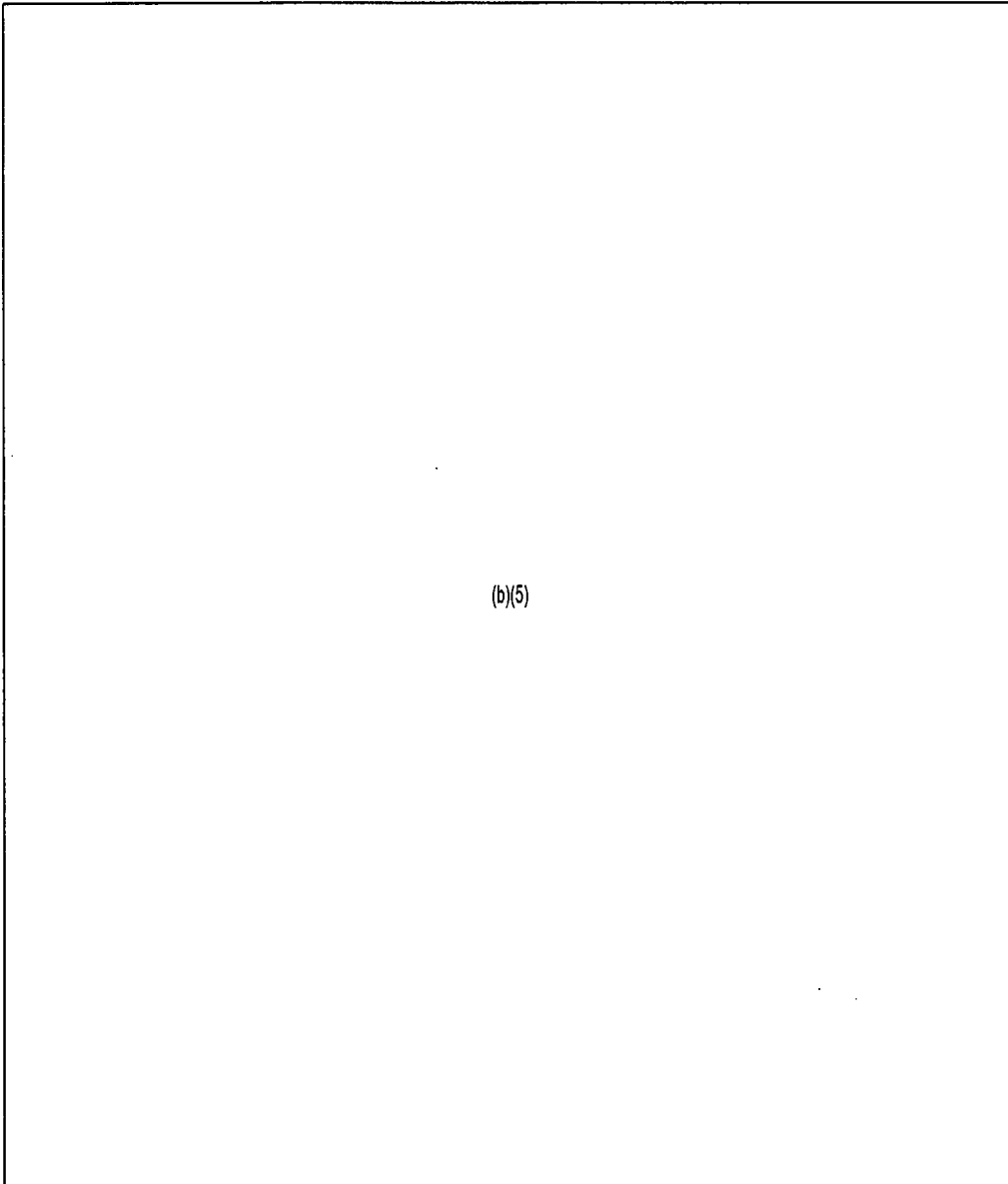


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Nuclear Energy

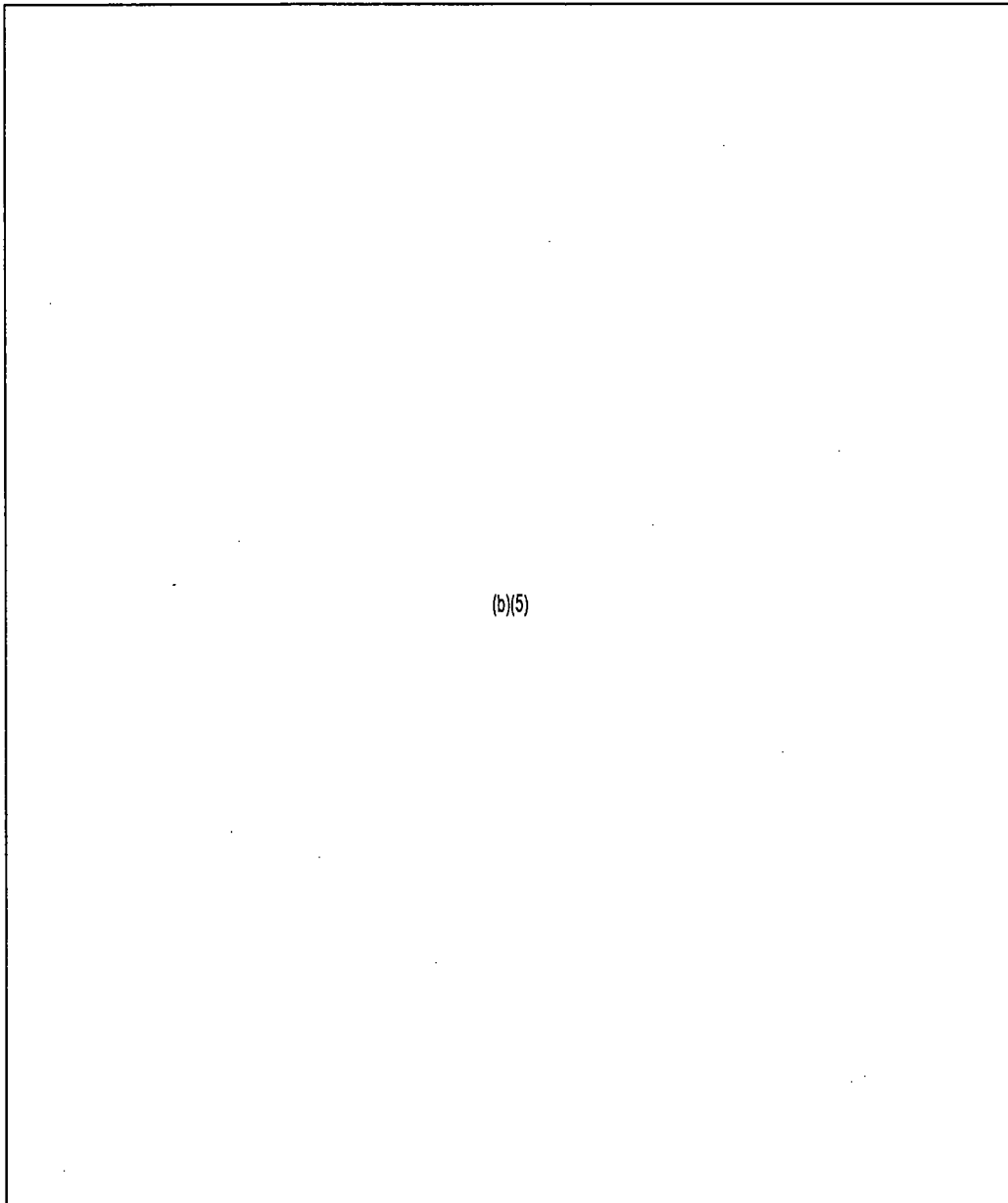


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Nuclear Energy

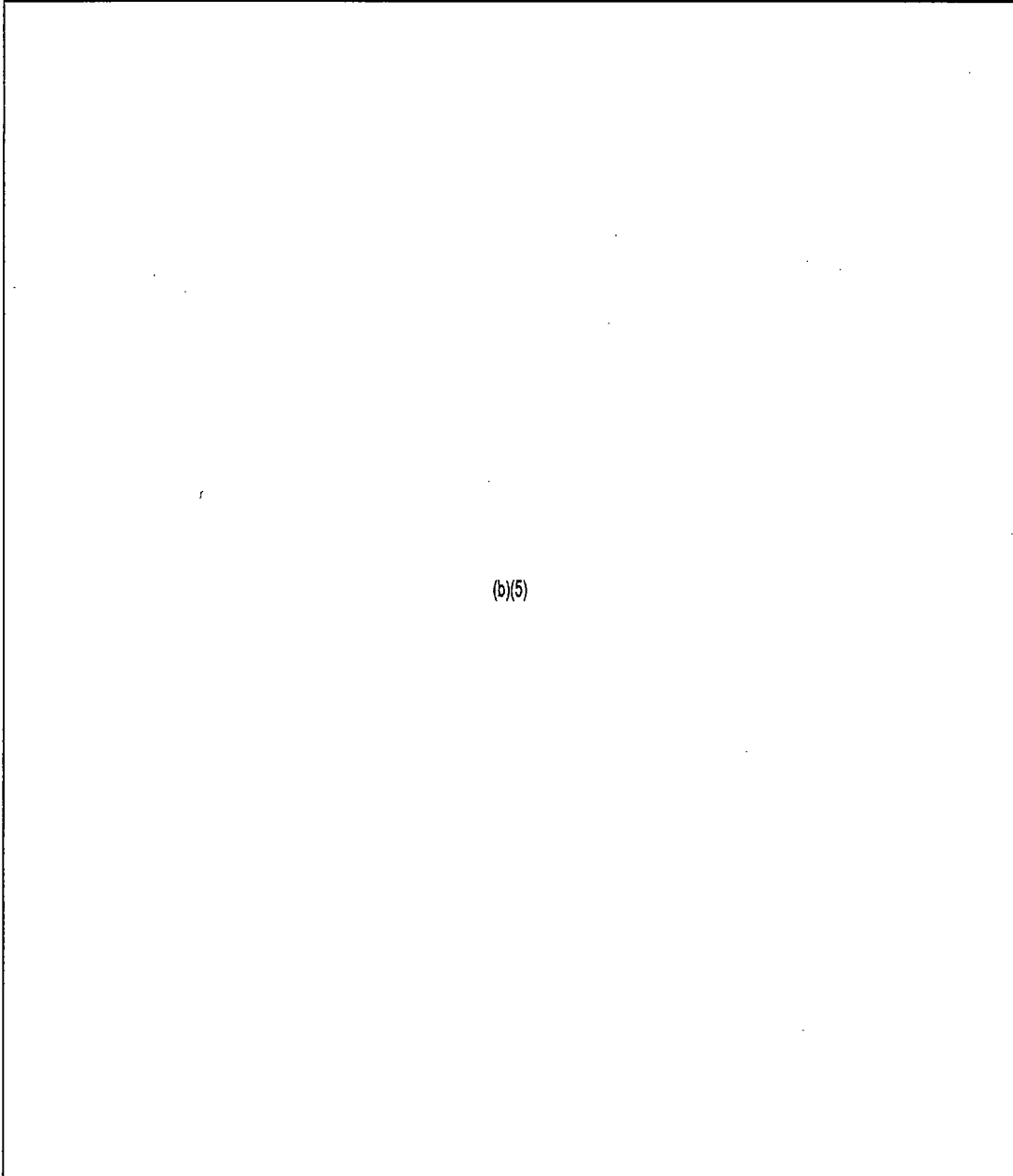


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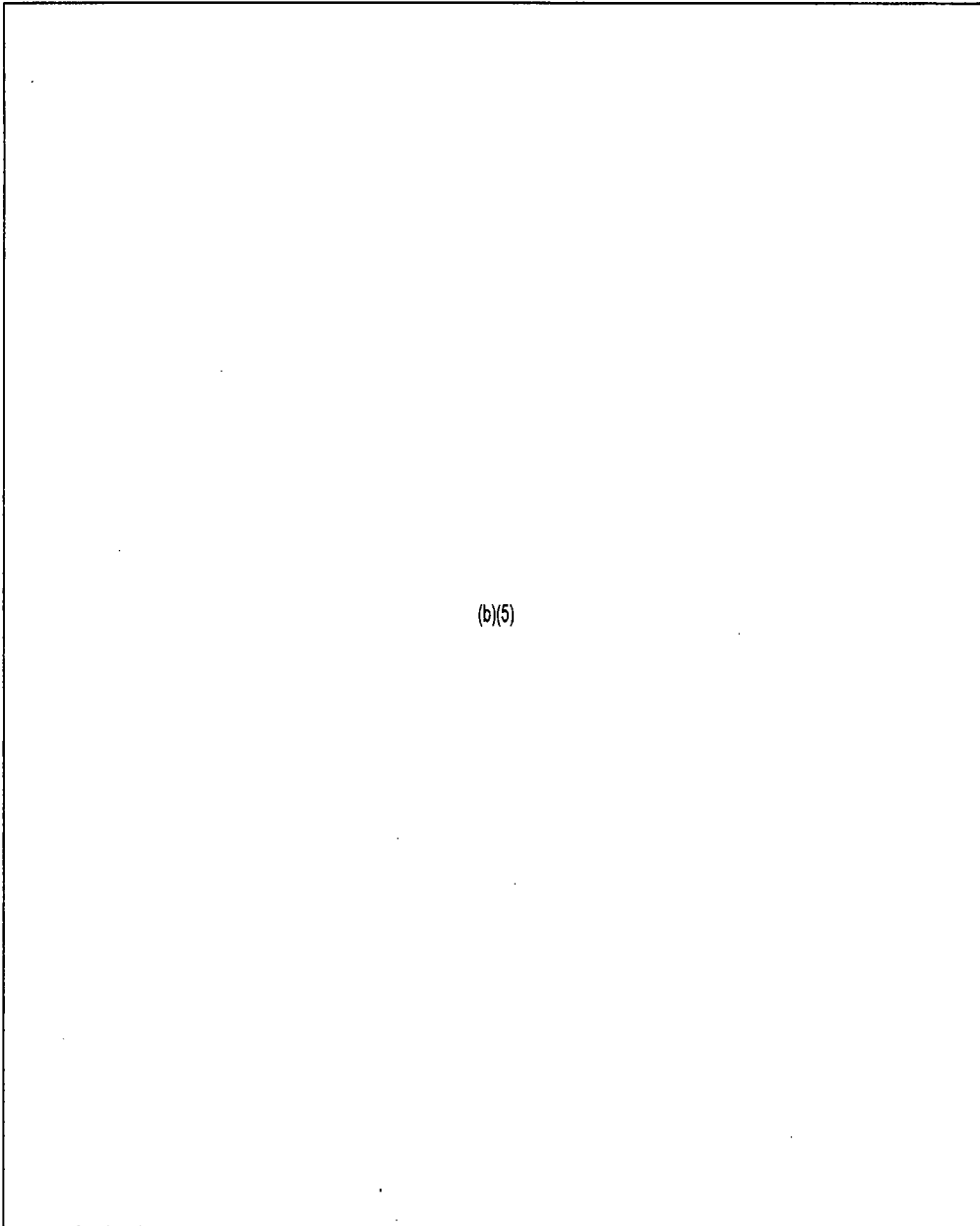


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ENERGY

Nuclear Energy

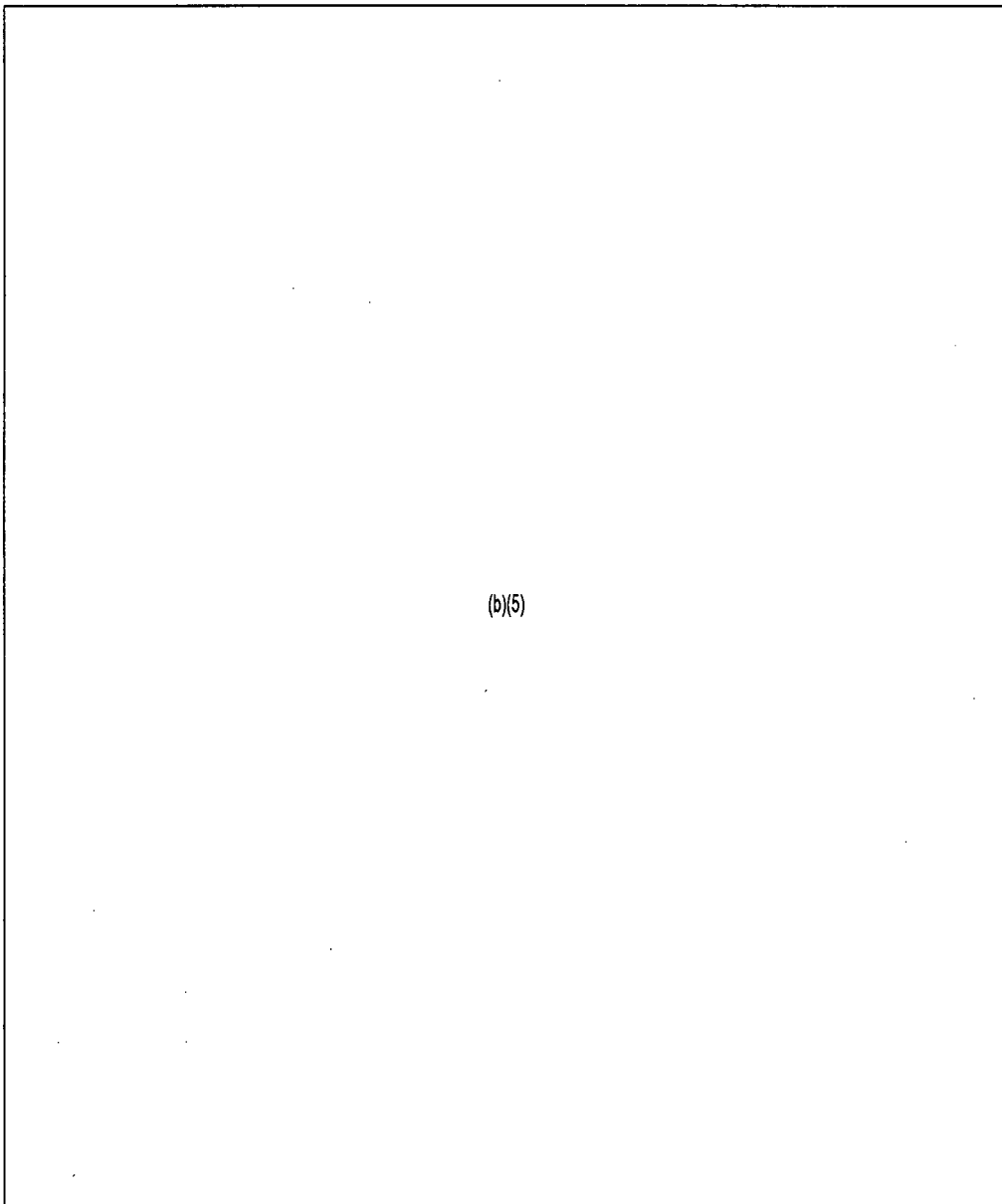


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ENERGY

Nuclear Energy



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Date: 3/23 0600	Information from Fukushima Units 1-4 – NISA is the Source of this Data				NRC Data Analysis Comments
Plant	Unit 1	Unit 2	Unit 3	Unit 4 (de-fueled)	
Reactor Vessel Flow Rate (gpm)	~ 79 gpm	No data	No data		Current flow rates are likely inadequate to remove decay heat.
Reactor Vessel Level Below TAF (feet/inches)	~ 5 feet 8 inches	~ 4 feet 4 inches	~ 6 feet 10 inches		Level instrumentation is suspect – reference legs may be less than full.
Reactor Vessel Pressure (psig)	~ 42 psig	~0 psig	~ 5 psig to 0 psig		Instruments U3 are not tracking together. Zero reactor pressure would not be an expected indication if the reactor is at saturation conditions.
Reactor Vessel Temperature	752 F (above crit. temp.)	221 F (17 psig)	513 F (770 psig)		Lower plenum temperature – do not correlate to vessel pressures – suspect data
Drywell/Suppression Pool pressure (psia)	~ 36 psia	~ 15.9 psia (virtually no pressure in dw)	14.5 psia (no pressure in dw/sc)		There is virtually no indication of pressure in U2/U3. If containment were intact – expectations would be for containment to be pressurizing.
Containment Venting	Unknown	Unknown	Unknown	Unknown	Based on visual observations – unit 2/3 containments may be venting steam out of the primary containment.
CAMS D/W	4600 R/hr	5200 R/hr	6050 R/hr	N/A	
CAMS S/C	3160 R/hr	180 R/hr	175 R/hr	N/A	
Spent Fuel Pool Level	Level Unknown	Level unknown	Level unknown	Level unknown	
Spent Fuel Pool Makeup		Water added via normal injection 3/22	Water added via overhead spray 3/22	Water added via overhead spray 3/22	TEPCO plans to do a helicopter flight over the U3/4 SFP on 3/23 to confirm SFP status.
Spent Fuel Pool Temp.	No data	124 F	No data	No data	Reasonable SFP temperature

The Request to the US Government from the Government of Japan

25 March 2011

1. conduct of aerial survey (for AMS measurements) (sharing of the data and its analysis) [MEXT, NSC, NISA]
2. provision of radiation monitoring devices on the ground (mobile and stationary type) [MEXT, NSC, NISA]
3. conduct of the simulation by the radiation diffusion model (comparison with the SPEEDI simulation by the Japan side) [NSC, MEXT] –
4. provision of the germanium semiconductor detectors (for measuring the extent to which water and foods are exposed to radiation) [MEXT, NISA]
5. provision of robotic devices (for monitoring) [METI, NISA, MOD]
6. provision of robotic devices (for rubble removal) [METI, NISA, MOD]
7. provision of the data (image, level of radiation) obtained by UAVs [MOD, MOFA]
8. provision of unmanned helicopter (K-MAX) [MOD, NISA, MOFA]
9. provision of the carriage of fresh water by barges and provision of the water supply pumps for the water [MOD, NISA, MLIT, JCG]
10. provision of high-quality pumps and hoses [NISA]
11. provision of the sets of protective body armors, radioactive survey meters and individual dosimeters, radioactive measuring instruments, masks for iodine adsorption, and separation materials (quantity specification to be discussed later) [NISA, MOD]
12. provision of iodine preparation (iodide of potash) (quantity specification to be discussed later with due consideration of US offer of 1 million bottles) [NISA, MHLW, MOFA]
13. provision of extinguishant / coolant [NISA]
14. provision of plastic bottles of drinkable water for the infant / baby use [MHLW]

We (GoJ) would like to request further information from US Government on the following items

to further consider the request from the government of Japan Menu/technical specs

1. UGVs (unmanned ground vehicle) [MOD, METI]
2. technical support regarding the radiation technology, nuclear technology and its effects on human health [MOD, MHLW]
3. medical triage related to the exposure to radiation [MOD, MHLW]

*The underlined agency (e.g. MOD) is expected to play a leading role for each request item.

NRC INSPECTION MANUAL

DIRS

Change Notice 11-006

DELETED:		TRANSMITTED:	
<u>Number</u>	<u>Date</u>	<u>Number</u>	<u>Date</u>
1. IP 71111.05T	09/30/10	IP 71111.05T	04/19/11
2. _____	_____	IP 71111.05XT	04/19/11
3. IP 71111.05TTP	04/19/11	_____	_____

TRAINING: None

REMARKS: IP 71111.05T (Fire Protection (Triennial)) has been revised to combine IP 71111.05T, "Fire Protection (Triennial)," and IP 71111.05TTP, "Fire Protection – NFPA 805 Transition Period (Triennial)," to provide guidance for inspecting fire-induced circuit failures at all plants except those actively engaged in transitioning to National Fire Protection Association (NFPA) Standard 805. In addition, this revision incorporates enhancements to various sections to provide additional clarity for inspectors. This revision will take effect on August 1, 2011.

IP 71111.05XT (Fire Protection - NFPA 805 (Triennial)) is issued to provide inspection guidance for plants that have transitioned to the NFPA 805 fire protection program. This revision will take effect on August 1, 2011.

IP 71111.05TTP (NFPA 805 Transition Period (Triennial)) has been deleted because the pertinent guidance is now included in IP 71111.05T.

DISTRIBUTION: Standard

END

Example Assessment of Radiological Release in Sea Water

In the March 22, 2001, 10 AM (EST) The Federation of Electric Power Companies of Japan (FEPC) Washington DC Office provide an update that include the following table:

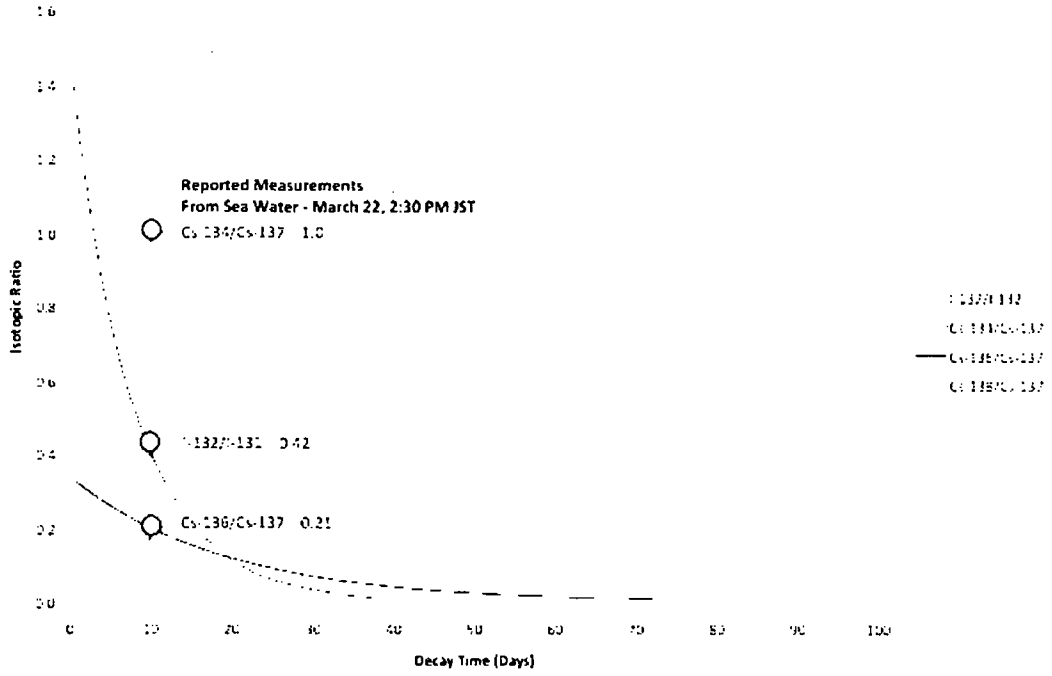
Measurement at 2:30 PM (JST) on March 21, 2011 From Sampling of Sea Water near Sea Water Discharge Point of Unit 1-4 (south side)

Radioactive Nuclides	Concentration (Bq/cm ³)	Maximum Permissible Water Concentration (Bq/cm ³)
Co-58	5.955×10^{-2}	1×10^0
I-131	5.066×10^0	4×10^{-2}
I-132	2.136×10^0	3×10^0
Cs-134	1.486×10^0	6×10^{-2}
Cs-138	2.132×10^{-1}	3×10^{-1}
Cs-137	1.484×10^0	9×10^{-2}

A plot of the I-132/I-131 ratio from ORIGEN calculations as a function of decay time is shown in the figure below (obtained by plotting the data from Chuck Weber). The fact that there is I-132 present indicates that the iodine is not from fuel in the spent fuel pools, which has all been cooled for more than 100 days. The ratio of I-132/I-131 in the measured data is 0.42, which corresponds to about 10 day decay time in the plot below. This roughly corresponds to the elapsed time from the earth quake (March 11, 2:46 PM – March 21, 2:30 PM, JST) indicating that the iodine is from freshly irradiated fuel.

The Cs ratios are a little less clear. A separate ORIGEN calculation, indicates that the Cs-134/Cs-137 ratio at 10 days should be about 1.24, whereas the table above has a value of 1. Perhaps this is within the measurement uncertainty. The Cs-138 indicated above is likely at typo and should be Cs-136. This Cs-136/Cs-137 ratio is also shown on the chat below and seems to be in agreement that material is from recently irradiated fuel with roughly 10 days of cooling time.

Isotope Ratios For Irradiated BWR Fuel vs Decay Time



Agenda for Daily Industry Support Team Teleconference Meeting

March 25, 2011 14:30 EDT

800-772-3842 (b)(5)

Purpose of the Meeting: Alignment of US Government and US Nuclear Industry support for Japan in responding to the Fukushima Nuclear Event.

Expected Outcome: Reinforce roles and responsibilities; identify problems and open issues surrounding our support

Meeting Chair: US NRC

- Roll Call (NRC Lead)
- Discussion of organizational Issues / Roles and Responsibilities – process for formal requests from the Japanese govt. (NRC Lead)
- 14 Items for Discussion (material requests in attached file) (INPO Lead)
- 3 Additional Items where further information is requested (INPO Lead)
- DRAFT Meeting Summary (attached file)... (NRC Lead.. discuss any items for clarification /followup in draft meeting minutes
- Logistics – needs and capabilities – suggested by DOE that OSD provide OSD support to the DART cell to assist with logistics to facilitate transport of equipment coming from the US (request DOE lead this discussion)

MEETING MINUTES FOR US MEETING WITH THE GOJ INTERAGENCY CRISIS MANAGEMENT TEAM

(b)(4),(b)(5)

(b)(4),(b)(5)

DELEGATED AUTHORITY REQUESTED
 IAEA NOTIFIED EMERGENCY

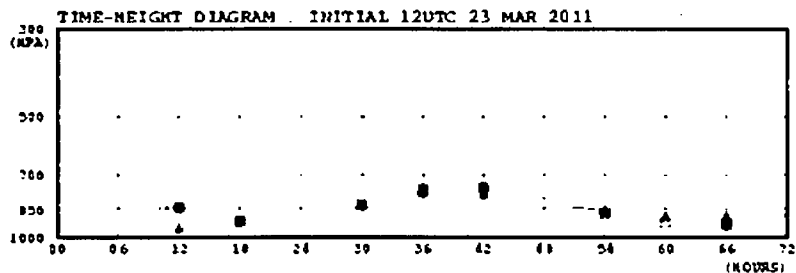
3-D TRAJECTORY

FROM 22UTC 23 MAR 2011 TO 12UTC 26 MAR 2011



140E 150E 160E
 (ISSUED 2309UTC 23 MAR 2011)

▲ INITIAL HEIGHT - 500M ABOVE THE SURFACE
 ■ INITIAL HEIGHT - 1500M ABOVE THE SURFACE
 ● INITIAL HEIGHT - 3000M ABOVE THE SURFACE
 MARKED WITH TIME INTERVAL OF 6 HOURS
 SOURCE LOCATION . LATITUDE . 37.42N
 LONGITUDE . 141.03E
 NAME . FUKUSHIMA DAIICHI, JAPAN

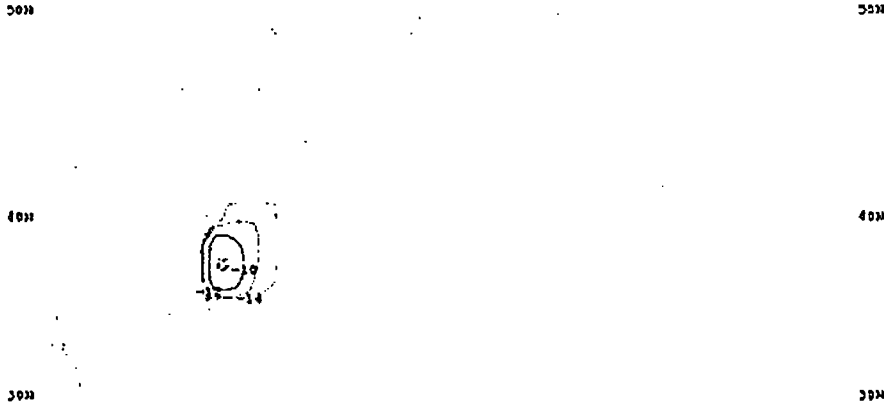


JAPAN METEOROLOGICAL AGENCY
 GLOBAL TRACER TRANSPORT MODEL
 CHART 1 / 5

DELEGATED AUTHORITY REQUESTED
IAEA NOTIFIED EMERGENCY

TIME INTEGRATED SURFACE - 500M LAYER CONCENTRATION

INTEGRATED FROM 22UTC 23 MAR 2011
TO 12UTC 24 MAR 2011



130E 140E 150E 160E 170E 180
(ISSUED 2309UTC 23 MAR 2011)

ASSUMED POLLUTANT RELEASED : I -131
START OF THE EMISSION : 2230UTC 23 MAR 2011
END OF THE EMISSION : 2230UTC 26 MAR 2011
SOURCE LOCATION : LATITUDE 37.42N
LONGITUDE 141.03E
NAME FUKUSHIMA DAIICHI, JAPAN

ASSUMED TOTAL EMISSION : 1 BECQUEREL
UNIFORM RELEASE FROM 20- 500M ABOVE THE GROUND
UNIT : (BQ. S/M3)
MAXIMUM 4.35E-9 (BQ. S/M3)
CONTOURS: 1E-10, 1E-12, 1E-14

CONTOUR VALUES MAY CHANGE FROM CHART TO CHART

JAPAN METEOROLOGICAL AGENCY
GLOBAL TRACER TRANSPORT MODEL
CHART 2 / 5

DELEGATED AUTHORITY REQUESTED
IAEA NOTIFIED EMERGENCY

TIME INTEGRATED SURFACE - 500M LAYER CONCENTRATION

INTEGRATED FROM 12UTC 24 MAR 2011
TO 12UTC 25 MAR 2011



130E 140E 150E 160E 170E 180
(ISSUED 2309UTC 23 MAR 2011)

ASSUMED POLLUTANT RELEASED : 1 -131
START OF THE EMISSION : 2230UTC 23 MAR 2011
END OF THE EMISSION : 2230UTC 26 MAR 2011
SOURCE LOCATION LATITUDE 37.42N
LONGITUDE 141.03E
NAME FUKUSHIMA DAIICHI, JAPAN

ASSUMED TOTAL EMISSION : 1 BECQUEREL
UNIFORM RELEASE FROM 20- 500M ABOVE THE GROUND
UNIT : (BQ. S/M3)
MAXIMUM : 4.70E-9 (BQ. S/M3)
CONTOURS: 1E-10, 1E-12, 1E-14

CONTOUR VALUES MAY CHANGE FROM CHART TO CHART

JAPAN METEOROLOGICAL AGENCY
GLOBAL TRACER TRANSPORT MODEL
CHART 3 / 5

DELEGATED AUTHORITY REQUESTED
IAEA NOTIFIED EMERGENCY

TIME INTEGRATED SURFACE - 500M LAYER CONCENTRATION

INTEGRATED FROM 12UTC 25 MAR 2011
TO 12UTC 26 MAR 2011



130E 140E 150E 160E 170E 180
(ISSUED 2309UTC 23 MAR 2011)

ASSUMED POLLUTANT RELEASED : I -131
START OF THE EMISSION : 2230UTC 23 MAR 2011
END OF THE EMISSION : 2230UTC 26 MAR 2011
SOURCE LOCATION : LATITUDE 37.42N
LONGITUDE 141.03E
NAME FUKUSHIMA DAIICHI, JAPAN

ASSUMED TOTAL EMISSION : 1 BECQUEREL
UNIFORM RELEASE FROM 20- 500M ABOVE THE GROUND
UNIT : (BQ.S/M3)
MAXIMUM : 2.26E-9 (BQ.S/M3)
CONTOURS: 1E-9, 1E-11, 1E-13

CONTOUR VALUES MAY CHANGE FROM CHART TO CHART

JAPAN METEOROLOGICAL AGENCY
GLOBAL TRACER TRANSPORT MODEL
CHART 4 / 5

DELEGATED AUTHORITY REQUESTED
IAEA NOTIFIED EMERGENCY

TOTAL (WET AND DRY) DEPOSITION

INTEGRATED FROM 22UTC 23 MAR 2011
TO 12UTC 26 MAR 2011



130E 140E 150E 160E 170E 180
(ISSUED 2309UTC 23 MAR 2011)

ASSUMED POLLUTANT RELEASED : I -131
START OF THE EMISSION : 2230UTC 23 MAR 2011
END OF THE EMISSION : 2230UTC 26 MAR 2011
SOURCE LOCATION LATITUDE 37.42N
LONGITUDE 141.03E
NAME FUKUSHIMA DAIICHI, JAPAN

ASSUMED TOTAL EMISSION : 1 BECQUEREL
UNIFORM RELEASE FROM 20- 500M ABOVE THE GROUND
UNIT : (BQ/M2)
MAXIMUM 8.32E-12 (BQ/M2)
CONTOURS: 1E-13, 1E-15, 1E-17

CONTOUR VALUES MAY CHANGE FROM CHART TO CHART

JAPAN METEOROLOGICAL AGENCY
GLOBAL TRACER TRANSPORT MODEL
CHART 5 / 5

14 March 2011 / Japan Update / No. 62a

NucNet Backgrounder On Radiation, Possible Contamination and Exposure Assessment at Japan's Nuclear Power Plants

Situation as of 14 March 2011

Measuring and monitoring equipment

As in other countries, every nuclear installation site in Japan operates a permanent system to monitor radioactivity levels on nuclear sites and in the environment. The system includes permanent monitoring at the ventilation stack exhaust and at cooling water outlets. There are a number of fixed permanent measurement posts (MPs) at site boundaries, and mobile measuring equipment is used for checking environmental radiation levels inside and outside the plant site perimeter.

Monitoring operations

The results of permanent monitoring are transmitted in real-time to a number of organisations including the Ministry of Economy, Trade and Industry's Nuclear and Industrial Safety Agency (NISA). Abnormal readings result in alerts.

The earthquake of 11 March 2011 did not cause serious damage to this system and NISA is periodically publishing results on its Japanese website. Tepco has used the readings in its media releases in Japanese and English.

According to NISA's media releases, at Tepco's Fukushima-Daini nuclear plant site and at Tohoku's Onagawa nuclear plant site, readings have remained normal. In other words, there were no relevant, or above normal, amounts of radioactive substances released into the environment (as of 14 March 2011 at about 04:00 local time). On 13 March, monitoring at Onagawa indicated an unexpected increase. Local investigations revealed that the source was outside the site and transient. Since then, levels have fallen to normal values again.

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Upward trend at Daiichi since Saturday

NISA's monitoring at Tepco's Fukushima-Daiichi nuclear plant site did not indicate values above the normal level until 12 March at 04:00 local time. On 12 March at 07:00, NISA said there was an increase in monitoring post (MP) readings. Instead of the normal value of 0.07 microsieverts per hour (microSv/hr), the dose rate readings were:

- at MP no. 6 (MP6) near the main gate 0.59 microSv/hr,
- at MP8 in an elevated position 0.38 microSv/hr on 12 March at 4:30 local time.

With these increased dose rate levels, the legal annual dose limit of 1 millisievert per year (mSv/yr) for the most exposed member of the public would have been reached within 70 days instead of 365.

Note that the annual dose limit for controlled nuclear workers or medical personnel is 20 mSv per year, but may reach 50 mSv in an exceptional year when the 5-year average is not higher than 20 mSv, according to recommendations by the International Commission on Radiological Protection (ICRP). In a declared emergency, the recommended limit is 100 mSv according to ICRP's recommendations. Japan has adopted the ICRP's recommendations.

Further readings showed a marked "up and down" development, depending on weather conditions – in particular prevailing wind direction – and measures taken by the plant operators – in particular the venting of the primary containment vessel (PCV):

- on 12 March (local time):
 - at MP6 5.1 microSv/hr at 07:30 and at MP8 2.5 microSv/hr at 07:40
 - at MP6 5.1 microSv/hr at 09:10 and at MP8 2.9 microSv/hr at 09:40
 - at MP6 6.7 microSv/hr at 11:00 and at MP8 5.3 microSv/hr at 12:00
 - at MP6 8.9 microSv/hr at 14:40 and at MP8 3.8 microSv/hr at 14:40
 - at MP4 near car site 1015 microSv/hr at 15:29, at MP6 3.25 microSv/hr at 16:40, at MP8 2.06 microSv/hr at 16:40, and at site boundary with mobile equipment about 500 microSv/hr at 15:29 during filtered venting of the primary containment vessel (PCV) started at 14:40
 - at MP4 near car site 59.1 microSv/hr at 20:26, at MP6 3.2 microSv/hr at 20:30, and at MP8 2.06 microSv/hr at 16:40

Cont'd. . .

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- on 13 March (local time):
 - at MP4 near car site 40 microSv/hr at 03:08, at MP6 3.1 microSv/hr at 02:50, and at MP8 4.5 microSv/hr on 13 March at 02:50
 - at MP6 3.2 microSv/hr at 5:50 and at MP8 5.2 microSv/hr at 5:50
 - at MP1 northernmost (instead of MP8) 17 microSv/hr at 11:40, at MP4 47 microSv/hr at 12:20, and at MP6 26 microSv/hr at 9:30
 - at MP1 26 microSv/hr at 18:30, at MP4 44 microSv/hr at 19:33, and at MP6 5.2 microSv/hr at 19:00
- on 14 March (local time):
 - at MP2 north-northwest 680 microSv/hr at 03:50
 - at MP4 56.4 microSv/hr at 04:08
 - at MP6 66.3 microSv/hr at 02:50
 - at MP6 20 microSv/hr at 11:44 according to Tepco after detonation of the outer containment building of unit 3

Summary

The readings at the various MPs on Fukushima-Daiichi's boundary began to rise above normal during the night of Friday and on Saturday, with ups and downs depending on weather and activity, and a measured peak value of 1015 microSv/hr at the most exposed point during the first venting of unit 1. The general trend was still upwards on Monday morning, 14 March.

The normal value before the release of radioactive materials was 0.07 microSv/hr. In the meantime, the average dose rate has reached a range of 5 to 50 microSv/hr.

For comparison: in most countries, the natural background radiation level is in the range of 0.2 to 0.5 microSv/hr (including the natural radon background radiation in buildings) or about 2 to 4 mSv/yr.

Radioactive iodine and caesium found

According to Tepco, the releases are composed of radioactive noble gases, including radioactive xenon isotopes. These decay into radioactive iodine, which can become a particular health problem when contaminating dairy food or if they are inhaled. However, the controlled intake of iodine is an efficient preventive measure.

The radioactive releases also contain other radioactive isotopes, in particular caesium and tellurium. The total level is above legal limits, but below the orders of magnitude seen after other

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nuclear accidents and a disaster like "Chernobyl". Tepco and NISA are carrying out detailed analysis, but have not yet published complete figures (as of 14 March).

One case of overexposure

Only one person has been exposed to a radiation dose above recommended emergency limits: a worker at Fukushima Daiichi with a measured dose of 106 mSv. Another worker has accumulated a dose of 96 mSv – a still acceptable level in declared emergencies.

Screening of public

About 180,000 members of the general public have been evacuated from the 20-kilometre zone around Fukushima Daiichi, from the 10-km zone around Fukushima-Daini, and from the 3-km zone around Onagawa, or have been ordered to stay indoors. Among these people, only about 200 have possibly been contaminated. In cases of doubt, members of the public should be screened for shoe, clothing, and body contamination in hospitals and other specialised medical centres.

According to NISA, the controlled screening has begun of people who are concerned about possible exposure. First results show contamination in certain cases. Whole body measurements with 18,000 to 40,000 counts per minute were found in 4 cases out of 9. Another 5 cases showed no contamination. Note: the critical value is more than 100,000 counts per minute.

In some cases, the result was above the critical value, but when the shoes were taken off, the result was significantly lower.

Screening had not finished as of March 14.

Sources

- NISA reporting on "Nuclear-related Emergency Information / Earth-quake effects on nuclear facilities", parts 10 to 22 (Japanese version in Google assisted translation)

Time stamp of part 20 is "2011/03/14 07:30 Update" (23:30 CET)

- Tepco releases of 12 March 06:00, 20:00, 21:00; 13 March 08:00, 09:00, and 13:00 local time (05:00 CET)

>>>Related reports in the NucNet database (available to subscribers)

Tepco Confirms Venting Of Unit 1, 'Reactor Not Affected' By Explosion (News in Brief No. 55, 12 March 2011)

Japan Says Containments Are Intact At All Fukushima-Daiichi Units (News in Brief No. 57, 13 March 2011)

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Miroslav Gregoric

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From: GREGORIC, Miroslav
Sent: Tuesday, 22 March 2011 14:42
To: IEC3 - INCIDENT & EMERGENCY CENTRE
Cc: FLORY, Denis; ANDREW, Graham; NILSSON, Anita Birgitta; LYONS, James E.; SUZUKI, Satoshi; MRABIT, Khammar; YLLERA, Javier; LIPAR, Miroslav; CARUSO, Gustavo; HAHN, Pil-Soo; CZARWINSKI, Renate; VINCZE, Pal; BUGLOVA, Elena; MARTINCIC, Rafael; Kryuchenkov, Vladimir (V.Kryuchenkov@iaea.org); COLGAN, Peter; COLGAN, Tony; DUSIC, Milorad; WINTER, Denis Jacques
Subject: Core melt at Fukushima Unit 1 from 11 to 12 March 2011 JST
NOT for distribution
Importance: High

Dear colleagues

Please find attached calculations for Fukushima Daiichi Unit 1 core melt from basic principles. Of course with your input the calculations could be improved.

Best regards

Miro

Total Core-melt of Fukushima Daiichi Unit 1 on 11 or 12 March 2011

Basic hand held calculations by Miroslav Gregoric, checked by Vladimir Kryuchenkov on 22 March 2011. (Note: The excel sheet is attached. Of course the modelling by MELCOR or other severe accident codes will give better results, but one cannot go against basic heat equations.)

Basic assumptions based on known reported data from TEPCO and NISA

1) At the earthquake, reactor scrammed from 1380 MWth on 11 March at 14:46 SJT, and after station blackout, main steam isolation valves closed. Reactor was cooled by injecting condensate water to Reactor Pressure Vessel via diesel operated pump (via steam turbine – not confirmed), and by releasing steam to containment suppression pool –wetwell. This went on almost an hour, when at 15:42 tsunami flooded both diesels and many electrical distributing equipment and washed away or damaged condensate storage tanks. Yet NISA reported that water injection continued for almost additional hour until 16:36 when water injection failed. By that time 198000 MJ of the residual heat was generated. In order to cool the core also the accumulated heat in the core needed to be taken away, but that was small compared to decay heat. Assumption is that all this heat was successfully discharged to the wetwell, acting as the only heat sink, where the temperature and pressure increased. At least 79 tons of condensate water was needed to be injected and boil off to take the heat away. No measured pressures are available for this period.

2) After loss of water injection on 11 March at 16:36 there was no water flow to reactor for almost 28 hours, up to 12 March at 20:20 when sea water injection was established via fire pumps to reactor. During this time 1000000 MJ (one million Mega Joule) of the residual heat was generated. In order to cool the core at least 412 tons of water should be boiled off in the core, but this was not available. The core dried and overheated. If average heat capacity of the core is 0.3 kJ/kg/degC, and if fuel in the core and core internals mass is 140 tons then it takes only about 42 MJ to heat the core for one degree Celsius. To melt the core it should be heated first to the melting point(s) and then the melting (phase transition) will consume additional 260 kJ/kg or 62000 MJ in total. The residual heat generated in this period is much higher (ten times or more) than needed for heating up to melting points and for melting. The available heat could heat up the core far above the melting points. The only cooling during this time was heat irradiation to the reactor pressure vessel from the outer layers of fuel elements.

On the 12 March at 0:49 (or 8 hr 13 minutes after loss of water injection) an unusual increase of PCV pressure was detected (drywell). At that point the residual heat generated after loss of water injection was 390000 MJ, which would need additional 156 tons of water to boil off, which was not available and the core heated up above melting point. Before core melting Zirconium in the fuel cladding starts oxidising and adding chemical reaction heat. This added additional heat and also a lot of hydrogen, causing sudden increase of pressure in reactor pressure vessel, discharging hydrogen through the relieve valves to the wetwell. We can assume that once the Zirconium started to oxidise, very soon all fuel rods have broken to release all noble gasses and volatiles like Iodine and Cesium into the reactor. Some of the iodine and Cesium could be trapped in the wetwell water, but not the noble gases.

All of the above points to a conclusion that a substantial core melt in reactor unit 1 has happened starting in the night from 11 to 12 March and going on up to the start of injection of sea water on 12 March at 20:20. It is possible that the vessel has melted through already before increase in PCV pressure on 12 March at 0:49 hours, 8 hr 13 minutes of no cooling, and molten core has penetrated the drywell as no water was there.

3. Venting of the containment started on 12 March at 14:30, releasing mixture of water vapour, hydrogen, most of noble gases in the core, Iodine, Cesium and all other volatile radionuclides. Release point was not given, stack release was probably not successful as in less an hour later, at 15:36 a huge hydrogen explosion blasted the top of reactor building 1 sideways and upwards. The explosion must have damaged the operating floor where spent fuel pool is located, with the crane for spent fuel is located (and maybe the crane for the reactor vessel).

The wind was on 11 and 12 March blowing to the Pacific during the containment venting and explosion, so that all noble gases and volatile radionuclides of the first release were going towards ocean. However sharp peaks should be observed on the monitoring stations inland, 3 km to the west, mainly reading the cloud shine (to be checked with actual data).

time after scram sec	decay power from 1300 MWth		evaporated water needed, kg/s	atmospheric pressure, m3/hr	needed in the interval MJ	evaporated water energy needed at removal	water needed for evaporation in the interval kg	water needed for evaporation in the interval tons
	decay power %	1300 MWth						
0	100	1380	552.00	1987.2				
0.1	8	110.4	44.16	159.0	75		29.808	
1	6.5	89.7 second	35.88	129.2	90		36.018	
10	5	69	27.60	99.4	714		285.66	
100	4	55.2	22.08	79.5	5589		2235.6	
1000	2.5	34.5	13.80	49.7	40365		16146	
3600	2	27.6 1 hour	11.04	39.7	80730	127563 energy removed before tsunami	32292	51 water needed (tons) to boil off before tsunami
6600	1.4	19.32 1hr50min	7.73	27.8	70380	197943 energy removed before loss of water inj	28152	79 water needed (tons) to boil off before loss of water injecti
10000	1	13.8 3 hours	5.52	19.9	56304		22521.6	
						energy for removal after loss of water injection to sudden increase of pressure in PCV 8hr13 min after loss		
36180	0.85	11.73 8hr13min	4.69	16.9	334188	390492 of water injection	133675.08	156
43200	0.83	11.454 12 hours	4.58	16.5	81376	471868 energy for removal after loss of water injection 10 hr	32550.336	189
86400	0.7	9.66 1 day	3.86	13.9	456062	927930 energy for removal after loss of water injection 22 hr	182424.96	371
100000	0.4	5.52 28 hours	2.21	7.9	103224	1031154 energy for removal after loss of water injection 28 hr	41289.6	412 water needed to boil off before sea water injection
1000000	0.15	2.07 10 days	0.83	3.0	3415500		1366200	
10000000	0.08	1.104 3 month	0.44	1.6	14283000		5713200	
						588434 PCV pressure		
						1125873 1 day		

heat of evaporation water	100800 seconds in 28 hr	3600
2.5	172800 seconds in 2 days	3000
MJ/kg		6600
at atmospheric pressure		

1 Mw will evaporate	0.4	1440	34560
liters per second	per hour	per day	

heat generated by decay heat in first hour and 50 minutes after quake when diesel generators and essential service water were operating and condenser water pumped to reactor and steam released from reactor to wetwell MJ 197943
water needed to boil off tons 79

heat generated by decay heat in 28 hr after diesel generators and condensate storage tanks and essential service water were not available, no water was pumped in and steam was discharged through SRV safety relief valves to wetwell MJ 1031154
water needed to boil off tons 412

heat capacity Zircaloy kJ/kg/K	0.35	melting heat for UO2 kJ/kg	260
heat capacity UO2 kJ/kg/K	0.24	melting heat for Zircaloy kJ/kg	200
heat capacity steel kJ/kg/K	0.51	melting heat for steel kJ/kg	340
		28 hours after water injection stopped	

(b)(5)