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U.S. Nuclear Regulatory Commission  
ATTENTION: Document Control Desk  
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Your ref: Project Number 740  
Our ref: DCP/NRC1963

July 17, 2007

Subject: AP1000 COL Response to Request for Additional Information (TR #44)

In support of Combined License application pre-application activities, Westinghouse is submitting a response to NRC request for additional information (RAI) on AP1000 Standard Combined License Technical Report 44, APP-GW-GLR-026, Rev. 0, New Fuel Storage Rack Structural/Seismic Analysis. This RAI response is submitted as part of the NuStart Bellefonte COL Project (NRC Project Number 740). The information included in the response is generic and is expected to apply to all COL applications referencing the AP1000 Design Certification.

A proprietary and non-proprietary response is provided for request for additional information TR44-12, transmitted in NRC letter dated April 6, 2007 from Steven D. Bloom to Andrea Sterdis, Subject: Westinghouse AP1000 Combined License (COL) Pre-application Technical Report 44 – Request for Additional Information (TAC NO. MD2104). This response supersedes that provided under Westinghouse letter DCP/NRC1953 dated July 5, 2007.

Pursuant to 10 CFR 50.30(b), the responses to requests for additional information on Technical Report 44 is submitted as Enclosures 2 and 3 under the attached Oath of Affirmation.

Also enclosed is one copy of the Affidavit Pursuant to 10 CFR 2.390.

This submittal contains proprietary information of Holtec International. In conformance with the requirements of 10 CFR Section 2.390, as amended, of the Commission's regulations, we are enclosing with this submittal an affidavit. The affidavit sets forth the basis on which the information identified as proprietary may be withheld from public disclosure by the Commission.

Correspondence with respect to the affidavit or Application for Withholding should be addressed to Evan Rosenbaum, Project Manager, AP1000 Spent Fuel Storage Racks Project, Holtec International, 555 Lincoln Drive, Marlton, New Jersey, 08053.

Questions or requests for additional information related to the content and preparation of these responses should be directed to Westinghouse. Please send copies of such questions or requests to the prospective applicants for combined licenses referencing the AP1000 Design Certification. A representative for each applicant is included on the cc: list of this letter.

Very truly yours,



A. Sterdis, Manager  
Licensing and Customer Interface  
Regulatory Affairs and Standardization

/Attachment

1. "Oath of Affirmation," dated July 17, 2007

/Enclosures

1. Affidavit Pursuant to 10 CFR 2.390, dated June 19, 2007
2. Proprietary Response to Request for Additional Information on Technical Report No. 44
3. Non-Proprietary Response to Request for Additional Information on Technical Report No. 44

cc:	D. Jaffe	- U.S. NRC	1E	1A
	E. McKenna	- U.S. NRC	1E	1A
	S. Adams	- Westinghouse	1E	1A
	G. Curtis	- TVA	1E	1A
	P. Grendys	- Westinghouse	1E	1A
	P. Hastings	- Duke Power	1E	1A
	C. Ionescu	- Progress Energy	1E	1A
	D. Lindgren	- Westinghouse	1E	1A
	A. Monroe	- SCANA	1E	1A
	M. Moran	- Florida Power & Light	1E	1A
	C. Pierce	- Southern Company	1E	1A
	E. Schmiech	- Westinghouse	1E	1A
	G. Zinke	- NuStart/Entergy	1E	1A
	J. Iacovino	- Westinghouse	1E	1A

ATTACHMENT 1

“Oath of Affirmation”

ATTACHMENT 1

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

In the Matter of: )  
NuStart Bellefonte COL Project )  
NRC Project Number 740 )

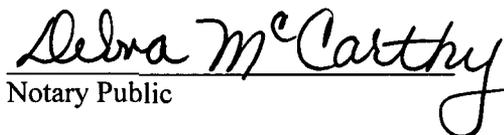
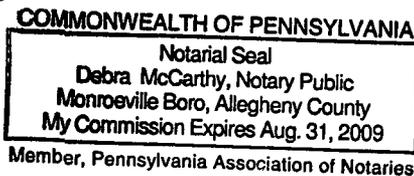
APPLICATION FOR REVIEW OF  
"AP1000 GENERAL COMBINED LICENSE INFORMATION"  
FOR COL APPLICATION PRE-APPLICATION REVIEW

B. W. Bevilacqua, being duly sworn, states that he is Vice President, New Plants Engineering, for Westinghouse Electric Company; that he is authorized on the part of said company to sign and file with the Nuclear Regulatory Commission this document; that all statements made and matters set forth therein are true and correct to the best of his knowledge, information and belief.



B. W. Bevilacqua  
Vice President  
New Plants Engineering

Subscribed and sworn to  
before me this 17<sup>th</sup> day  
of July 2007.



Debra McCarthy  
Notary Public

ENCLOSURE 1

Affidavit Pursuant to 10 CFR 2.390

**AFFIDAVIT PURSUANT TO 10 CFR 2.390**

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I, Evan Rosenbaum, being duly sworn, depose and state as follows:

- (1) I am the Holtec International Project Manager for the AP1000 Spent Fuel Storage Racks Project and have reviewed the information described in paragraph (2) which is sought to be withheld, and am authorized to apply for its withholding.
- (2) The information sought to be withheld is Holtec Report HI-2063492 (or any portions thereof), containing Holtec Proprietary information.
- (3) In making this application for withholding of proprietary information of which it is the owner, Holtec International relies upon the exemption from disclosure set forth in the Freedom of Information Act ("FOIA"), 5 USC Sec. 552(b)(4) and the Trade Secrets Act, 18 USC Sec. 1905, and NRC regulations 10CFR Part 9.17(a)(4), 2.390(a)(4), and 2.390(b)(1) for "trade secrets and commercial or financial information obtained from a person and privileged or confidential" (Exemption 4). The material for which exemption from disclosure is here sought is all "confidential commercial information", and some portions also qualify under the narrower definition of "trade secret", within the meanings assigned to those terms for purposes of FOIA Exemption 4 in, respectively, Critical Mass Energy Project v. Nuclear Regulatory Commission, 975F2d871 (DC Cir. 1992), and Public Citizen Health Research Group v. FDA, 704F2d1280 (DC Cir. 1983).

**AFFIDAVIT PURSUANT TO 10 CFR 2.390**

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- (4) Some examples of categories of information which fit into the definition of proprietary information are:
- a. Information that discloses a process, method, or apparatus, including supporting data and analyses, where prevention of its use by Holtec's competitors without license from Holtec International constitutes a competitive economic advantage over other companies;
  - b. Information which, if used by a competitor, would reduce his expenditure of resources or improve his competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing of a similar product.
  - c. Information which reveals cost or price information, production, capacities, budget levels, or commercial strategies of Holtec International, its customers, or its suppliers;
  - d. Information which reveals aspects of past, present, or future Holtec International customer-funded development plans and programs of potential commercial value to Holtec International;
  - e. Information which discloses patentable subject matter for which it may be desirable to obtain patent protection.

The information sought to be withheld is considered to be proprietary for the reasons set forth in paragraphs 4.a and 4.b, above.

- (5) The information sought to be withheld is being submitted to the NRC in confidence. The information (including that compiled from many sources) is of a sort customarily held in confidence by Holtec International, and is in fact so held. The information sought to be withheld has, to the best of my knowledge and belief, consistently been held in confidence by Holtec International. No public disclosure has been made, and it is not available in public sources. All disclosures to third parties, including any required transmittals to the NRC, have

**AFFIDAVIT PURSUANT TO 10 CFR 2.390**

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been made, or must be made, pursuant to regulatory provisions or proprietary agreements which provide for maintenance of the information in confidence. Its initial designation as proprietary information, and the subsequent steps taken to prevent its unauthorized disclosure, are as set forth in paragraphs (6) and (7) following.

- (6) Initial approval of proprietary treatment of a document is made by the manager of the originating component, the person most likely to be acquainted with the value and sensitivity of the information in relation to industry knowledge. Access to such documents within Holtec International is limited on a "need to know" basis.
- (7) The procedure for approval of external release of such a document typically requires review by the staff manager, project manager, principal scientist or other equivalent authority, by the manager of the cognizant marketing function (or his designee), and by the Legal Operation, for technical content, competitive effect, and determination of the accuracy of the proprietary designation. Disclosures outside Holtec International are limited to regulatory bodies, customers, and potential customers, and their agents, suppliers, and licensees, and others with a legitimate need for the information, and then only in accordance with appropriate regulatory provisions or proprietary agreements.
- (8) The information classified as proprietary was developed and compiled by Holtec International at a significant cost to Holtec International. This information is classified as proprietary because it contains detailed descriptions of analytical approaches and methodologies not available elsewhere. This information would provide other parties, including competitors, with information from Holtec International's technical database and the results of evaluations performed by Holtec International. A substantial effort has been expended by Holtec International to develop this information. Release of this information would improve a competitor's position because it would enable Holtec's competitor to copy our technology and offer it for sale in competition with our company, causing us financial injury.

**AFFIDAVIT PURSUANT TO 10 CFR 2.390**

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- (9) Public disclosure of the information sought to be withheld is likely to cause substantial harm to Holtec International's competitive position and foreclose or reduce the availability of profit-making opportunities. The information is part of Holtec International's comprehensive spent fuel storage technology base, and its commercial value extends beyond the original development cost. The value of the technology base goes beyond the extensive physical database and analytical methodology, and includes development of the expertise to determine and apply the appropriate evaluation process.

The research, development, engineering, and analytical costs comprise a substantial investment of time and money by Holtec International.

The precise value of the expertise to devise an evaluation process and apply the correct analytical methodology is difficult to quantify, but it clearly is substantial.

Holtec International's competitive advantage will be lost if its competitors are able to use the results of the Holtec International experience to normalize or verify their own process or if they are able to claim an equivalent understanding by demonstrating that they can arrive at the same or similar conclusions.

The value of this information to Holtec International would be lost if the information were disclosed to the public. Making such information available to competitors without their having been required to undertake a similar expenditure of resources would unfairly provide competitors with a windfall, and deprive Holtec International of the opportunity to exercise its competitive advantage to seek an adequate return on its large investment in developing these very valuable analytical tools.



ENCLOSURE 3

Non-Proprietary Response to Request for Additional Information on Technical Report No. 44

# AP1000 TECHNICAL REPORT REVIEW

## Response to Request For Additional Information (RAI)

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RAI Response Number: RAI-TR44-012  
Revision: 0

### **Question:**

How are the different impact stiffness values determined for the fuel assembly-to- cell wall, rack to wall, and pedestal-to-bearing pad? Since the impact forces can be greatly affected by the impact spring constant, what is the sensitivity of the impact forces and rack responses to variation in these spring constants? Are impact forces imparted directly onto the cell walls or are there impact bars?

### **Westinghouse Response:**

The impact stiffness values for the rack to wall and pedestal to bearing pad (concrete floor) are calculated as shown in Attachment 1 to this RAI response. The fuel to cell wall impact stiffness is determined based on the solution for a simply supported circular plate under a concentrated load applied at its center, where the plate diameter is equal to the cell inner dimension and the plate thickness is equal to the cell wall thickness. The stiffness of the annular plate is then multiplied by the number of loaded storage cells for the new fuel storage rack, since the stored fuel assemblies are assumed to rattle in unison. A sensitivity study has not been performed specifically for the AP1000 new fuel rack to quantify the effect of variations in the impact stiffness values. However, sensitivity studies have been performed in the past for similar spent fuel rack applications submitted by Holtec, which employed the same method of computing the impact stiffness values, and the impact forces were found to be insensitive to small variations in the stiffness values provided that the integration time step was sufficiently small. There are no impact bars at the top of the new fuel storage rack. However, the new fuel storage rack is braced against the north and south walls of the New Fuel Storage Pit by inserting stainless steel wedges in the interstitial space between the top of the new fuel storage rack and the pit opening. Figure TR44-9.1, which is part of the response to RAI TR44-009, provides a sketch of the new fuel storage rack inside the New Fuel Storage Pit with the wedges installed.

### **Reference:**

1. APP-GW-GLR-026, Revision 0, "New Fuel Storage Rack Structural/Seismic Analysis," (Technical Report Number 44)

### **Design Control Document (DCD) Revision:**

None

### **PRA Revision:**

None

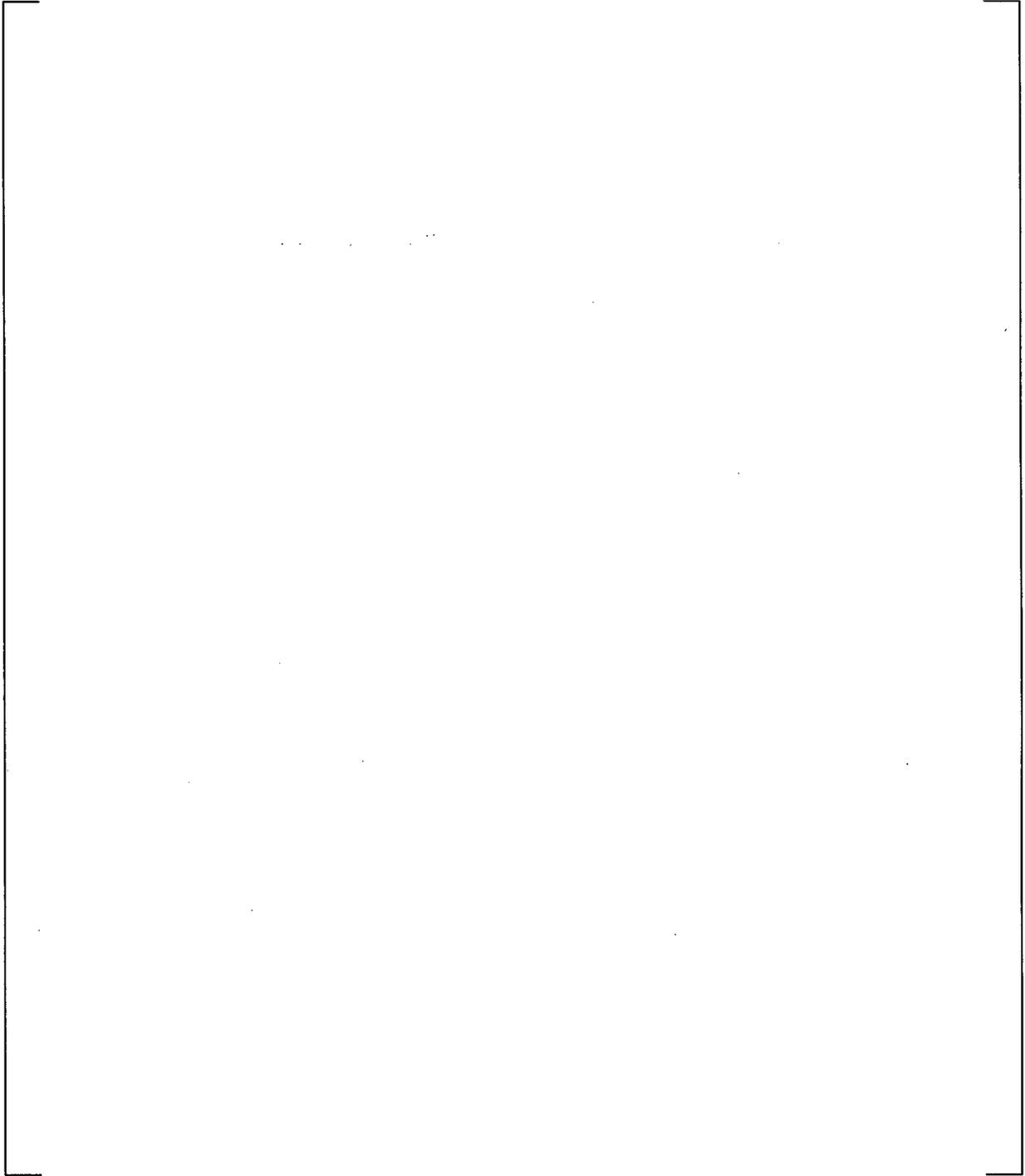
### **Technical Report (TR) Revision:**

None

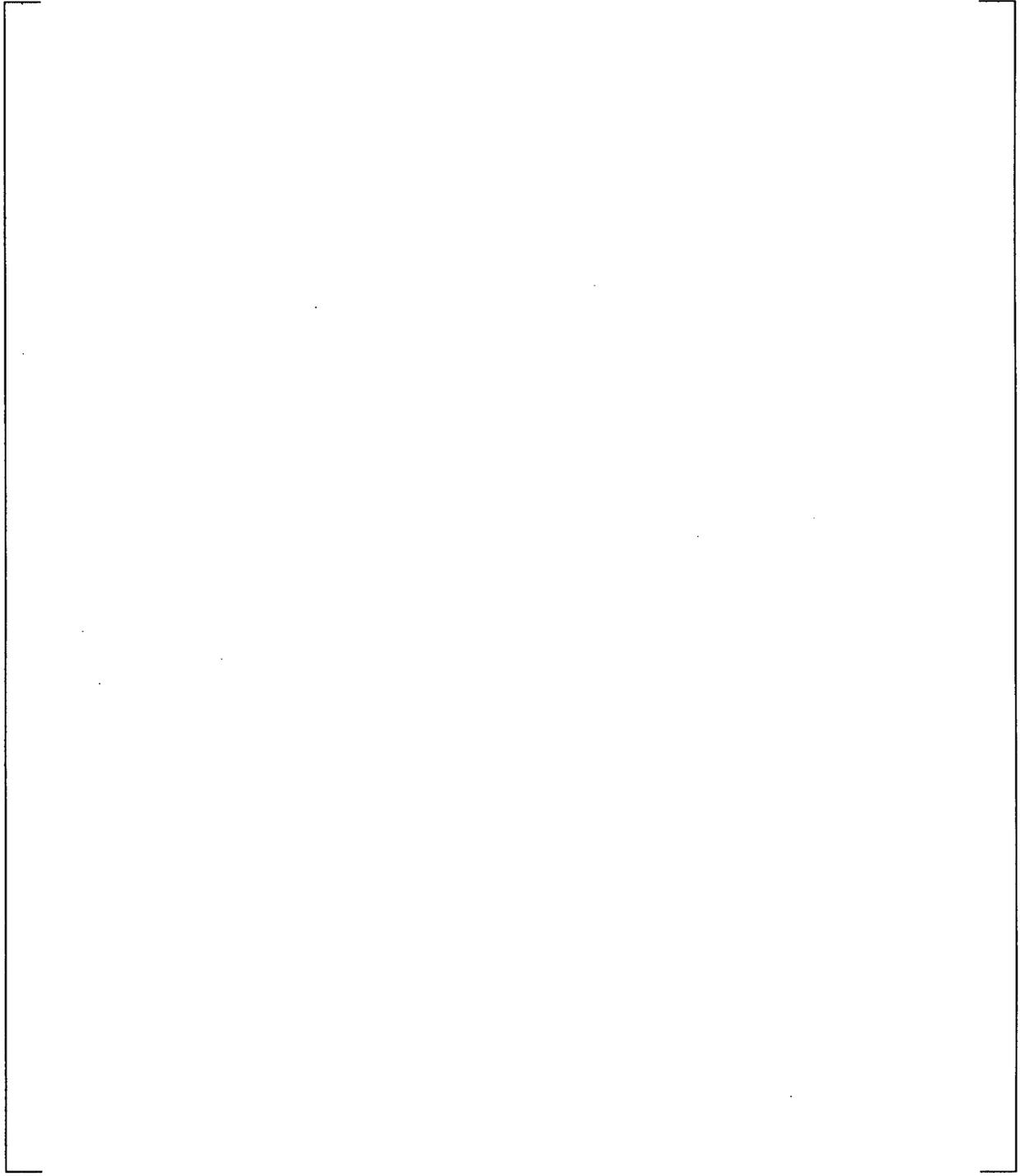


**Attachment 1 to RAI-TR44-012**

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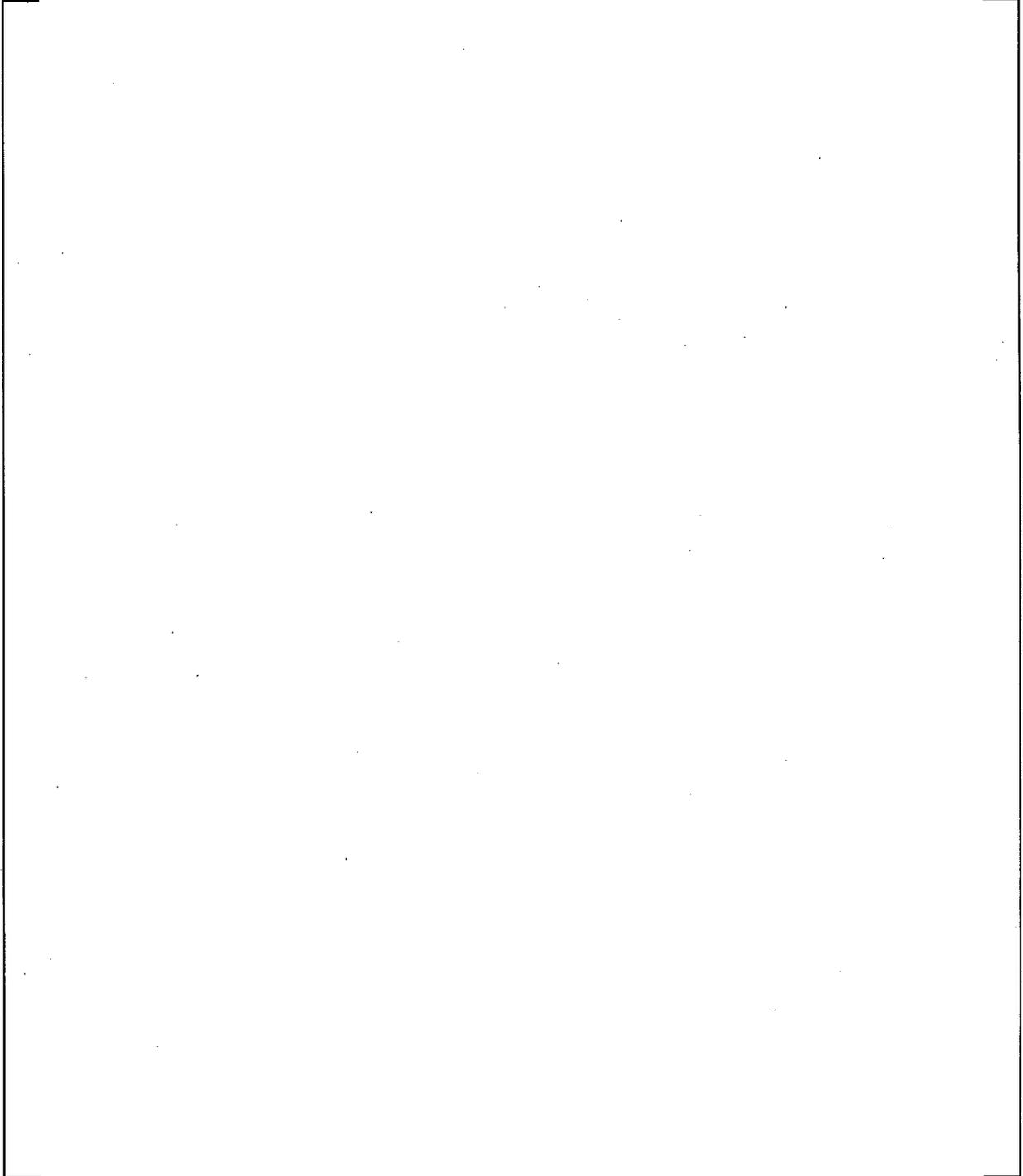
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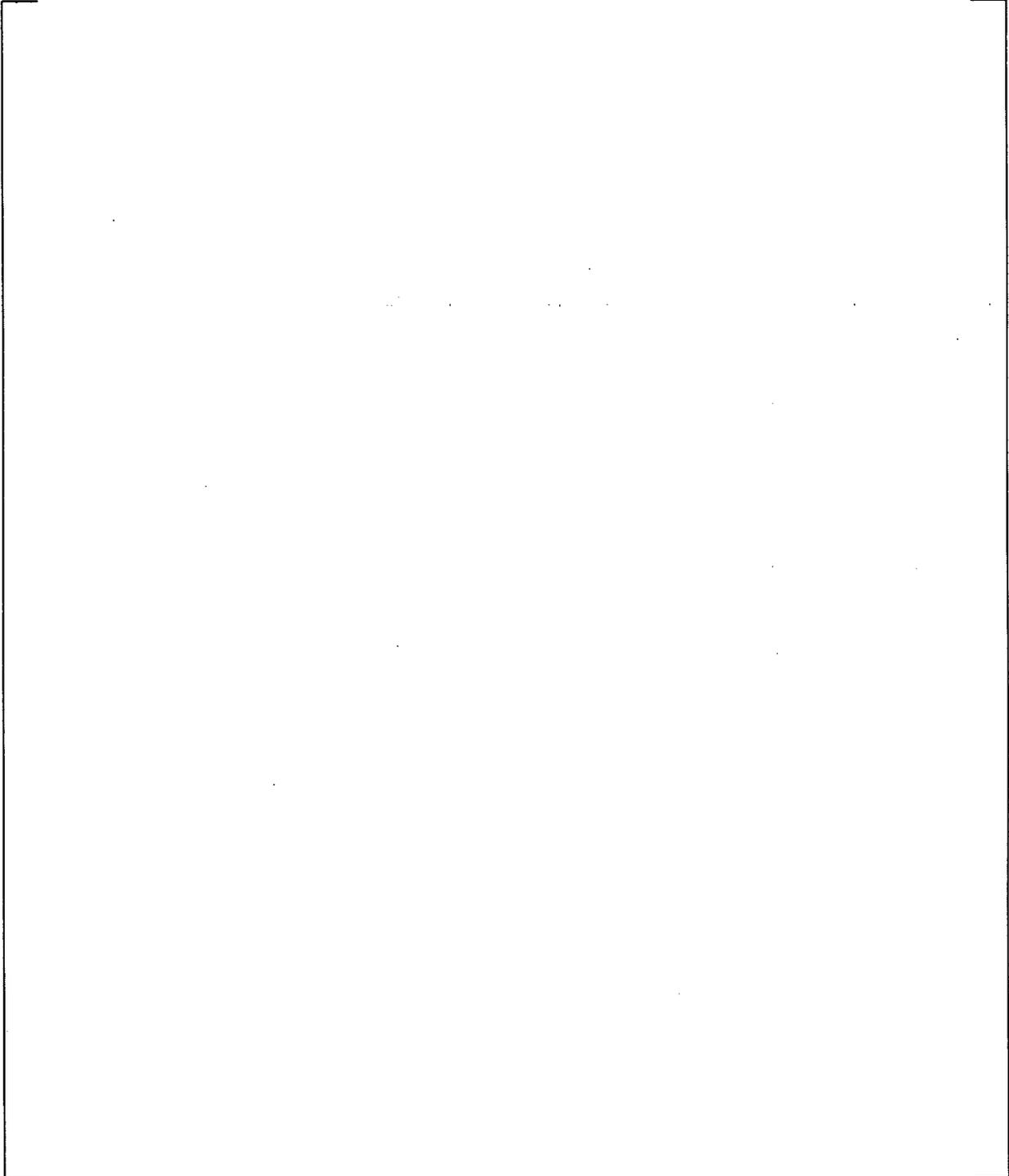
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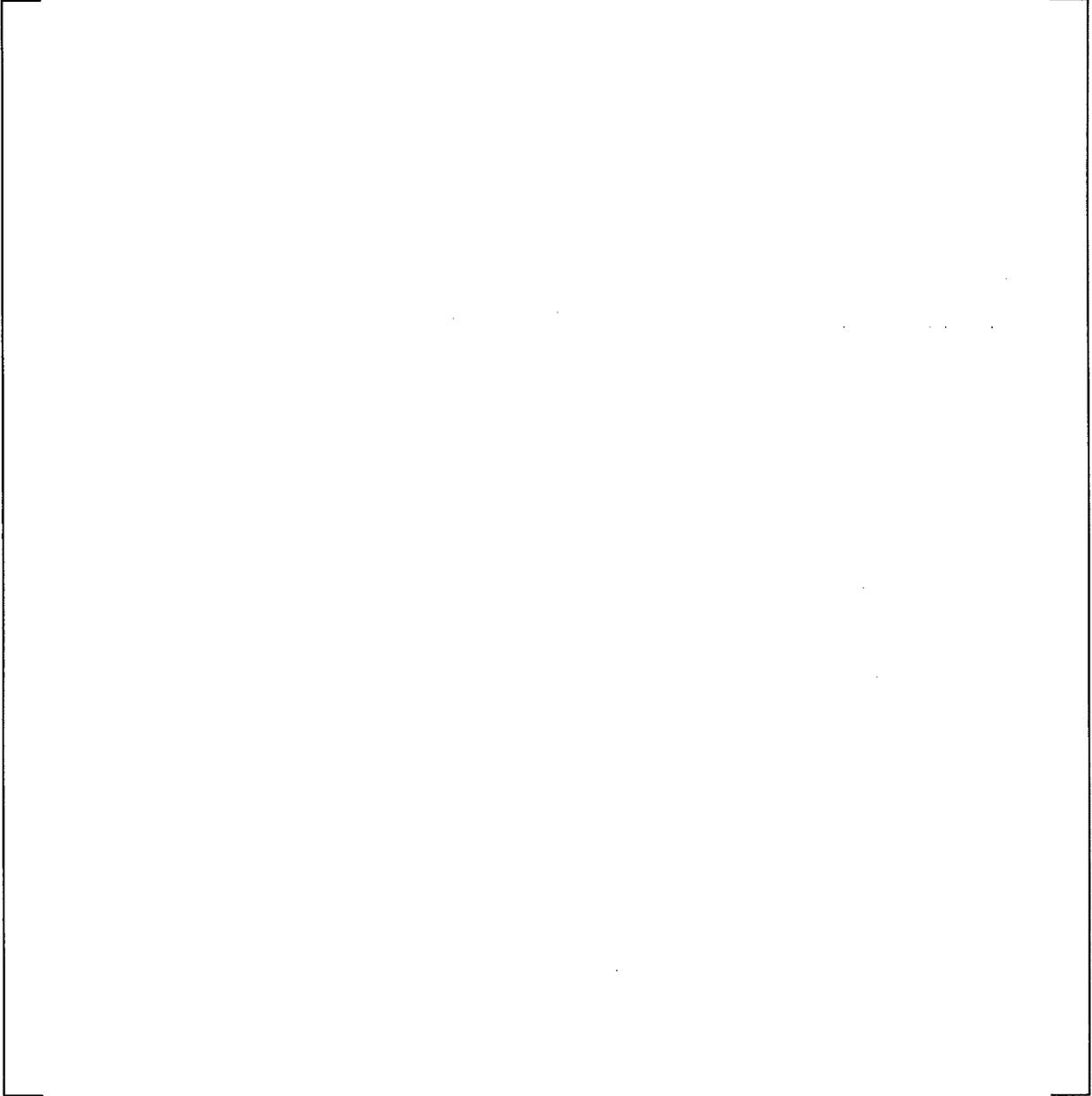
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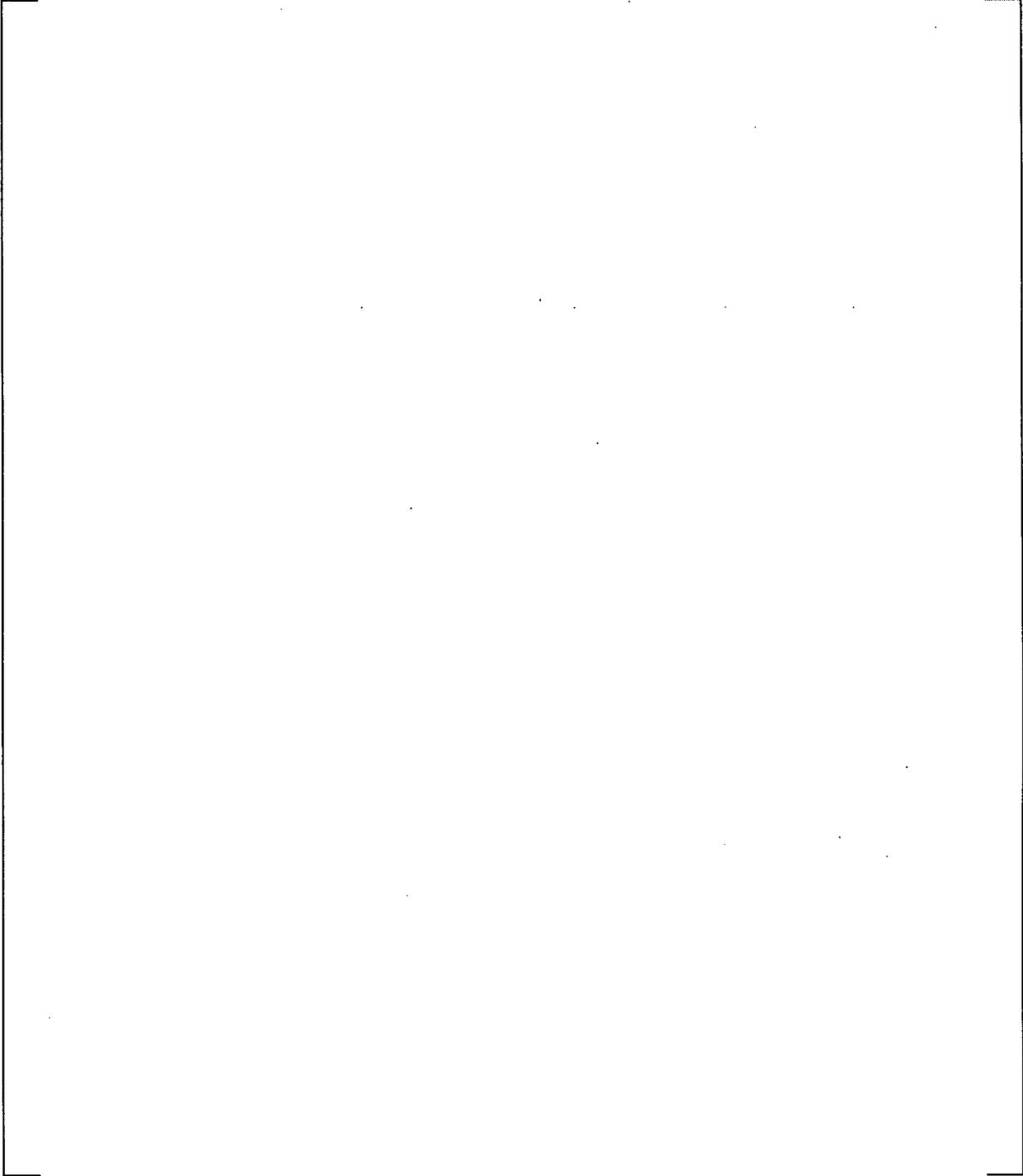
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a,b,d



a,b,d



a,b,d

