



Westinghouse Electric Company
Nuclear Power Plants
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USA

U.S. Nuclear Regulatory Commission
ATTENTION: Document Control Desk
Washington, D.C. 20555

Direct tel: 412-374-6206
Direct fax: 724-940-8505
e-mail: sisk1rb@westinghouse.com

Your ref: Docket Number 52-006
Our ref: DCP_NRC_002803

March 2, 2010

Subject AP1000 Shield Building Construction and Inspection Information for the
NRC Meeting on 2/23/10 (FINAL)

Reference: DCP_NRC_002767, 2/12/10, AP1000 Shield Building Construction and Inspection Update
Information for the NRC Meeting on 2/23/10

Enclosed are the FINAL presentations for NRC that supported the NRC meeting held on February 23, 2010. The attached presentations totally replace the preliminary referenced information noted above. The changes are minor and include the following:

- 1) Added new slide 38 on Acceptance Criteria for defects
- 2) Added new slide 45 and 46 on NDE Sampling
- 3) Replaced slide 61 on Shield Building Construction/Inspection Summary

Pursuant to 10 CFR 50.30(b), proprietary and non-proprietary versions of the presentations and information are submitted as Enclosures 3 and 4. Enclosure 1 is one copy of the Application for Withholding, AW-10-2769 (non-proprietary). Enclosure 2 is one copy of the associated Affidavit with Proprietary Information Notice and Copyright Notice (non-proprietary).

Enclosure 3 is the proprietary version of the FINAL construction and inspection presentation. Enclosure 4 is the FINAL non-proprietary version of the construction and inspection presentation.

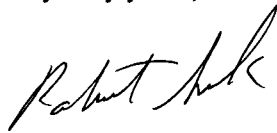
This submittal contains proprietary information of Westinghouse Electric Company, LLC. In conformance with the requirements of 10 CFR Section 2.390, as amended, of the Commission's regulations, we are enclosing with this submittal an Application for Withholding and an Affidavit. The Affidavit sets forth the basis on which the information identified as proprietary may be withheld from public disclosure by the Commission. The information being redacted is of a type customarily held in confidence by Westinghouse and not customarily disclosed to the public.

Correspondence with respect to the Affidavit or Application for Withholding should reference AW-10-2769 and should be addressed to James A. Gresham, Manager, Regulatory Compliance and Plant Licensing, Westinghouse Electric Company, LLC, P. O. Box 355, Pittsburgh, Pennsylvania 15230-0355.

DD63
NRD

Questions or requests for additional information related to the content and preparation of this response 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,



Robert Sisk, Manager
Licensing and Customer Interface
Regulatory Affairs and Standardization

/Enclosures

1. AW-10-2769 "Application for Withholding Proprietary Information from Disclosure," dated March 2, 2010 (Non-Proprietary)
2. AW-10-2769, Affidavit, Proprietary Information Notice, Copyright Notice, dated March 2, 2010 (Non-Proprietary)
3. "AP1000 Shield Building Construction and Inspection Update (revised)" Presentation - (Proprietary)
4. "AP1000 Shield Building Construction and Inspection Update (revised)" Presentation- (Non-Proprietary)

cc:	D. Jaffe	- U.S. NRC	4E
	E. McKenna	- U.S. NRC	4E
	B. Gleaves	- U.S. NRC	4E

ENCLOSURE 1

AW-10-2769

APPLICATION FOR WITHHOLDING
PROPRIETARY INFORMATION FROM DISCLOSURE



Westinghouse Electric Company
Nuclear Services
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U.S. Nuclear Regulatory Commission
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Your ref: Docket Number 52-006
Our ref: AW-10-2769

March 2, 2010

APPLICATION FOR WITHHOLDING PROPRIETARY
INFORMATION FROM PUBLIC DISCLOSURE

Subject: AP1000 Shield Building Construction and Inspection Update Information for the NRC
Meeting on 2/23/10

The Application for Withholding is submitted by Westinghouse Electric Company, LLC (Westinghouse), pursuant to the provisions of Paragraph (b) (1) of Section 2.390 of the Commission's regulations. It contains commercial strategic information proprietary to Westinghouse and customarily held in confidence.

The proprietary material for which withholding is being requested is identified in the proprietary version of the subject briefing presentations. In conformance with 10 CFR Section 2.390, Affidavit AW-10-2769 accompanies this Application for Withholding, setting forth the basis on which the identified proprietary information may be withheld from public disclosure.

Accordingly, it is respectfully requested that the subject information which is proprietary to Westinghouse be withheld from public disclosure in accordance with 10 CFR Section 2.390 of the Commission's regulations.

Correspondence with respect to this Application for Withholding or the accompanying affidavit should reference AW-10-2769 and should be addressed to James A. Gresham, Manager, Regulatory Compliance and Plant Licensing, Westinghouse Electric Company, LLC, P.O. Box 355, Pittsburgh, Pennsylvania, 15230-0355.

Very truly yours,

A handwritten signature in black ink, appearing to read "Robert Sisk".

Robert Sisk, Manager
Licensing and Customer Interface
Regulatory Affairs and Standardization

cc: G. Bacuta - U.S. NRC

ENCLOSURE 2

Affidavit

(with Proprietary Information Notice and Copyright Notice)

AW-10-2769
March 2, 2010

AFFIDAVIT

COMMONWEALTH OF PENNSYLVANIA:

SS

COUNTY OF ALLEGHENY:

Before me, the undersigned authority, personally appeared **Robert Sisk**, who, being by me duly sworn according to law, deposes and says that he is authorized to execute this Affidavit on behalf of Westinghouse Electric Company LLC (Westinghouse), and that the averments of fact set forth in this Affidavit are true and correct to the best of his knowledge, information, and belief:

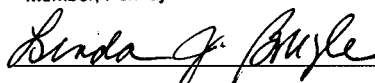


Robert Sisk, Manager
Licensing and Customer Interface
Regulatory Affairs and Standardization

Sworn to and subscribed
before me this 3RD day
of March 2010.

COMMONWEALTH OF PENNSYLVANIA

Notarial Seal
Linda J. Bugle, Notary Public
City of Pittsburgh, Allegheny County
My Commission Expires June 18, 2013
Member, Pennsylvania Association of Notaries


Notary Public

- (1) I am **Manager, Licensing and Customer Interface**, Westinghouse Electric Company, LLC (Westinghouse), and as such, I have been specifically delegated the function of reviewing the proprietary information sought to be withheld from public disclosure in connection with nuclear power plant licensing and rule making proceedings, and am authorized to apply for its withholding on behalf of Westinghouse.
- (2) I am making this Affidavit in conformance with the provisions of 10 CFR Section 2.390 of the Commission's regulations and in conjunction with the Westinghouse "Application for Withholding" accompanying this Affidavit.
- (3) I have personal knowledge of the criteria and procedures utilized by Westinghouse in designating information as a trade secret, privileged or as confidential commercial or financial information.
- (4) Pursuant to the provisions of paragraph (b)(4) of Section 2.390 of the Commission's regulations, the following is furnished for consideration by the Commission in determining whether the information sought to be withheld from public disclosure should be withheld.
 - (i) The information sought to be withheld from public disclosure is owned and has been held in confidence by Westinghouse.
 - (ii) The information is of a type customarily held in confidence by Westinghouse and not customarily disclosed to the public. Westinghouse has a rational basis for determining the types of information customarily held in confidence by it and, in that connection, utilizes a system to determine when and whether to hold certain types of information in confidence. The application of that system and the substance of that system constitutes Westinghouse policy and provides the rational basis required.

Under that system, information is held in confidence if it falls in one or more of several types, the release of which might result in the loss of an existing or potential competitive advantage, as follows:

 - (a) The information reveals the distinguishing aspects of a process (or component, structure, tool, method, etc.) where prevention of its use by any of Westinghouse's competitors without license from Westinghouse constitutes a competitive economic advantage over other companies.

- (b) It consists of supporting data, including test data, relative to a process (or component, structure, tool, method, etc.), the application of which data secures a competitive economic advantage, e.g., by optimization or improved marketability.
- (c) Its use 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 a similar product.
- (d) It reveals cost or price information, production capacities, budget levels, or commercial strategies of Westinghouse, its customers or suppliers.
- (e) It reveals aspects of past, present, or future Westinghouse or customer funded development plans and programs of potential commercial value to Westinghouse.
- (f) It contains patentable ideas, for which patent protection may be desirable.

There are sound policy reasons behind the Westinghouse system which include the following:

- (a) The use of such information by Westinghouse gives Westinghouse a competitive advantage over its competitors. It is, therefore, withheld from disclosure to protect the Westinghouse competitive position.
- (b) It is information that is marketable in many ways. The extent to which such information is available to competitors diminishes the Westinghouse ability to sell products and services involving the use of the information.
- (c) Use by our competitor would put Westinghouse at a competitive disadvantage by reducing his expenditure of resources at our expense.
- (d) Each component of proprietary information pertinent to a particular competitive advantage is potentially as valuable as the total competitive advantage. If competitors acquire components of proprietary information, any one component

may be the key to the entire puzzle, thereby depriving Westinghouse of a competitive advantage.

- (e) Unrestricted disclosure would jeopardize the position of prominence of Westinghouse in the world market, and thereby give a market advantage to the competition of those countries.
- (f) The Westinghouse capacity to invest corporate assets in research and development depends upon the success in obtaining and maintaining a competitive advantage.
- (iii) The information is being transmitted to the Commission in confidence and, under the provisions of 10 CFR Section 2.390, it is to be received in confidence by the Commission.
- (iv) The information sought to be protected is not available in public sources or available information has not been previously employed in the same original manner or method to the best of our knowledge and belief.
- (v) The proprietary information sought to be withheld in this submittal is that which is appropriately marked in the presentation entitled, **“AP1000 Shield Building Construction and Inspection Information for the NRC Meeting on 2/23/10 (FINAL)”**, in support of the AP1000 Design Certification Amendment Application, being transmitted by Westinghouse letter (**DCP_NRC_002803**) and Application for Withholding Proprietary Information from Public Disclosure, to the Document Control Desk. The proprietary information as submitted by Westinghouse for the AP1000 Design Certification Amendment application is expected to be applicable in all licensee submittals referencing the AP1000 Design Certification and the AP1000 Design Certification Amendment Application in response to certain NRC requirements for justification of compliance of the safety system to regulations.

This information is part of that which will enable Westinghouse to:

- (a) Manufacture and deliver products to utilities based on proprietary designs.

- (b) Advance the AP1000 Design and reduce the licensing risk for the application of the AP1000 Design Certification
- (c) Determine compliance with regulations and standards
- (d) Establish design requirements and specifications for the system.

Further this information has substantial commercial value as follows:

- (a) Westinghouse plans to sell the use of similar information to its customers for purposes of plant construction and operation.
- (b) Westinghouse can sell support and defense of safety systems based on the technology in the reports.
- (c) The information requested to be withheld reveals the distinguishing aspects of an approach and schedule which was developed by Westinghouse.

Public disclosure of this proprietary information is likely to cause substantial harm to the competitive position of Westinghouse because it would enhance the ability of competitors to provide similar digital technology safety systems and licensing defense services for commercial power reactors without commensurate expenses. Also, public disclosure of the information would enable others to use the information to meet NRC requirements for licensing documentation without purchasing the right to use the information.

The development of the technology described in part by the information is the result of applying the results of many years of experience in an intensive Westinghouse effort and the expenditure of a considerable sum of money.

In order for competitors of Westinghouse to duplicate this information, similar technical programs would have to be performed and a significant manpower effort, having the requisite talent and experience, would have to be expended.

Further the deponent sayeth not.

PROPRIETARY INFORMATION NOTICE

Transmitted herewith are proprietary and/or non-proprietary versions of documents furnished to the NRC in connection with requests for generic and/or plant-specific review and approval.

In order to conform to the requirements of 10 CFR 2.390 of the Commission's regulations concerning the protection of proprietary information so submitted to the NRC, the information which is proprietary in the proprietary versions is contained within brackets, and where the proprietary information has been deleted in the non-proprietary versions, only the brackets remain (the information that was contained within the brackets in the proprietary versions having been deleted). The justification for claiming the information so designated as proprietary is indicated in both versions by means of lower case letters (a) through (f) located as a superscript immediately following the brackets enclosing each item of information being identified as proprietary or in the margin opposite such information. These lower case letters refer to the types of information Westinghouse customarily holds in confidence identified in Sections (4)(ii)(a) through (4)(ii)(f) of the affidavit accompanying this transmittal pursuant to 10 CFR 2.390(b)(1).

COPYRIGHT NOTICE

The reports transmitted herewith each bear a Westinghouse copyright notice. The NRC is permitted to make the number of copies of the information contained in these reports which are necessary for its internal use in connection with generic and plant-specific reviews and approvals as well as the issuance, denial, amendment, transfer, renewal, modification, suspension, revocation, or violation of a license, permit, order, or regulation subject to the requirements of 10 CFR 2.390 regarding restrictions on public disclosure to the extent such information has been identified as proprietary by Westinghouse, copyright protection notwithstanding. With respect to the non-proprietary versions of these reports, the NRC is permitted to make the number of copies beyond those necessary for its internal use which are necessary in order to have one copy available for public viewing in the appropriate docket files in the public document room in Washington, DC and in local public document rooms as may be required by NRC regulations if the number of copies submitted is insufficient for this purpose. Copies made by the NRC must include the copyright notice in all instances and the proprietary notice if the original was identified as proprietary.

ENCLOSURE 4

Westinghouse Non-Proprietary Class 3

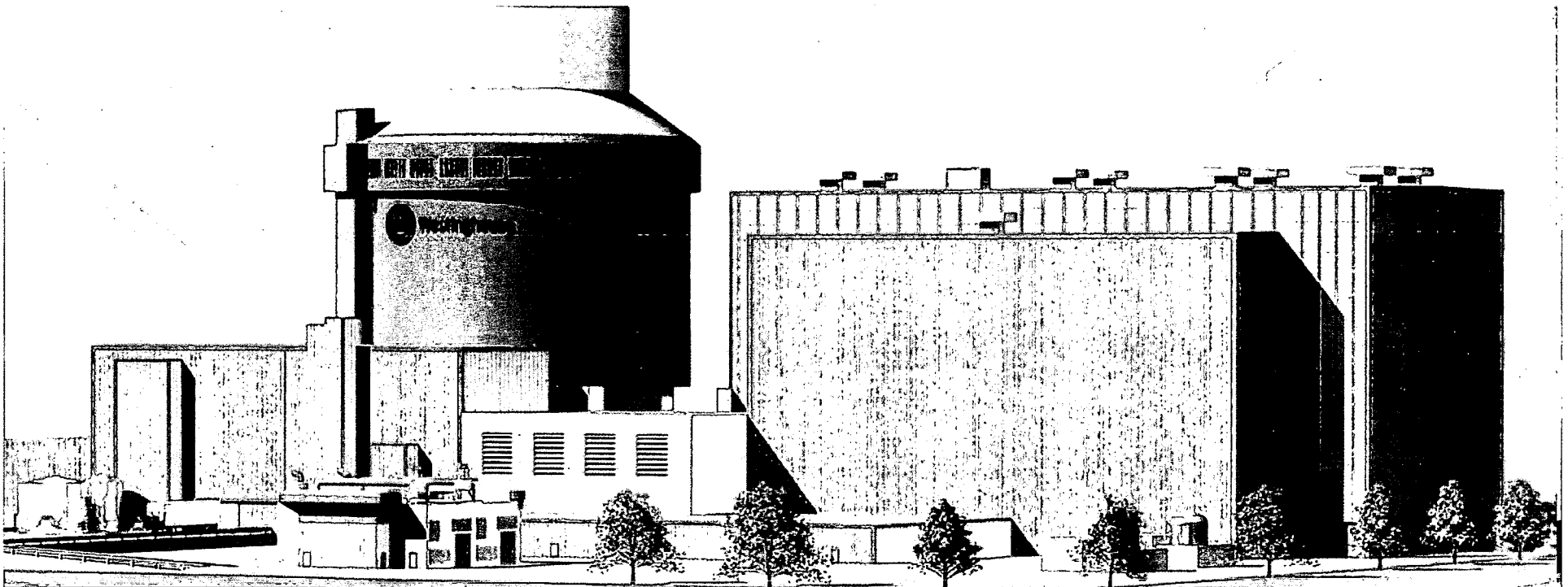
“AP1000 Shield Building Construction and Inspection Information for the
NRC Meeting on 2/23/10 (FINAL)”– (Non-Proprietary)

AP1000 Shield Building Construction and Inspection Update

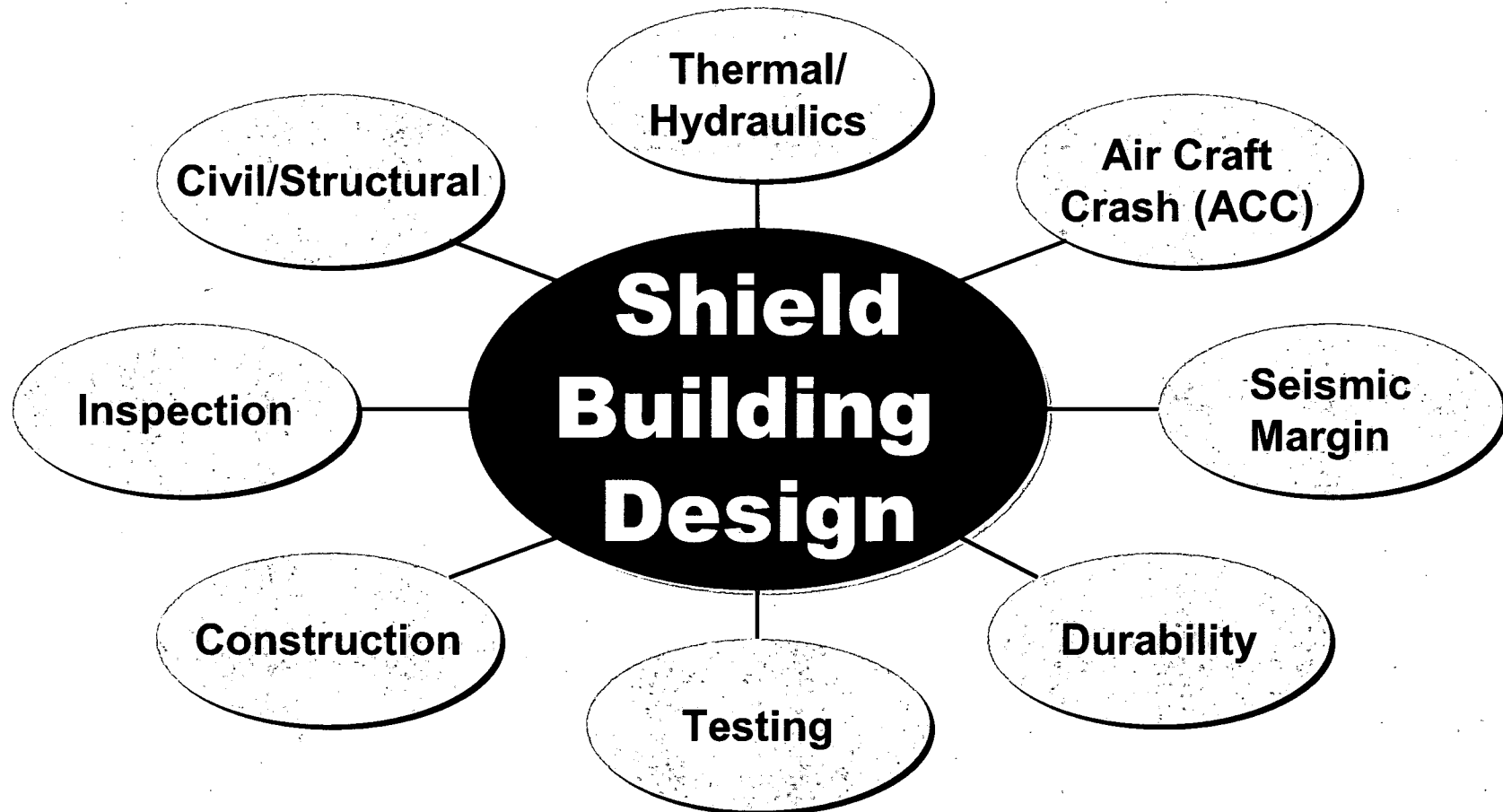


**NRC TECHNICAL SESSION
February 23, 2010 (revised)**

**Michael Corletti
Director, AP1000 Plant Engineering
Westinghouse Nuclear Power Plants**



Integrated Design Process



Concrete Inspection Summary

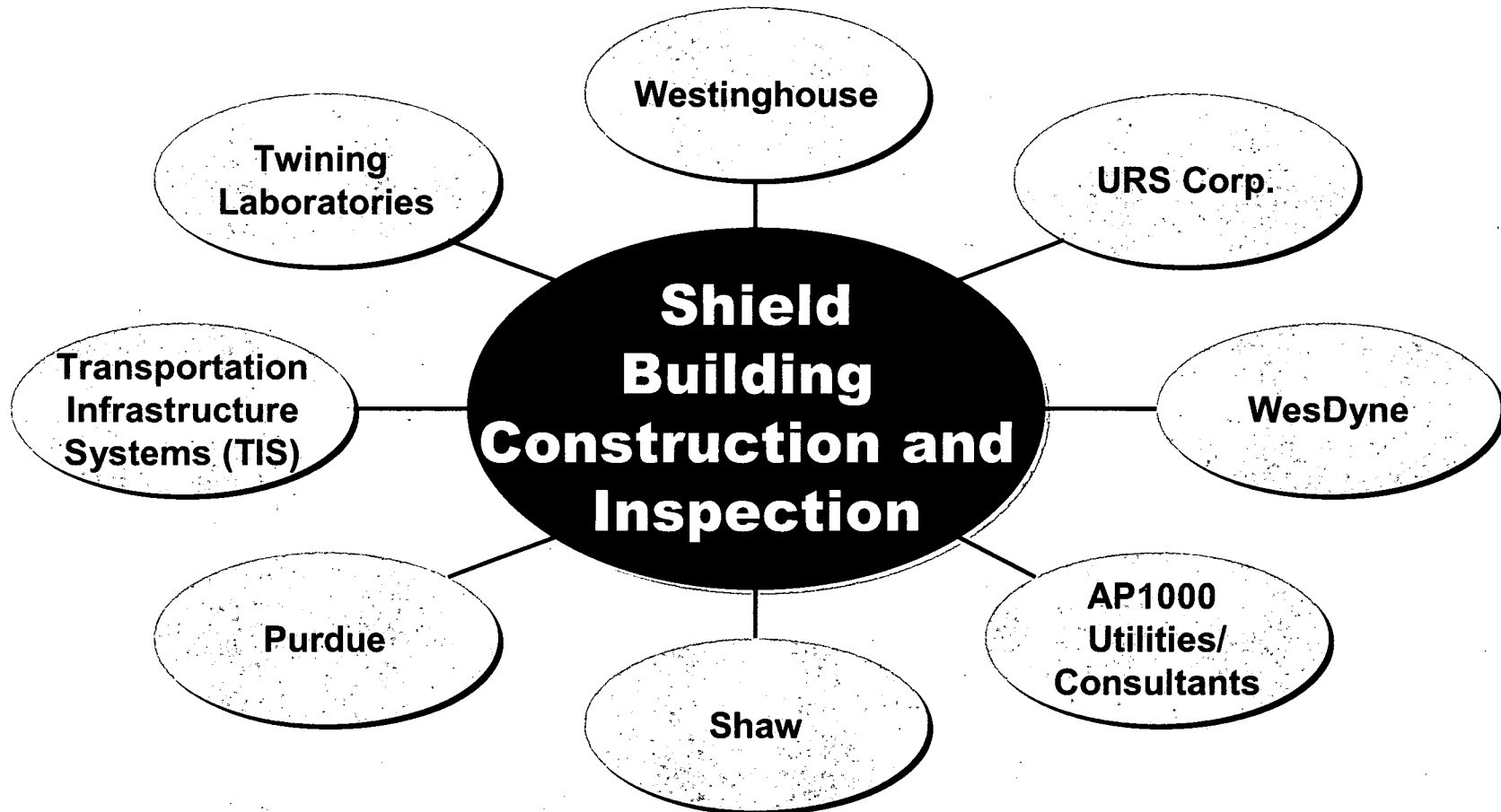
- NRC Letter



a, c

NRC Proprietary Detail of Key Technical Issues Resulting from the NRC Staff
Review of AP1000 Shield Building Report, October 15, 2009

Integrated Construction and Inspection Team





Agenda

a, c





Agenda (cont)

a, c





Shaw Construction Process



Construction and Inspection

a, c





Construction Management

a, c



AP1000

Construction Management

a, c

Shield Building Construction Sequence



a, c

Shield Building Construction Sequence (cont)

AP1000

a, c

CV 1st Ring Installed, Aux Building Up to elevation 155' and SC Shield Wall being installed

AP1000

a, c

CV 2nd and 3rd Rings Installed, Aux Building concrete complete, SC Shield Wall installation continues

AP1000

a, c



Shield Wall is installed up to elevation 248'-6"

a, c

AP1000

Air Inlet Structure Installed and CV Top head installed

a, c



Installation of the Roof Module

a, c

Concrete is placed on the roof to the area of the PCS tank, then the PCS tank is set and remaining concrete AP1000 is placed

a, c



Shield Building Mockups

a, c



Mockup Program Goals and Objectives



a, c



Mockup Locations

a, c



Shield Building Wall Section Mockup

AP1000

a, c

Mockup Construction and Test Plan



a, c

Mockup Construction and Test Plan

AP1000

a, c

Shield Building Concrete Placement Overview



a, c

Shield Building Concrete Placement Overview



a, c



Welding General Requirements

a, c



NDE General Requirements

a, c

Summary of Construction & Inspection



a, c

AP1000

a, c

Shield Building Post-Placement Concrete Inspection Agenda



a, c

Shield Building Post-Placement Concrete Inspection



a, c

NRC Proprietary Detail of Key Technical Issues Resulting from the NRC
Staff Review of AP1000 Shield Building Report, October 15, 2009

Addressing Post-Placement Concrete Inspection



a, c



Critical Defects in Concrete

a, c



Critical Defects in Concrete

a, c



Critical Defects in Concrete

a, c



Acceptance Criteria

a, c



Acceptance Criteria

a, c



NDE Technology Evaluation

a, c



Summary of Evaluated Post-Placement Concrete Inspection NDE Technologies



a, c



Conclusions

a, c



Example-Embedded Sensor

(Plan View)



a, c

Westinghouse/Shaw Post-Placement Concrete

NDE Testing and Inspection Program

AP1000

a, c

Westinghouse/Shaw Post-Placement Concrete NDE Testing and Inspection Program Approach

AP1000

a, c



NDE Sampling

a, c



NDE Sampling

a, c



Assessment of Reinforced Concrete Structures by Impact- Echo and Ultrasonic Pulse Echo

Nenad Gucunski and Francisco Romero
Transportation Infrastructure Systems (TIS)

AP1000

Ultrasonic Pulse Echo

a, c

Automated IE and Ultrasonic Testing Using Stepper



a, c



Impact-Echo Grading Tool

a, b, c

Impact-Echo Delamination Assessment



a, b, c



Impact-Echo Data Visualization

a, b, c

Purdue NDE Testing – Completed January 29, 2010



a, c

Purdue Specimen Test #1: IE Raw Data



a, b, c

Purdue – Raw Data Scans for 2 Specimens



a, b, c



Waltz Mill NDE Demo

a, c





Waltz Mill NDE Demonstration

a, c





Waltz Mill NDE Demonstration

a, c





Full Scale Mockup Tests

a, c



Summary Post-Placement Concrete Inspection



- Identified critical defects and acceptance criteria
- Seven NDE Technologies were evaluated
- Going forward with Impact-Echo Method (IEM) for testing on mockups
- Developed Inspection Plan Approach
- Extensive testing of mockups underway
 - Purdue (completed)
 - Waltz Mill (in progress)
 - Shaw replicas (near future)

Shield Building Construction / Inspection Summary



- Inspection Techniques
 - An acceptance criteria for concrete inspection in the Shield Building has been developed
 - WEC is demonstrating feasibility of NDE inspection techniques through two independent methods
 - Acceptable inspection techniques will be described in SB report
- Construction Qualification for Shield Building
 - Construction techniques will be qualified using construction mockups
 - Site construction implemented via qualification
 - NDE Inspection techniques will be applied to construction mock-ups to validate acceptance criteria has been met
- A routine inspection program is not envisioned for the Shield Building
 - However the Shield Building design can accommodate inspections using NDE technologies throughout the life of the plant
 - Statistical sampling can be used to provide 95% confidence / 95% probability