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CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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**Declarations under Rule 4.17:**

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))

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- (74) Agent: **SEYMOUR, Michael, J.**; Babcock & Wilcox Power Generation Group, Inc., I.P. DEPT - BVCB2K, 20 S. Van Buren Avenue, Barberton, OH 44203 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ,

- (54) Title: NUCLEAR POWER FACILITY

(57) Abstract: A nuclear island includes at least one nuclear reactor. A turbine island includes at least a turbine building housing at least one turbine driven by steam generated by the nuclear reactor. A protected area has a perimeter protected by at least one fence. An isolation zone surrounds the protected area and includes intrusion detection devices configured to detect unauthorized approach toward the protected area. The nuclear island is disposed inside the protected area, and the turbine island is disposed outside of and spaced apart from the protected area.



INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US2012/024170

<p><b>A. CLASSIFICATION OF SUBJECT MATTER</b>                  IPC(8) - G21C 9/00 (2012.01)                  USPC - 376/277                  According to International Patent Classification (IPC) or to both national classification and IPC</p>																							
<p><b>B. FIELDS SEARCHED</b></p> <p>Minimum documentation searched (classification system followed by classification symbols)                  IPC(8) - G08B 1/08, 21/02, 23/00; G21C 9/00 (2012.01)                  USPC - 52/106; 340/573.1, 825.49; 376/277</p> <p>Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched</p> <p>Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)                  PatBase, Google Patents, Google</p>																							
<p><b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b></p> <table border="1"> <thead> <tr> <th>Category*</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>X</td> <td>US 4,304,633 A (TOYOUJI) 08 December 1981 (08.12.1981) entire document</td> <td>19</td> </tr> <tr> <td>Y</td> <td>US 2009/0271207 A1 (LANIGAN et al) 29 October 2009 (29.10.2009) entire document</td> <td>1-4, 15-17, 20, 21, 30</td> </tr> <tr> <td>Y</td> <td>US 2009/0271207 A1 (LANIGAN et al) 29 October 2009 (29.10.2009) entire document</td> <td>1-4, 15-17, 20, 21</td> </tr> <tr> <td>Y</td> <td>US 3,037,726 A (PHILLIPS) 05 June 1962 (05.06.1962) entire document</td> <td>2, 3/2, 4/3/2</td> </tr> <tr> <td>Y</td> <td>Metalith Anti-Ram Vehicle and Blast Mitigation Barriers. Infrastructure Defense Technologies. Archived 2006-05-06 [retrieved on 2012-05-30]. Retrieved from the Internet: &lt;URL: http://www.themetalith.com/metalith-blasttests.html&gt;. entire document.</td> <td>3, 4, 15-17</td> </tr> <tr> <td>Y</td> <td>STUBSTAD et al. Design Procedures for Underground Heat Sink Systems. April 1979 [retrieved on 2012-05-30]. Retrieved from the Internet: &lt;URL: http://oai.dtic.mil/oai/oai?verb=getRecord&amp;metadataPrefix=html&amp;identifier=ADA068926&gt;. Abstract.</td> <td>30</td> </tr> </tbody> </table>			Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	X	US 4,304,633 A (TOYOUJI) 08 December 1981 (08.12.1981) entire document	19	Y	US 2009/0271207 A1 (LANIGAN et al) 29 October 2009 (29.10.2009) entire document	1-4, 15-17, 20, 21, 30	Y	US 2009/0271207 A1 (LANIGAN et al) 29 October 2009 (29.10.2009) entire document	1-4, 15-17, 20, 21	Y	US 3,037,726 A (PHILLIPS) 05 June 1962 (05.06.1962) entire document	2, 3/2, 4/3/2	Y	Metalith Anti-Ram Vehicle and Blast Mitigation Barriers. Infrastructure Defense Technologies. Archived 2006-05-06 [retrieved on 2012-05-30]. Retrieved from the Internet: <URL: http://www.themetalith.com/metalith-blasttests.html>. entire document.	3, 4, 15-17	Y	STUBSTAD et al. Design Procedures for Underground Heat Sink Systems. April 1979 [retrieved on 2012-05-30]. Retrieved from the Internet: <URL: http://oai.dtic.mil/oai/oai?verb=getRecord&metadataPrefix=html&identifier=ADA068926>. Abstract.	30
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<p><input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/></p>																							
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"P" document published prior to the international filing date but later than the priority date claimed																							
<p>Date of the actual completion of the international search 30 May 2012</p>		<p>Date of mailing of the international search report <b>08 JUN 2012</b></p>																					
<p>Name and mailing address of the ISA/US                  Mail Stop PCT, Attn: ISA/US, Commissioner for Patents                  P.O. Box 1450, Alexandria, Virginia 22313-1450                  Facsimile No. 571-273-3201</p>		<p>Authorized officer:                  Blaine R. Copenheaver                  PCT Helpdesk: 571-272-4300                  PCT OSP: 571-272-7774</p>																					

**INTERNATIONAL SEARCH REPORT**

International application No.

PCT/US2012/024170

**Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
3.  Claims Nos.: 5-14, 18, 22-29  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

1.  As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2.  As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
3.  As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
  
4.  No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

- Remark on Protest**
- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
  - The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
  - No protest accompanied the payment of additional search fees.