

PATENT ASSIGNMENT COVER SHEET

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 Stylesheet Version v1.2

EPAS ID: PAT5078065

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	SECURITY INTEREST
SEQUENCE:	1

CONVEYING PARTY DATA

Name	Execution Date
WESTINGHOUSE ELECTRIC COMPANY LLC	08/01/2018
FAUSKE AND ASSOCIATES LLC	08/01/2018

RECEIVING PARTY DATA

Name:	CREDIT SUISSE AG, CAYMAN ISLANDS BRANCH, AS COLLATERAL AGENT
Street Address:	11 MADISON AVENUE
City:	NEW YORK
State/Country:	NEW YORK
Postal Code:	10010

PROPERTY NUMBERS Total: 465

Property Type	Number
Patent Number:	6055288
Patent Number:	6115440
Patent Number:	6127651
Patent Number:	6164886
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Patent Number:	6181759
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Patent Number:	6305397
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PATENT

Property Type	Number
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Application Number:	15637621
Application Number:	15801398
Application Number:	15701477
Application Number:	15807801
Application Number:	15814622
Patent Number:	9020091

CORRESPONDENCE DATA

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Address Line 4: WASHINGTON, D.C. 20005

PATENT

REEL: 046708 FRAME: 0234

ATTORNEY DOCKET NUMBER:	F178433 1ST LIEN
NAME OF SUBMITTER:	JONATHAN LARSON
SIGNATURE:	/Jonathan Larson/
DATE SIGNED:	08/01/2018

Total Attachments: 94

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SCHEDULE A

PATENT COLLATERAL

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date (Publication date)	Grant No. (Publication No.)
Westinghouse Electric Company LLC	Nuclear reactor vessel	Granted	7/24/1998	09/122,288	4/25/2000	6,055,288
Westinghouse Electric Company LLC	Quick release, removable top nozzle assembly	Granted	4/29/1998	09/069,354	9/5/2000	6,115,440
Westinghouse Electric Company LLC	Welding apparatus and method	Granted	6/1/1999	09/171,750	10/3/2000	6,127,651
Westinghouse Electric Company LLC	Bolt with integral locking member	Granted	8/24/1999	09/382,021	12/26/2000	6,164,886
Westinghouse Electric Company LLC	Stud tensioning method	Granted	6/24/1999	09/339,459	1/2/2001	6,167,764
Westinghouse Electric Company LLC	Method for tube plug removal	Granted	7/23/1999	09/360,089	1/30/2001	6,181,759
Westinghouse Electric Company LLC	Method for tube plug removal	Granted	9/10/1999	09/393,801	2/20/2001	6,189,212
Westinghouse Electric Company LLC	Acid fluxes for metal reclamation from contaminated solids	Granted	9/2/1999	09/389,673	6/5/2001	6,241,800
Westinghouse Electric Company LLC	Unitary, transportable, assembled nuclear steam supply system with life time fuel supply and method of operating same	Granted	9/9/1999	09/392,011	7/10/2001	6,259,760
Westinghouse Electric Company LLC	Lower reactor internals up-ending device	Granted	10/13/1999	09/417,350	7/24/2001	6,266,386

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Method and apparatus for preventing relative rotation of tube members in a control rod drive mechanism	Granted	11/19/1999	09/442,283	8/14/2001	6,275,556
Westinghouse Electric Company LLC	Method and apparatus for focusing propagating wave paths of a phased array in spherically-bounded materials	Granted	11/17/1999	09/441,890	8/28/2001	6,279,397
Westinghouse Electric Company LLC	Slidable comb assembly for burnable poison rod transfer device	Granted	7/27/1999	09/362,005	8/28/2001	6,282,254
Westinghouse Electric Company LLC	Independent tube position verification system	Granted	7/9/1999	09/349,981	8/28/2001	6,282,461
Westinghouse Electric Company LLC	Collar clamp assembly for repairing core spray piping	Granted	10/21/1999	09/422,088	9/25/2001	6,293,593
Westinghouse Electric Company LLC	Method of sealing a reactor pressure vessel	Granted	9/28/1999	09/407,571	10/9/2001	6,301,319
Westinghouse Electric Company LLC	Tunable anticipatory output response valve control	Granted	9/13/2000	09/661,310	10/23/2001	6,305,397
Westinghouse Electric Company LLC	Retaining apparatus and method for use in a nuclear reactor	Granted	2/7/2000	09/498,736	10/23/2001	6,305,651
Westinghouse Electric Company LLC	Fretting resistant spring design	Granted	10/23/2000	09/694,466	10/30/2001	6,310,932
Westinghouse Electric Company LLC	BWR jet pump wedge keeper	Granted	12/1/2000	09/726,419	11/20/2001	6,320,923

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Interlock assembly for burnable poison rod transfer device	Granted	7/27/1999	09/362,004	12/4/2001	6,327,322
Westinghouse Electric Company LLC	Thermal barrier and reactor coolant pump incorporating the same	Granted	3/7/2000	09/520,860	12/11/2001	6,328,541
Westinghouse Electric Company LLC	Reduced in-core instrument patterns for pressurized water reactors	Granted	11/6/1998	09/187,225	3/5/2002	6,353,650
Westinghouse Electric Company LLC	Anchor assembly for fuel bundle	Granted	6/19/2000	09/596,334	3/12/2002	6,356,614
Westinghouse Electric Company LLC	Method of repairing a reactor coolant pump shaft and a reactor coolant pump repaired by such method	Granted	6/6/2000	09/587,763	3/19/2002	6,358,000
Westinghouse Electric Company LLC	Method of sealing container for handling radioactive debris	Granted	3/10/1999	09/265,825	3/19/2002	6,359,187
Westinghouse Electric Company LLC	Control element assembly position verification apparatus	Granted	10/6/1998	09/166,902	4/30/2002	6,380,734
Westinghouse Electric Company LLC	Shroud connection for replacement core spray pipe	Granted	1/27/2000	09/492,303	5/21/2002	6,390,509
Westinghouse Electric Company LLC	Spent nuclear fuel assembly stacking method	Granted	2/21/2000	09/510,435	5/21/2002	6,393,086
Westinghouse Electric Company LLC	Blowdown manifold evacuator for nuclear power plants	Granted	4/14/2000	09/549,527	6/4/2002	6,397,877
Westinghouse Electric Company LLC	Removable spent fuel handling machine rail	Granted	2/12/1999	09/248,987	6/11/2002	6,404,836

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Positive locking device for reactor instrumentation protection sleeve assembly	Granted	11/3/1999	09/433,304	6/18/2002	6,406,064
Westinghouse Electric Company LLC	Magnetic filtration method for minimizing radioactive waste during abrasive waterjet cutting	Granted	11/3/2000	09/704,672	7/16/2002	6,419,833
Westinghouse Electric Company LLC	Eddy current testing probe	Granted	7/3/2000	09/609,788	8/6/2002	6,429,649
Fauske & Associates, Inc.	Foam detector apparatus and method	Granted	5/31/2000	09/584,222	8/20/2002	6,435,710
Westinghouse Electric Company LLC	Floating ultrasonic testing end effector for a robotic arm	Granted	11/8/1999	09/435,548	10/1/2002	6,459,748
Westinghouse Electric Company LLC	Energize to actuate engineered safety features actuation system and testing method therefor	Granted	5/26/2000	09/579,121	10/8/2002	6,462,667
Westinghouse Electric Company LLC	Jack screw gap replacement device	Granted	1/7/2000	09/479,225	10/8/2002	6,463,114
Westinghouse Electric Company LLC	Decontamination method	Granted	7/26/2001	09/915,752	10/15/2002	6,466,636
Westinghouse Electric Company LLC	Steam generator tube support grid array	Granted	4/12/2000	09/547,765	10/22/2002	6,467,439
Westinghouse Electric Company LLC	Retaining apparatus for connecting a pipe system to a vessel in a nuclear reactor	Granted	3/20/2000	09/531,408	10/22/2002	6,467,814
Westinghouse Electric Company LLC	Dual optical communication network for class 1E reactor protection systems	Granted	2/11/1999	09/247,868	10/29/2002	6,473,479

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Flow condition monitor	Granted	10/27/2000	09/697,725	11/12/2002	6,480,793
Westinghouse Electric Company LLC	Digital plant protection system with engineered safety features component control system	Granted	9/17/1999	09/398,422	11/19/2002	6,484,126
Westinghouse Electric Company LLC	Overload indicator	Granted	8/30/2000	09/651,198	12/3/2002	6,488,434
Westinghouse Electric Company LLC	Alarm management system	Granted	5/10/2000	09/568,471	12/10/2002	6,492,901
Westinghouse Electric Company LLC	Method of calibrating exit thermocouples in a nuclear reactor	Granted	10/11/2000	09/686,427	12/10/2002	6,493,412
Westinghouse Electric Company LLC	Decontamination method	Granted	5/10/2000	09/568,434	1/14/2003	6,506,955
Westinghouse Electric Company LLC	Seal arrangement for in-core instrument housing	Granted	3/28/2001	09/818,534	2/18/2003	6,522,708
Westinghouse Electric Company LLC	Nuclear in-core instrument (ICI) assembly with compressed flexible hose sheath	Granted	11/12/1999	09/439,086	2/18/2003	6,522,709
Westinghouse Electric Company LLC	Fastened spacer for grid of a nuclear reactor with associated method	Granted	7/3/2001	09/898,943	2/18/2003	6,522,710
Westinghouse Electric Company LLC	Process protection system	Granted	2/10/200	09/501,804	3/11/2003	6,532,550
Westinghouse Electric Company LLC	Mandrel supported tensile test to evaluate weld bonding	Granted	7/9/2001	09/901,459	5/6/2003	6,557,421

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Nuclear plant containment with prefabricated component support structure	Granted	3/11/2002	10/095,632	5/27/2003	6,570,950
Westinghouse Electric Company LLC	Remote bolt installation tool	Granted	11/3/2000	09/705,989	6/17/2003	6,578,451
Westinghouse Electric Company LLC	Method and system for identifying the source of a signal	Granted	7/31/2000	09/629,286	7/22/2003	6,596,998
Westinghouse Electric Company LLC	Nuclear reactor with improved grid	Granted	3/6/2002	10/092,946	8/12/2003	6,606,369
Westinghouse Electric Company LLC	Tube non-destructive testing probe drive elevator and contamination containment system	Granted	1/3/2002	10/038,318	8/19/2003	6,606,920
Westinghouse Electric Company LLC	Method and system for monitoring radiation and rejecting noise	Granted	6/26/2001	09/891,781	9/30/2003	6,627,898
Westinghouse Electric Company LLC	Method of retrofitting a reactor pressure vessel head assembly	Granted	10/5/2001	09/972,728	10/28/2003	6,639,960
Westinghouse Electric Company LLC	Stud enclosure and method of use	Granted	10/8/2001	09/973,500	11/25/2003	6,654,436
Westinghouse Electric Company LLC	Method of operating a nuclear power plant at multiple power levels	Granted	9/23/2002	10/252,496	1/6/2004	6,674,826
Westinghouse Electric Company LLC	Instrumentation electrical connector protector	Granted	11/15/2000	09/713,552	1/27/2004	6,682,358
Westinghouse Electric Company LLC	Unirradiated nuclear fuel transport system	Granted	12/19/2001	10/025,728	1/27/2004	6,683,931

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Fluidized bed reaction design	Granted	2/21/2000	09/507,605	4/13/2004	6,719,952
Westinghouse Electric Company LLC	Seal arrangement for in-core instrument housing	Granted	11/26/2002	10/304,977	4/13/2004	6,721,381
Westinghouse Electric Company LLC	Take-up reel for flexible elongated members	Granted	1/5/2001	09/755,244	4/27/2004	6,726,140
Westinghouse Electric Company LLC	High energy absorption top nozzle for a nuclear fuel assembly	Granted	5/22/2003	10/444,469	5/18/2004	6,738,447
Westinghouse Electric Company LLC	Unirradiated nuclear fuel component transport system	Granted	4/28/2003	10/424,480	6/8/2004	6,748,042
Westinghouse Electric Company LLC	Method of closing a pressure vessel	Granted	11/27/2002	10/306,809	7/20/2004	6,763,570
Westinghouse Electric Company LLC	Method and apparatus for shipping substantially pure uranium hexafluoride	Granted	2/5/2003	10/358,945	7/20/2004	6,765,221
Westinghouse Electric Company LLC	Energize to actuate engineered safety features actuation system and testing method therefor	Granted	5/24/2002	10/154,722	9/7/2004	6,788,213
Westinghouse Electric Company LLC	Integral PWR with diverse emergency cooling and method of operating same	Granted	3/9/2001	09/803,418	9/21/2004	6,795,518
Westinghouse Electric Company LLC	Method of optimizing risk informed inspections of heat exchangers	Granted	11/29/2001	10/011,454	9/28/2004	6,799,124
Westinghouse Electric Company LLC	Subcritical reactivity measurement method	Granted	11/21/2002	10/301,044	10/5/2004	6,801,593

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Westinghouse Electric Company LLC	Process for synthesizing a database for nuclear power plant containment evaluation	Granted	10/3/2000	09/677,899	10/5/2004	6,801,885
Westinghouse Electric Company LLC	Eddy current data union	Granted	4/12/2002	10/121,749	11/23/2004	6,823,269
Westinghouse Electric Company LLC	Component interface module	Granted	8/15/2002	10/219,994	1/11/2005	6,842,669
Westinghouse Electric Company LLC	Nondestructive examination of high pressure turbine cylinders	Granted	8/22/2003	10/646,136	5/3/2005	6,886,407
Westinghouse Electric Company LLC	Method for controlling steam generators	Granted	6/23/2004	10/874,666	5/3/2005	6,886,502
Westinghouse Electric Company LLC	Reactor pressure vessel	Granted	3/27/2003	10/401,284	5/3/2005	6,888,909
Westinghouse Electric Company LLC	Method of establishing a nuclear reactor core fuel assembly loading pattern	Granted	2/25/2003	10/374,691	8/16/2005	6,931,090
Westinghouse Electric Company LLC	Jet pump assembly repair method	Granted	4/22/2004	10/830,452	4/4/2006	7,023,949
Westinghouse Electric Company LLC	Nonintrusive method for the detection of concealed special nuclear material	Granted	4/6/2004	10/818,848	12/19/2006	7,151,815
Westinghouse Electric Company LLC	Device and method for ultrasonic inspection using profilometry data	Granted	1/7/2005	11/031,841	3/27/2007	7,194,908
Westinghouse Electric Company LLC	An eddy current method of inspecting a pressure vessel shell	Granted	12/8/2004	11/007,514	5/15/2007	7,218,101

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Westinghouse Electric Company LLC	Method and algorithm for searching and optimizing nuclear reactor core loading patterns	Granted	11/19/2004	10/993249	5/29/2007	7,224,761
Westinghouse Electric Company LLC	Spectroscopy-based safety system and method form a vacuum ARC remelt furnace	Granted	6/2/2005	11/143178	8/14/2007	7,257,145
Westinghouse Electric Company LLC	On-line testable solid state reversing DC motor starter	Granted	8/30/2006	11/512,916	7/8/2008	7,397,222
Westinghouse Electric Company LLC	Advanced gray rod control assembly	Granted	7/26/2005	11/189472	8/12/2008	7,412,021
Westinghouse Electric Company LLC	Current limiting DC motor starter circuit	Granted	8/30/2006	11/512476	9/2/2008	7,420,343
Westinghouse Electric Company LLC	Nuclear fuel assembly control rod drive thimble to bottom nozzle connector	Granted	6/9/2006	11/450,077	11/18/2008	7,453,972
Westinghouse Electric Company LLC	Solid state reversing AC motor with DC power source	Granted	8/30/2006	11/512,474	12/2/2008	7,459,877
Westinghouse Electric Company LLC	Tube-in-tube threaded dashpot end plub	Granted	10/18/2006	11/583,466	4/7/2009	7,515,674
Westinghouse Electric Company LLC	Nuclear fuel assembly	Granted	11/1/2006	11/591,328	2/23/2010	7,668,280
Westinghouse Electric Company LLC	Tube-in-tube threaded dashpot end plub	Granted	12/11/2008	12/332,662	2/23/2010	7,668,284
Westinghouse Electric Company LLC	Eddy current data interpolation/extrapolation	Granted	12/11/2007	11/954,043	5/4/2010	7,711,499

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Method of assessing the performance of a steam generator	Granted	1/31/2007	11/669194	6/1/2010	7,726,169
Westinghouse Electric Company LLC	Enhanced steam dump (bypass) control system	Granted	7/14/2008	12/172,688	6/22/2010	7,742,555
Westinghouse Electric Company LLC	Computerized procedures system	Granted	10/20/2006	11/584,769	10/12/2010	7,813,817
Westinghouse Electric Company LLC	Two step dry Uo2 production process utilizing a positive sealing valve means between steps	Granted	7/20/2009	12/465,729	11/2/2010	7,824,640
Westinghouse Electric Company LLC	Nuclear fuel assembly protective grid	Granted	9/2/2004	10/932,908	2/15/2011	7,889,829
Westinghouse Electric Company LLC	Nuclear reactor downcomer flow deflector	Granted	5/8/2007	11/745,600	2/15/2011	7,889,830
Westinghouse Electric Company LLC	Subcritical reactivity measurement method	Granted	12/11/2008	12/332,577	2/22/2011	7,894,565
Westinghouse Electric Company LLC	Enhanced steam dump (bypass) control system	Granted	5/4/2010	12/773,388	5/17/2011	7,945,011
Westinghouse Electric Company LLC	Hydrogen generation process with dual pressure multi stage electrolysis	Granted	7/17/2007	11/778,863	7/12/2011	7,976,693
Westinghouse Electric Company LLC	Nuclear core component hold-down assembly	Granted	5/21/2008	12/124,195	8/9/2011	7,995,701
Westinghouse Electric Company LLC	Steam generator nondestructive examination method	Granted	12/2/2009	12/629,112	9/6/2011	8,011,249

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Neutron absorber consisting of refractory metal infused with discrete neutron absorber	Granted	2/8/2008	12/028,215	10/4/2011	8,031,826
Westinghouse Electric Company LLC	Non-destructive pipe scanner	Granted	4/29/2009	12/431,856	11/22/2011	8,061,208
Westinghouse Electric Company LLC	Neutron shielding panels for reactor pressure vessels	Granted	11/21/2008	12/275,525	11/22/2011	8,064,564
Westinghouse Electric Company LLC	Failure detection and mitigation in logic circuits	Granted	3/10/2009	12/401,559	2/14/2012	8,117,512
Westinghouse Electric Company LLC	Pipe scanner	Granted	5/4/2009	12/434,717	3/27/2012	8,141,442
Westinghouse Electric Company LLC	Method for analysis of pellet-cladding interaction	Granted	6/6/2006	11/447,357	4/3/2012	8,149,983
Westinghouse Electric Company LLC	Advanced logic system	Granted	10/28/2010	12/914,724	4/10/2012	8,156,251
Westinghouse Electric Company LLC	Electrical connector assembly, test lead assembly therefor, and associated method	Granted	12/10/2009	12/634,913	6/26/2012	8,206,186
Westinghouse Electric Company LLC	Inspection mode switching circuit	Granted	12/21/2009	12/642,935	7/3/2012	8,212,553
Westinghouse Electric Company LLC	Process for adding an organic compound to coolant water in a pressurized water reactor	Granted	3/31/2009	12/414,748	7/31/2012	8,233,581
Westinghouse Electric Company LLC	Steam generator dual head sludge lance and process lancing system	Granted	6/25/2008	12/145,828	8/7/2012	8,238,510

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Westinghouse Electric Company LLC	Nuclear fuel assembly protective bottom grid	Granted	6/9/2009	12/480,827	8/7/2012	8,238,511
Westinghouse Electric Company LLC	Dynamic port for measuring reactor coolant pump bearing oil level	Granted	6/29/2009	12/493,261	8/21/2012	8,246,313
Westinghouse Electric Company LLC	Control rod drive outer filter removal tool	Granted	9/22/2009	12/564,117	8/28/2012	8,254,516
Westinghouse Electric Company LLC	Triuranium disilicide nuclear fuel composition for use in light water reactors	Granted	6/30/2010	12/827,237	10/23/2012	8,293,151
Westinghouse Electric Company LLC	Inspection vehicle for a turbine disk	Granted	6/30/2010	12/826,789	12/18/2012	8,333,116
Westinghouse Electric Company LLC	Thermally activated shutdown seals for rotatable shafts	Granted	12/7/2009	12/631,888	1/22/2013	8,356,972
Westinghouse Electric Company LLC	Helically fluted tubular fuel rod support	Granted	8/10/2009	12/538,307	1/22/2013	8,358,733
Westinghouse Electric Company LLC	Nuclear fuel assembly support grid	Granted	10/30/2009	12/609,259	2/5/2013	8,369,475
Westinghouse Electric Company LLC	Helically fluted tubular fuel rod support	Granted	1/11/2005	11/033,434	2/12/2013	8,374,308
Westinghouse Electric Company LLC	Method of modeling steam generator and processing steam generator tube data of nuclear power plant	Granted	4/14/2010	12/760,148	3/5/2013	8,387,444
Westinghouse Electric Company LLC	Eddy current inspection probe for inspecting the interior of a tubular member	Granted	10/20/2009	12/582,196	3/5/2013	8,390,278

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Noise and vibration mitigation system for nuclear reactors employing an acoustic side branch resonator	Granted	2/15/2011	13/027,322	3/12/2013	8,393,437
Westinghouse Electric Company LLC	Nuclear reactor vessel fuel thermal insulating barrier	Granted	5/3/2007	11/743,844	3/19/2013	8,401,142
Westinghouse Electric Company LLC	Method for automated position verification	Granted	10/8/2010	12/900,819	4/2/2013	8,412,483
Westinghouse Electric Company LLC	System and method for removal of dissolved gases in makeup water of a water-cooled nuclear reactor	Granted	9/8/2010	12/877,145	4/9/2013	8,414,685
Westinghouse Electric Company LLC	Nuclear reactor cavity arrangements for ice condenser plants	Granted	3/7/2011	13/041,464	4/9/2013	8,416,911
Westinghouse Electric Company LLC	Method of improving the spent nuclear fuel burnup credit	Granted	12/20/2007	11/961,196	4/23/2013	8,428,215
Westinghouse Electric Company LLC	Calibration detection system and method	Granted	10/8/2010	12/900,555	5/7/2013	8,437,974
Westinghouse Electric Company LLC	Shipping package up-ender	Granted	4/18/2006	11/379,082	5/21/2013	8,447,006
Westinghouse Electric Company LLC	Anti-vibration bar clamping tool and method	Granted	6/2/2011	13/151,621	7/9/2013	8,479,392
Westinghouse Electric Company LLC	Nuclear reactor control rod spider assembly	Granted	4/16/2007	11/735,612	7/9/2013	8,483,346
Westinghouse Electric Company LLC	Upper internals arrangement for a pressurized water reactor	Granted	4/10/2007	11/733,248	7/9/2013	8,483,347

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Westinghouse Electric Company LLC	Cartridge type vortex suppression device	Granted	1/3/2008	11/968,708	8/27/2013	8,517,053
Westinghouse Electric Company LLC	Top guide inspection fixture	Granted	12/13/2010	12/965,966	9/3/2013	8,526,564
Westinghouse Electric Company LLC	Core shroud corner joints	Granted	12/10/2009	12/634,836	9/10/2013	8,532,245
Westinghouse Electric Company LLC	Nuclear reactor robust gray control rod	Granted	8/17/2007	11/840,424	9/10/2013	8,532,246
Westinghouse Electric Company LLC	Advanced gray rod control assembly	Granted	2/8/2008	12/028,119	9/17/2013	8,537,962
Westinghouse Electric Company LLC	Captive screw device and method	Granted	5/10/2011	13/104,308	9/24/2013	8,539,657
Westinghouse Electric Company LLC	Methodology for modeling the fuel rod power distribution within a nuclear reactor core	Granted	6/7/2011	13/154,509	10/1/2013	8,548,789
Westinghouse Electric Company LLC	Advanced logic system diagnostics and monitoring	Granted	10/28/2010	12/914,737	10/8/2013	8,554,953
Westinghouse Electric Company LLC	Nuclear reactor automatic depressurization system	Granted	12/20/2010	12/972,568	10/15/2013	8,559,584
Westinghouse Electric Company LLC	Cold shutdown assembly for sodium cooled reactor	Granted	1/27/2009	12/360,329	10/15/2013	8,559,585
Westinghouse Electric Company LLC	Under vessel local power range monitor exchange tool	Granted	5/6/2010	12/774,895	10/22/2013	8,561,287

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Unirradiated nuclear fuel component transport system	Granted	10/21/2010	12/908,932	10/22/2013	8,565,365
Westinghouse Electric Company LLC	Dynamic port for measuring reactor coolant pump bearing oil level	Granted	6/29/2012	13/537,093	10/29/2013	8,568,105
Westinghouse Electric Company LLC	Neutron absorber consisting of refractory metal infused with discrete neutron absorber	Granted	9/7/2011	13/226,552	10/29/2013	8,571,165
Westinghouse Electric Company LLC	Facility life management method	Granted	11/15/2002	10/298,157	10/29/2013	8,571,911
Westinghouse Electric Company LLC	Nuclear fuel assemblies with structural support replacement rods	Granted	1/13/2006	11/332,058	11/26/2013	8,594,269
Westinghouse Electric Company LLC	Inspection vehicle for a turbine disk	Granted	11/8/2012	13/671,666	12/3/2013	8,596,130
Westinghouse Electric Company LLC	Wireless transmission of nuclear instrumentation signals	Granted	10/13/2009	12/577,789	12/3/2013	8,599,987
Westinghouse Electric Company LLC	Control rod transfer device	Granted	3/23/2011	13/069,615	12/3/2013	8,599,988
Westinghouse Electric Company LLC	Process for application of lubricant to fuel rod during fuel assembly loading process	Granted	12/22/2009	12/644,257	12/3/3013	8,599,990
Westinghouse Electric Company LLC	Wedge positioning apparatus for jet pump assemblies in nuclear reactors	Granted	11/1/2010	12/916,660	12/10/2013	8,605,852
Westinghouse Electric Company LLC	Modular radial neutron reflector	Granted	10/14/2010	12/904,347	12/24/2013	8,615,065

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Neutron source assembly	Granted	2/1/2011	13/018,478	1/7/2014	8,625,733
Westinghouse Electric Company LLC	System for exchanging a component of a nuclear reactor	Granted	9/20/2010	12/885,640	1/21/2014	8,634,513
Westinghouse Electric Company LLC	Nuclear reactor alignment plate configuration	Granted	9/14/2007	11/855,196	1/28/2014	8,638,900
Westinghouse Electric Company LLC	Optimum configuration for fast reactors	Granted	11/29/2010	12/980,398	1/28/2014	8,638,901
Westinghouse Electric Company LLC	Miniature sludge lance apparatus	Granted	11/2/2010	12/938,027	2/11/2014	8,646,416
Westinghouse Electric Company LLC	Nuclear fuel rod plenum spring assembly	Granted	3/4/2014	12/985,430	3/4/2014	8,666,018
Westinghouse Electric Company LLC	Hatch mechanical locking system	Granted	10/20/2008	12/254,203	3/11/2014	8,670,514
Westinghouse Electric Company LLC	Digital nuclear control rod control system	Granted	6/3/2010	12/792,834	3/11/2014	8,670,515
Westinghouse Electric Company LLC	Nuclear fuel assembly hold down spring	Granted	10/11/2010	12/901,599	3/11/2014	8,670,519
Westinghouse Electric Company LLC	Nuclear fuel cladding having an exterior comprising burnable poison in contact with aqueous reactor coolant	Granted	8/18/2010	12/858,496	3/18/2014	8,675,809
Westinghouse Electric Company LLC	Self-powered wireless in-core detector	Granted	1/7/2011	12/986,217	3/25/2014	8,681,920

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Westinghouse Electric Company LLC	Pressurizer with a mechanically attached surge nozzle thermal sleeve	Granted	12/14/2010	12/967,167	3/25/2014	8,681,922
Westinghouse Electric Company LLC	Nuclear reactor fuel assembly	Granted	1/15/2008	12/014,133	3/25/2014	8,681,929
Westinghouse Electric Company LLC	Method of achieving automatic axial power distribution control	Granted	10/24/2011	13/279,596	4/15/2014	8,699,653
Westinghouse Electric Company LLC	Method of improving wear and corrosion resistance of rod control cluster assemblies	Granted	3/10/2011	13/044,690	4/15/2014	8,699,655
Westinghouse Electric Company LLC	Squib control circuit	Granted	9/19/2011	13/235,538	4/29/2014	8,710,805
Westinghouse Electric Company LLC	Retention apparatus employing wedge element and engagement assembly for use in a nuclear application	Granted	12/16/2011	13/328,148	5/6/2014	8,714,187
Westinghouse Electric Company LLC	Method and composition for removing deposits	Granted	1/26/2010	13/139,173	5/20/2014	8,728,246
Westinghouse Electric Company LLC	Nondestructive inspection method for a heat exchanger employing adaptive noise thresholding	Granted	10/1/2010	12/895,942	6/3/2014	8,742,752
Westinghouse Electric Company LLC	Minature sludge lance apparatus	Granted	4/1/2011	13/078,026	6/17/2014	8,752,511
Westinghouse Electric Company LLC	Underwater robotic venting and inspection system	Granted	4/23/2012	13/453,237	6/24/2014	8,757,084

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Westinghouse Electric Company LLC	Miniature sludge lance apparatus	Granted	4/1/2011	13/078,022	6/24/2014	8,757,104
Westinghouse Electric Company LLC	Rod position detection apparatus and method	Granted	9/22/2011	13/239,436	6/24/2014	8,761,329
Westinghouse Electric Company LLC	Wireless in-core neutron monitor	Granted	1/7/2011	12/986,242	7/1/2014	8,767,903
Westinghouse Electric Company LLC	Miniature sludge lance apparatus	Granted	4/1/2011	13/078,014	8/12/2014	8,800,499
Westinghouse Electric Company LLC	Miniature sludge lance apparatus	Granted	4/1/2011	13/078,017	8/12/2014	8,800,500
Westinghouse Electric Company LLC	Nuclear fuel rod pellet stack inspection	Granted	11/22/2011	13/302,104	9/23/2014	8,842,796
Westinghouse Electric Company LLC	Alternate feedwater injection system to mitigate the effects of aircraft impact on a nuclear power plant	Granted	9/24/2010	12/889,500	9/30/2014	8,848,854
Westinghouse Electric Company LLC	Method of segmenting irradiated boiling water reactor control rod blades	Granted	9/13/2012	13/612,905	10/14/2014	8,857,027
Westinghouse Electric Company LLC	Primary neutron source multiplier assembly	Granted	10/7/2010	12/899,596	10/28/2014	8,873,694
Westinghouse Electric Company LLC	Support apparatus for supporting dosimetry system in proximity to reactor apparatus	Granted	12/19/2011	13/329,497	11/18/2014	8,891,722
Westinghouse Electric Company LLC	Fuel rod internal pressure measurement	Granted	5/21/2008	12/124,398	12/2/2014	8,903,034

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Tubesheet walker for heat exchanger inspections	Granted	2/25/2013	13/775,354	1/20/2015	8,938,044
Westinghouse Electric Company LLC	Demister vane in situ cleaning fixture	Granted	1/5/2012	13/343,736	2/3/2015	8,945,291
Westinghouse Electric Company LLC	Nuclear reactor internal hydraulic control rod drive mechanism assembly	Granted	12/8/2011	13/314,506	2/10/2015	8,953,732
Westinghouse Electric Company LLC	Steam generator dual system sludge and loose parts collector	Granted	2/22/2008	12/035,722	2/10/2015	8,953,735
Westinghouse Electric Company LLC	Fuel handling area passive filtration design	Granted	6/2/2011	13/151,714	2/17/2015	8,958,522
Westinghouse Electric Company LLC	Deposition of integrated protective material into zirconium cladding for nuclear reactors by high-velocity thermal application	Granted	11/7/2012	13/670,808	3/3/2015	8,971,476
Westinghouse Electric Company LLC	Tubesheet gripping mechanism and method	Granted	3/5/2013	13/785,340	3/10/2015	8,973,648
Westinghouse Electric Company LLC	Conduit length adjustment apparatus and method	Granted	7/27/2012	13/559,764	3/17/2015	8,978,493
Westinghouse Electric Company LLC	Chemical cleaning method and system with steam injection	Granted	12/3/2009	13/063,443	4/7/2015	8,999,072
Westinghouse Electric Company LLC	Nuclear fuel assembly with a lock-support spacer grid	Granted	4/14/2008	12/102,123	4/28/2015	9,020,091
Westinghouse Electric Company LLC	Control rod drive shaft unlatching tool	Granted	6/2/2011	13/151,305	5/5/2015	9,025,720

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Nuclear control rod with flexure joint	Granted	6/7/2012	13/490,494	6/9/2015	9,053,824
Westinghouse Electric Company LLC	Protective grid attachment	Granted	3/3/2010	12/716,311	6/9/2015	9,053,826
Westinghouse Electric Company LLC	Nuclear fuel assembly with pivot dimpled grids	Granted	3/27/2009	12/412,411	6/9/2015	9,053,827
Westinghouse Electric Company LLC	Nuclear reactor bottom-mounted instrumentation nozzle repair method	Granted	3/11/2013	13/792,638	6/9/2015	9,053,828
Westinghouse Electric Company LLC	Method to extract tritium from irradiated boiling water reactor control rod blades	Granted	9/13/2012	13/612,917	6/16/2015	9,058,907
Westinghouse Electric Company LLC	Method and apparatus for refueling a nuclear reactor having an instrumentation penetration flange	Granted	1/16/2013	13/742,392	6/23/2015	9,064,607
Westinghouse Electric Company LLC	Inspection mode switching circuit	Granted	5/29/2012	13/482,251	6/30/2015	9,068,741
Westinghouse Electric Company LLC	Upper internals arrangement for a pressurized water reactor	Granted	12/15/2009	12/638,138	7/14/2015	9,082,519
Westinghouse Electric Company LLC	Captive screw	Granted	8/20/2013	13/970,634	7/28/2015	9,091,292
Westinghouse Electric Company LLC	Nuclear steam generator steam nozzle flow restrictor	Granted	8/3/2011	13/197,010	7/28/2015	9,091,429
Westinghouse Electric Company LLC	Heavy radial neutron reflector for pressurized water reactors	Granted	12/20/2012	13/721,138	7/28/2015	9,093,183

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Method of replacing shroud of boiling water nuclear reactor, and associated apparatus	Granted	11/18/2011	13/299,824	10/27/2015	9,171,648
Westinghouse Electric Company LLC	Axial flow steam generator feedwater dispersion apparatus	Granted	7/10/2012	13/545,302	11/3/2015	9,175,845
Westinghouse Electric Company LLC	Passive containment air cooling for nuclear power plants	Granted	4/12/2012	13/444,967	11/3/2015	9,177,675
Westinghouse Electric Company LLC	Method of processing steam generator tubes of nuclear power plant	Granted	4/14/2010	12/760,124	11/3/2015	9,177,678
Westinghouse Electric Company LLC	Method for refueling a nuclear reactor having an instrumentation penetration flange	Granted	5/12/2015	14/709,813	11/17/2015	9,190,178
Westinghouse Electric Company LLC	Pump seal with thermal retracting actuator	Granted	3/13/2013	13/798,632	3/13/2013	9,206,791
Westinghouse Electric Company LLC	Pump seal with thermal retracting actuator	Granted	8/20/2013	13/970,899	12/8/2015	9,206,812
Westinghouse Electric Company LLC	Pressurized water reactor compact steam generator	Granted	6/13/2012	13/495,050	12/8/2015	9,206,978
Westinghouse Electric Company LLC	Access hole cover ultrasonic inspection tooling	Granted	3/15/2013	13/832,251	12/8/2015	9,207,217
Westinghouse Electric Company LLC	Self powered neutron detector	Granted	4/29/2013	13/872,186	12/8/2015	9,207,335
Westinghouse Electric Company LLC	Reinforcement for a nuclear fuel assembly	Granted	4/15/2008	12/103,010	12/8/2015	9,208,904

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Passive system for cooling the core of a nuclear reactor	Granted	1/18/2013	13/744,440	12/8/2015	9,208,906
Westinghouse Electric Company LLC	Method of validating nuclear reactor in-vessel detector output signals	Granted	2/20/2013	13/771,115	12/8/2015	9,208,907
Westinghouse Electric Company LLC	Full spectrum LOCA evaluation model and analysis methodology	Granted	11/23/2011	13/303,188	12/8/2015	9,208,911
Westinghouse Electric Company LLC	Method of fastening a captive screw to a panel	Granted	8/12/2013	13/964,320	12/15/2015	9,212,683
Westinghouse Electric Company LLC	Pump seal with thermal retracting actuator	Granted	11/6/2013	14/072,891	12/22/2015	9,217,441
Westinghouse Electric Company LLC	Mobile boration system	Granted	3/11/2013	13/792,465	2/23/2016	9,266,756
Westinghouse Electric Company LLC	Reactor coolant pump motor load-bearing assembly configuration	Granted	6/29/2009	12/493,267	3/1/2016	9,273,694
Westinghouse Electric Company LLC	Small modular reactor safety systems	Granted	6/13/2012	13/495,083	3/1/2016	9,275,761
Westinghouse Electric Company LLC	Method and apparatus for the shielded relocation of a nuclear component	Granted	1/15/2013	13/741,664	3/1/2016	9,275,765
Westinghouse Electric Company LLC	Apparatus for vertically segmenting a boiling water reactor control rod blade	Granted	9/13/2012	13/612,982	3/1/2016	9,275,766
Westinghouse Electric Company LLC	Systems and methods for generating power employing VES air supply stored energy	Granted	2/6/2013	13/760,165	3/1/2016	9,275,767

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Method and apparatus for delivering a tool to the interior of a heat exchange tube	Granted	4/10/2013	13/891,219	3/8/2016	9,279,582
Westinghouse Electric Company LLC	Mobile boration system	Granted	3/5/2015	14/639,288	3/8/2016	9,281,087
Westinghouse Electric Company LLC	Zirconium alloys with improved corrosion/creep resistance due to final heat treatments	Granted	6/16/2011	13/161,563	3/15/2016	9,284,629
Westinghouse Electric Company LLC	Domed diaphragm / insert plate for a pressure vessel access closure	Granted	9/9/2009	12/555,826	3/15/2016	9,285,033
Westinghouse Electric Company LLC	Modular plate and shell heat exchanger	Granted	4/29/2009	12/432,147	3/15/2016	9,285,172
Westinghouse Electric Company LLC	Thermo-acoustic nuclear power distribution measurement assembly	Granted	7/14/2014	14/330,010	3/15/2016	9,287,014
Westinghouse Electric Company LLC	Advanced first core fuel assembly configuration and method of implementing the same	Granted	4/19/2012	13/451,050	3/22/2016	9,293,228
Westinghouse Electric Company LLC	Pressurized water reactor flow skirt apparatus	Granted	2/7/2008	12/027,341	4/5/2016	9,305,668
Westinghouse Electric Company LLC	Semi-portable emergency cooling system for removing decay heat from a nuclear reactor	Granted	11/14/2011	13/295,377	4/12/2016	9,312,035
Westinghouse Electric Company LLC	Apparatus and method to inspect, modify, or repair nuclear reactor core shrouds	Granted	3/13/2013	13/798,474	4/19/2016	9,318,226

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Apparatus and method for removing the upper internals from a nuclear reactor pressurized vessel	Granted	1/15/2013	13/741,737	4/19/2016	9,318,227
Westinghouse Electric Company LLC	Pipeline clamp for vibration measurement	Granted	8/23/2012	13/592,451	4/26/2016	9,322,492
Westinghouse Electric Company LLC	Reactor head seismic support tie rod system	Granted	7/13/2010	12/834,963	4/26/2016	9,324,462
Westinghouse Electric Company LLC	Apparatus and method to inspect nuclear reactor components in the core annulus, core spray and feedwater sparger regions in a nuclear reactor	Granted	3/15/2013	13/832,082	4/26/2016	9,324,464
Westinghouse Electric Company LLC	Targeted heat exchanger deposit removal by combined dissolution and mechanical removal	Granted	10/29/2013	14/065,728	5/10/2016	9,334,579
Westinghouse Electric Company LLC	Systems and methods for steam generator tube analysis for detection of tube degradation	Granted	7/26/2013	13/951,984	5/10/2016	9,335,296
Westinghouse Electric Company LLC	Deposition of integrated protective material into zirconium cladding for nuclear reactors by high-velocity thermal application	Granted	11/20/2014	14/548,630	5/10/2016	9,336,909
Westinghouse Electric Company LLC	Signal processing of lamb wave data for pipe inspection	Granted	12/13/2012	13/713,364	5/24/2016	9,347,851
Westinghouse Electric Company LLC	Method of accessing a core of a nuclear reactor	Granted	6/9/2015	14/734,368	6/21/2016	9,373,423

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Eddy current inspection probe	Granted	3/12/2013	13/795,109	7/19/2016	9,395,390
Westinghouse Electric Company LLC	Passive system for cooling the core of a nuclear reactor	Granted	10/21/2015	14/918,665	8/2/2016	9,406,408
Westinghouse Electric Company LLC	Automated analysis coverage verification (AACV)	Granted	9/27/2012	13/628,255	8/23/2016	9,423,407
Westinghouse Electric Company LLC	Systems and methods for spent fuel pool subcriticality measurement and monitoring	Granted	6/3/2013	13/908,153	8/23/2016	9,423,516
Westinghouse Electric Company LLC	Apparatus and method to control sensor position in limited access areas within a nuclear reactor	Granted	3/14/2013	13/802,907	9/6/2016	9,437,333
Westinghouse Electric Company LLC	Process for adding an organic compound to coolant water in a pressurized water reactor	Granted	6/20/2012	13/528,557	9/13/2016	9,443,622
Westinghouse Electric Company LLC Toshiba Energy Systems & Solutions Corporation	SiC matrix fuel cladding tube with spark plasma sintered end plugs	Granted	9/16/2013	14/027,299	9/27/2016	9,455,053
Westinghouse Electric Company LLC	Expansion gap radiation shield	Granted	3/2/2010	12/715,420	10/11/2016	9,466,399
Westinghouse Electric Company LLC	Method for delivering a tool to the interior of a heat exchange tube	Granted	1/6/2016	14/988,835	10/18/2016	9,470,414

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Pressurizer surge-line separator for integral pressurized water reactors	Granted	5/21/2012	13/476,191	10/25/2016	9,478,317
Westinghouse Electric Company LLC	Method for in-core instrumentation withdrawal from the core of a pressurized water reactor	Granted	8/18/2014	14/461,555	10/25/2016	9,478,320
Westinghouse Electric Company LLC	Filter for a nuclear reactor containment ventilation system	Granted	3/11/2013	13/792,401	11/22/2016	9,502,144
Westinghouse Electric Company LLC	Rib-type roughness design for improved heat transfer in PWR rod bundles	Granted	10/28/2013	14/064,531	12/6/2016	9,514,851
Westinghouse Electric Company LLC	Method to reduce the volume of boiling water reactor fuel channels for storage	Granted	9/13/2012	13/612,921	12/6/2016	9,514,852
Westinghouse Electric Company LLC	Dual drive winch and nuclear reactor vessel maintenance apparatus employing same	Granted	5/6/2010	12/774,880	12/27/2016	9,527,701
Westinghouse Electric Company LLC	Pulsed neutron generated prompt gamma emission measurement system for surface defect detection and analysis	Granted	5/17/2016	15/156,757	12/27/2016	9,528,952
Westinghouse Electric Company LLC	Steam generator tube lane flow buffer	Granted	8/4/2011	13/197,890	1/3/2017	9,534,779
Westinghouse Electric Company LLC	Nuclear fuel assembly support grid	Granted	12/3/2014	14/559,029	1/3/2017	9,536,628
Westinghouse Electric Company LLC	Passive power production during a nuclear station blackout	Granted	2/12/2013	13/764,804	1/3/2017	9,536,629

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Reactor in-core instrument handling system	Granted	4/11/2013	13/860,728	4/11/2017	9,620,254
Westinghouse Electric Company LLC	Nuclear control rod position indication system	Granted	12/15/2011	13/326,465	4/11/2017	9,620,255
Westinghouse Electric Company LLC	Solid state electrical generator	Granted	1/21/2014	14/159,653	5/2/2017	9,640,290
Westinghouse Electric Company LLC	Alternate passive spent fuel pool cooling systems and methods	Granted	2/6/2013	13/760,263	5/9/2017	9,646,726
Westinghouse Electric Company LLC	Laser sintering systems and methods for remote manufacture of high density pellets containing highly radioactive elements	Granted	1/18/2013	13/744,711	5/9/2017	9,646,729
Westinghouse Electric Company LLC	Instrumentation and control penetration flange for pressurized water reactor	Granted	4/27/2012	13/457,683	5/23/2017	9,659,674
Westinghouse Electric Company LLC	Jet pump diffuser stack repair	Granted	10/1/2013	14/043,084	5/23/2017	9,659,676
Westinghouse Electric Company LLC	Method of detecting and outputting radiation dose rate information	Granted	2/15/2016	15/043,899	5/30/2017	9,664,796
Westinghouse Electric Company LLC	Anti-clogging steam generator tube bundle	Granted	10/13/2011	13/272,524	6/20/2017	9,683,732
Westinghouse Electric Company LLC	Anti-vibration tube support plate arrangement for steam generators	Granted	12/29/2010	12/980,418	7/4/2017	9,697,919
Westinghouse Electric Company LLC	Thermal retracting actuator	Granted	10/19/2015	14/886,438	7/25/2017	9,714,644

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Loop dissolution system	Granted	3/4/2014	14/195,875	8/1/2017	9,718,038
Westinghouse Electric Company LLC	Deposition of a protective coating including metal-containing and chromium-containing layers on zirconium alloy for nuclear power applications	Granted	5/27/2014	14/287,435	8/1/2017	9,721,676
Westinghouse Electric Company LLC	Wireless transmission of nuclear instrumentation signals	Granted	10/18/2013	14/057,346	8/1/2017	9,721,683
Westinghouse Electric Company LLC	Electrical system, and connection device and method of powering a switchgear bus in an electrical system	Granted	11/13/2014	14/540,139	8/1/2017	9,722,399
Westinghouse Electric Company LLC	Zirconium alloys with improved corrosion/creep resistance due to final heat treatments	Granted	6/22/2015	14/745,792	8/8/2017	9,725,791
Westinghouse Electric Company LLC	Versatile pinch point avoidance recuperator for supercritical carbon dioxide power generation systems	Granted	2/24/2016	15/052,005	8/8/2017	9,726,050
Westinghouse Electric Company LLC	Nuclear fuel assembly having a spacer grid with one or more seamless corners	Granted	6/20/2013	13/922,629	8/15/2017	9,734,923
Westinghouse Electric Company LLC	Additives for heat exchanger deposit removal in a wet layup condition	Granted	4/18/2012	13/449,730	8/22/2017	9,738,551
Westinghouse Electric Company LLC	Combined core makeup tank and heat removal system for a small modular pressurized water reactor	Granted	6/13/2012	13/495,069	8/29/2017	9,748,004

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Apparatus and method to inspect nuclear reactor components in the core annulus, core spray and feedwater sparger regions in a nuclear reactor	Granted	3/21/2016	15/075,440	8/29/2017	9,748,005
Westinghouse Electric Company LLC	Method for monitoring boron dilution during a reactor outage	Granted	10/21/2013	14/058,324	9/12/2017	9,761,335
Westinghouse Electric Company LLC	Pressurized water reactor fuel assembly	Granted	9/25/2014	14/495,957	9/26/2017	9,773,573
Westinghouse Electric Company LLC	Method and apparatus for manipulating equipment inside a steam generator	Granted	7/23/2014	14/338,368	10/17/2017	9,791,145
Westinghouse Electric Company LLC	Ambient temperature decontamination of nuclear power plant component surfaces containing radionuclides in a metal oxide	Granted	10/29/2013	14/065,741	10/17/2017	9,793,018
Westinghouse Electric Company LLC	Triuranium disilicide nuclear fuel composition for use in light water reactors	Published	6/17/2011	13/162,876	{1/5/2012}	{2012-0002777}
Westinghouse Electric Company LLC	Submersible machine structured to carry a tool to a limited location within a nuclear containment	On Appeal	9/12/2011	13/230,434	{4/26/2012}	{2012-0099692}
Westinghouse Electric Company LLC	Nuclear reactor internal electric control rod drive mechanism assembly	On Appeal	12/8/2011	13/314,519	{6/14/2012}	{2012-0148007}
Westinghouse Electric Company LLC	Tool for delivery of testing element to a limited access location within a nuclear containment	On Appeal	9/12/2011	13/230,455	{9/20/2012}	{2012-0236978}

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Self-contained emergency spent nuclear fuel pool cooling system	Allowed	11/8/2011	13/291,334	{10/4/2012}	{2012-0250813}
Westinghouse Electric Company LLC	Method of detecting an existence of a loose part in a steam generator of a nuclear power plant	On Appeal	1/4/2012	13/343,067	{10/11/2012}	{2012-0257705}
Westinghouse Electric Company LLC	Reactor vessel internals radiation analyses	Published	4/7/2011	13/081,805	{10/11/2012}	{2012-0257706}
Westinghouse Electric Company LLC	In-core instrument thimble assembly	On Appeal	10/3/2012	13/644,133	{4/4/2013}	{2013-0083879}
Westinghouse Electric Company LLC	Optimized flower tubes and optimized advanced grid configurations	On Appeal	12/3/2012	13/691,891	{7/11/2013}	{2013-0177127}
Westinghouse Electric Company LLC	Control rod drive mechanism ("CRDM") assembly for a nuclear reactor	Published	2/28/2012	13/406,876	{8/29/2013}	{2013-0223579}
Westinghouse Electric Company LLC	Methods for protection of nuclear reactors from thermal hydraulic/neutronic core instability	On Appeal	3/13/2013	13/798,418	{10/10/2013}	{2013-0266107}
Westinghouse Electric Company LLC	Solid state radiation detector with enhanced gamma radiation sensitivity	Published	2/18/2013	13/769,401	{10/31/2013}	{2013-0285068}
Westinghouse Electric Company LLC	Method of refueling a nuclear reactor	On Appeal	5/2/2012	13/461,821	{11/7/2013}	{2013-0294565}
Westinghouse Electric Company LLC	Slidable duct connection	On Appeal	10/1/2012	13/632,188	{4/3/2014}	{2014-0091570}

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Apparatus and method to switch ultrasonic signal paths in a moderately high radiation area	Published	3/15/2013	13/834,432	{4/10/2014}	{2014-0098923}
Westinghouse Electric Company LLC	Steam generator dual head sludge lance	On Appeal	10/22/2013	14/059,714	{6/12/2014}	{2014-0161219}
Westinghouse Electric Company LLC	Nuclear fuel assembly handling apparatus	Published	3/5/2013	13/785,448	12/26/2017	9852821
Westinghouse Electric Company LLC	Nuclear radiation dosimeter using stress induced birefringence changes in fiber optic cables	Published	3/14/2013	13/803,104	{9/18/2014}	{2014-0270039}
Westinghouse Electric Company LLC	Methodology for the analysis of mslb and tsv acoustic transients in bwr's	Published	3/15/2013	13/834,768	{9/18/2014}	{2014-0278293}
Westinghouse Electric Company LLC	Ion chamber radiation detector	On Appeal	8/23/2013	13/974,384	{2/26/2015}	{2015-0055742}
Westinghouse Electric Company LLC	High temperature strength, corrosion resistant, accident tolerant nuclear fuel assembly grid	Published	10/4/2013	14/046,012	{4/9/2015}	{2015-0098546}
Westinghouse Electric Company LLC	Steam generator sludge lance apparatus	Granted	12/20/2013	14/135,619	3/20/2018	9920925
Westinghouse Electric Company LLC	Apparatus and method to remotely inspect piping attachment welds	Published	10/15/2014	14/514,465	{8/6/2015}	{2015-0221401}
Westinghouse Electric Company LLC	Ultrasonic phased array transducer for the NDE inspection of the Jet Pump Riser Welds and Welded Attachments	On Appeal	1/15/2015	14/597,644	{1/15/2015}	{2015-0233869}

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Zirconium alloys with improved corrosion/creep resistance due to final heat treatments	Published	7/6/2015	14/791,934	{10/29/2015}	{2015-0307976}
Westinghouse Electric Company LLC	Nuclear fuel element	Granted	4/29/2014	14/264,283	12/19/2017	9847143
Westinghouse Electric Company LLC	Crush resistant nuclear fuel assembly support grid	Published	6/10/2014	14/300,259	{12/10/2015}	{2015-0357053}
Westinghouse Electric Company LLC	Control rod guide tube with an extended intermediate guide assembly	Published	6/4/2014	14/295,521	{12/10/2015}	{2015-0357055}
Westinghouse Electric Company LLC	Targeted isotope production system	Published	7/8/2014	14/325,401	{1/14/2016}	{2016-0012928}
Westinghouse Electric Company LLC	Total integrated tube analysis	Granted	7/15/2015	14/800,076	4/17/2018	9945814
Westinghouse Electric Company LLC	Method of servicing modular plate and shell heat exchanger	On Appeal	10/9/2015	14/879,397	{2/4/2016}	{2016-0033216}
Westinghouse Electric Company LLC	Chemical process for primary system material passivation during hot functional testing of nuclear power plants	Published	7/29/2015	14/812,051	{2/4/2016}	{2016-0035442}
Westinghouse Electric Company LLC	Nuclear fuel element corrugated plenum holddown device	Published	10/1/2014	14/503,443	{4/7/2016}	{2016-0099080}
Westinghouse Electric Company LLC	Advanced first core fuel assembly configuration	Granted	12/2/2015	14/956,469	5/29/2018	9984779
Westinghouse Electric Company LLC	Method for shielded relocation of a nuclear component	Granted	11/10/2015	14/936,893	3/20/2018	9922739

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Nuclear fuel assembly support feature	Published	5/19/2015	14/715,646	{6/23/2016}	{2016-0180972}
Westinghouse Electric Company LLC	Targeted heat exchanger deposit removal by combined dissolution and mechanical removal	Published	3/23/2016	15/078,052	{7/14/2016}	{2016-0201214}
Westinghouse Electric Company LLC	Systems and methods for steam generator tube analysis for detection of tube degradation	Published	3/23/2016	15/078,348	{7/14/2016}	{2016-0202212}
Westinghouse Electric Company LLC	Apparatus and method for removing the upper internals from a nuclear reactor pressurized vessel	Published	3/10/2016	15/066230	{7/14/2016}	{2016-0203882}
Westinghouse Electric Company LLC	Magneto-rheological fluid based filter/reflector	Published	2/9/2015	14/617,144	{8/11/2016}	{2016-0232995}
Westinghouse Electric Company LLC	Deposition of integrated protective material into zirconium cladding for nuclear reactors by high-velocity thermal application	Published	3/30/2016	15/084,577	{9/1/2016}	{2016-0254067}
Westinghouse Electric Company LLC	Nuclear power plant containment real-time remote operations management employing server and client	Published	4/21/2016	15/134,577	{10/27/2016}	{2016-0315666}
Westinghouse Electric Company LLC	Delivery device usable in laser peening operation, and associated method	Published	5/10/2016	15/150,672	{11/17/2016}	{2016-0333433}
Westinghouse Electric Company LLC	Remote heat removal system	Published	2/26/2016	15/054,254	{11/17/2016}	{2016-0336083}

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC Kabushiki Kaisha Toshiba	SiC matrix fuel cladding tube with spark plasma sintered end plugs	Published	8/1/2016	15/225,127	{12/8/2016}	{2016-0358673}
Westinghouse Electric Company LLC	Alternative passive spent fuel pool cooling systems and methods	Published	9/23/2016	15/274,761	{1/12/2017}	{2017-0011813}
Westinghouse Electric Company LLC	Under vessel automated work platform assembly	Published	7/14/2015	14/798,730	{1/19/2017}	{2017-0018321}
Westinghouse Electric Company LLC	Method of predicting wear on tubes of steam generator	Granted	7/20/2016	15/215,002	12/19/2017	9845950
Westinghouse Electric Company LLC	Nuclear fuel assembly with seismic/loca tolerance gird	Published	7/29/2015	14/812,466	{2/2/2017}	{2017-0032853}
Westinghouse Electric Company LLC	Corrosion and wear resistant coating on zirconium alloy cladding	Granted	8/14/2015	14/826524	12/19/2017	9844923
Westinghouse Electric Company LLC	Method for measuring bow/twist of a fuel assembly	Published	8/12/2015	14/824,256	{2/16/2017}	{2017-0047131}
Westinghouse Electric Company LLC	Discharge apparatus usable for determining neutron flux	Published	8/31/2015	14/840,331	{3/2/2017}	{2017-0062083}
Westinghouse Electric Company LLC	Heat exchanger	Published	9/25/2015	14/865,786	{3/30/2017}	{2017-0089643}
Westinghouse Electric Company LLC	Cryogenic system for spent nuclear fuel pool emergency cooling & safety system	Published	10/12/2015	14/880,564	{4/13/2017}	{2017-0103820}
Westinghouse Electric Company LLC	modular electrochemical machining apparatus	Published	11/10/2015	14/936,751	{5/11/2017}	{2017-0129030}

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Subcritical reactivity monitor utilizing prompt self-powered incore detectors	Published	11/12/2015	14/939,116	{5/18/2017}	{2017-0140842}
Westinghouse Electric Company LLC	Multilayer composite fuel clad system with high temperature hermeticity and accident tolerance	Granted	12/2/2015	14/956,892	5/29/2018	9982350
Westinghouse Electric Company LLC	System usable in nuclear environment for providing breathing gas	Published	12/10/2015	14/965,120	{6/15/2017}	{2017-0169906}
Westinghouse Electric Company LLC	Hydraulic apparatus and hydraulic appliance usable therein	Published	12/31/2015	14/985,770	{7/6/2017}	{2017-0191508}
Westinghouse Electric Company LLC	Measurement apparatus for determining compressive loading that will be applied to a fuel rod of a pressurized water reactor	Published	12/31/2015	14/985,537	{7/6/2017}	{2017-0194064}
Westinghouse Electric Company LLC	Top nozzle and pressurized water nuclear reactor including same	Published	1/14/2016	14/995,563	{7/20/2017}	{2017-0206985}
Westinghouse Electric Company LLC	In-containment ex-core detector system	Published	1/15/2016	14/996,667	{7/20/2017}	{2017-0206989}
Westinghouse Electric Company LLC	Nuclear control rod position indication system	Published	1/15/2016	14/996,439	{7/20/2017}	{2017-0206990}
Westinghouse Electric Company LLC	Spring apparatus and support apparatus usable in nuclear installation	Published	2/2/2016	15/013,073	{8/3/2017}	{2017-0221591}
Westinghouse Electric Company LLC	Apparatus for degassing a nuclear reactor coolant system	Published	1/17/2017	15/407,508	{1/17/2017}	{2017-0229201}

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Thermal retracting actuator	Published	5/4/2017	15/586,373	{8/17/2017}	{2017-0234305}
Westinghouse Electric Company LLC	Holding fixture to assist in assembly of support grid for nuclear fuel rods and method for assembling support grid for nuclear fuel rods	Published	2/17/2016	15/045,892	{8/17/2017}	{2017-0236603}
Westinghouse Electric Company LLC	Method of detecting and outputting radiation dose rate information	Published	5/11/2017	15/592,822	{8/31/2017}	{2017-0248702}
Westinghouse Electric Company LLC	Reactor coolant system piping temperature distribution measurement system	Published	3/10/2016	15/066,323	{9/14/2017}	{2017-0263341}
Westinghouse Electric Company LLC	Real-time reactor coolant system boron concentration monitor utilizing an ultrasonic spectroscopy system	Published	3/10/2016	15/066,607	{9/14/2017}	{2017-0263342}
Westinghouse Electric Company LLC	Modular plate and shell heat exchanger	Published	6/22/2017	15/629,791	{10/5/2017}	{2017-0284744}
Westinghouse Electric Company LLC	Integrated electrical coil and coil stack assembly	Published	5/20/2016	15/160,758	{11/23/2017}	{2017-0338028}
Westinghouse Electric Company LLC	Method to pressurize sic fuel cladding tube before end plug sealing by pressurization pushing spring loaded end plug	Pending	2/13/2018	15/895,472		
Westinghouse Electric Company LLC	Three dimensional printed precision magnets for fuel assembly	Pending	2/14/2018	15/896,473		

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Coated u3si2 pellets with enhanced water and steam oxidation resistance	Pending	2/16/2018	15/898,308		
Westinghouse Electric Company LLC	Single rod ultrasonic leak detection tool	Pending	2/23/2018	15/903,111		
Westinghouse Electric Company LLC	Nuclear fuel assembly debris filtering bottom nozzle	Pending	3/16/2018	15/923,491		
Westinghouse Electric Company LLC	Steam generator dual head sludge lance	Pending	3/27/2018	15/936,520		
Westinghouse Electric Company LLC	Nuclear reactor system, transmitter device therefor, and associated method of measuring a number of environmental conditions	Pending	4/13/2018	15/952,597		
Westinghouse Electric Company LLC	Nuclear radiation dosimeter using stress induced birefringence changes in fiber optic cables	Pending	4/16/2018	15/953,865		
Westinghouse Electric Company LLC	Method of visually outputting to a worker during an operation a number of parameters pertaining to the operation, and associated apparatus	Pending	4/26/2018	15/963,159		
Westinghouse Electric Company LLC	Energy storage device	Pending	5/15/2018	15/979,628		
Westinghouse Electric Company LLC	Control rod guide tube with an extended intermediate guide assembly	Pending	5/17/2018	15/981,965		
Westinghouse Electric Company LLC	Method of detecting and outputting radiation dose rate information	Pending	5/24/2018	15/988,712		

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Reactor internals sensor inserts	Granted	3/11/2014	14/203,679	3/20/2018	9,922,737
Westinghouse Electric Company LLC	Hydrostatic mechanical face seal	Granted	11/28/2016	15/361,755	3/20/2018	9920839
Westinghouse Electric Company LLC	In-situ self-powered monitoring of stored spent nuclear fuel	Granted	8/10/1999	09/371720	6/26/2001	6252923
Westinghouse Electric Company LLC	Floating pool seal assembly with leak limiting annular support structure	Granted	4/7/1999	09/287630	11/13/2001	6317477
Westinghouse Electric Company LLC	Sleeve assembly for nuclear fuel racks	Granted	8/17/2000	09/640627	8/27/2002	6442227
Westinghouse Electric Company LLC	Flexible penetration attachment for strainers	Granted	12/4/1998	09/205687	11/5/2002	6477220
Westinghouse Electric Company LLC	Method and apparatus to eliminate confirmation switches and channel demultiplexer from soft control man-machine interface	Granted	10/5/2000	09/679508	2/4/2003	6516041
Westinghouse Electric Company LLC	Semiconductor radiation source power monitor	Granted	10/17/2001	09/981834	4/1/2003	6542565
Westinghouse Electric Company LLC	Waterhammer suppression apparatus	Granted	2/25/2002	10/084024	4/8/2003	6543485
Westinghouse Electric Company LLC	Reduced pressure drop debris filter bottom nozzle for a fuel assembly of a nuclear reactor	Granted	7/17/2001	09/907405	8/19/2003	6608880

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Protective maintenance display system	Granted	3/28/2001	09/819837	5/11/2004	6735549
Westinghouse Electric Company LLC	Crud-resistant nuclear fuel cladding	Granted	6/12/2003	10/459777	11/2/2004	6813329
Westinghouse Electric Company LLC	Pressurized water reactor shutdown method	Granted	7/30/2003	10/630056	9/13/2005	6944254
Westinghouse Electric Company LLC	Nuclear reactor fuel assemblies	Granted	9/5/2003	10/657025	8/1/2006	7085340
Westinghouse Electric Company LLC	Control system display for monitoring a complex process	Granted	9/17/2002	10/245998	8/1/2006	7085607
Westinghouse Electric Company LLC	Health monitoring display system for a complex plant	Granted	3/29/2002	10/157280	8/8/2006	7088255
Westinghouse Electric Company LLC	BWR inspection manipulator	Granted	10/1/2003	10/0676453	8/15/2006	7092477
Westinghouse Electric Company LLC	Method for calibrating steam generator water level measurement	Granted	8/25/2003	10/647757	10/10/2006	7120218
Westinghouse Electric Company LLC	Use of boron or enriched or enriched boron 10 in UO2	Granted	10/14/2004	10/965372	11/21/2006	7139360
Westinghouse Electric Company LLC	Head assembly	Granted	9/24/2003	10/670540	6/2/2007	7158605
Westinghouse Electric Company LLC	Gas phase electrolyzer process for producing hydrogen	Granted	6/3/2005	11/145320	8/28/2007	7261874

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Film riding shaft seal	Granted	3/8/2005	11/074409	10/30/2007	7287756
Westinghouse Electric Company LLC	Miniature manipulator for servicing the interior of nuclear steam generator tubes	Granted	7/15/2003	10/620013	1/1/2008	7314343
Westinghouse Electric Company LLC	Printed circuit card	Granted	10/3/2005	11/242171	6/10/2008	7386086
Westinghouse Electric Company LLC	Steam generator loose parts collector weir	Granted	11/28/2006	11/563742	10/14/2008	7434546
Westinghouse Electric Company LLC	Removal of niobium second phase particle deposits from pickled zirconium-niobium alloys	Granted	3/7/2007	11/682981	12/23/2008	7468106
Westinghouse Electric Company LLC	Spacer grid with mixing vanes and nuclear fuel assembly employing the same	Granted	3/9/2006	11/372431	6/16/2009	7548602
Westinghouse Electric Company LLC	Removal of niobium second phase particle deposits from pickled zirconium-niobium alloys	Granted	2/12/2008	12/029527	7/7/2009	7556696
Westinghouse Electric Company LLC	Over temperature and over power delta temperature operating margin recovery method and reactor system employing the same	Granted	3/2/2006	11/367001	9/29/2009	7596198
Westinghouse Electric Company LLC	Reactor dosimetry applications using a parallel 3-D radiation transport code	Granted	9/25/2008	12/237429	10/20/2009	7606686
Westinghouse Electric Company LLC	Nuclear reactor internals alignment configuration	Granted	8/24/2007	11/844614	11/10/2009	7616728

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Bi-alloy spacer grid and associated methods	Granted	3/27/2003	11/389793	11/24/2009	7623612
Westinghouse Electric Company LLC	Steam generator nondestructive examination method	Granted	11/22/2006	11/562782	1/19/2010	7647829
Westinghouse Electric Company LLC	Method and tooling for dismantling casking and removal of nuclear reactor core structures	Granted	1/17/2007	11/623864	2/23/2010	7668281
Westinghouse Electric Company LLC	Pipe clamp	Granted	9/17/2007	11/856119	9/21/2010	7798535
Westinghouse Electric Company LLC	Permanent seal ring for a nuclear reactor cavity	Granted	12/7/2007	11/952358	10/12/2010	7813464
Westinghouse Electric Company LLC	Method of applying a burnable poison onto the exterior of nuclear rod cladding	Granted	3/29/2007	11/692952	10/19/2010	7815964
Westinghouse Electric Company LLC	Nuclear fuel assembly debris filter bottom nozzle	Granted	1/5/2004	10/751349	10/26/2010	7822165
Westinghouse Electric Company LLC	Solid state radiation detector with enhanced gamma radiation sensitivity	Granted	2/18/2013	13/769401	11/28/2017	9831375
Westinghouse Electric Company LLC	Nuclear fuel element	Granted	4/29/2014	14/264283	12/19/2017	9847143
Westinghouse Electric Company LLC	Low pressure drop nuclear assembly bottom nozzle	Granted	4/3/2014	14/243954	12/19/2017	9847144
Westinghouse Electric Company LLC	Self-contained emergency spent nuclear fuel pool cooling system	Granted	11/8/2011	13/291334	12/19/2017	9847148

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Nuclear fuel assembly handling apparatus	Published	3/5/2013	13/785448	{7/24/2014}	{20140205050}
Westinghouse Electric Company LLC	Total integrated tube analysis	Granted	7/15/2015	14/800076	4/17/2018	9945814
Westinghouse Electric Company LLC	Pool pressure mitigation using sparger phase interaction	Granted	8/25/1998	09/139106	7/11/2000	6088418
Westinghouse Electric Company LLC	Feedwater control over full power range for pressurized water reactor steam generators	Granted	10/22/1998	09/176799	2/1/2000	6021169
Westinghouse Electric Company LLC	Tunable anticipatory output response valve control	Granted	10/27/1998	09/178890	4/17/2001	6216728
Westinghouse Electric Company LLC	Full range feedwater control system for pressurized water reactor steam generators	Granted	12/14/1998	09/210714	5/2/2000	6055945
Westinghouse Electric Company LLC	Canopy seal clamp assembly and method of installation	Granted	1/7/1999	09/226125	9/26/2000	6125159
Westinghouse Electric Company LLC	Apparatus and method for performing non-destructive inspections of large area aircraft structures	Granted	1/15/1999	09/231668	4/24/2001	6220099
Westinghouse Electric Company LLC	Cutting zone for radioactive materials	Granted	3/8/1999	09/264241	7/17/2001	6263037
Westinghouse Electric Company LLC	Filtration system for concentrating radioactive debris	Granted	3/10/1999	09/265823	3/6/2001	6197188
Westinghouse Electric Company LLC	Magnetic filtration system for minimizing radioactive waste during abrasive waterjet cutting	Granted	3/10/1999	09/265824	12/5/2000	6156194

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Self-actuated louvers for venting a cedm cooling system of a nuclear reactor and method of using the same	Granted	4/6/1999	09/286660	3/29/2001	6240154
Westinghouse Electric Company LLC	Flexi-rail assembly	Granted	4/7/1999	09/287366	2/6/2001	6182932
Westinghouse Electric Company LLC	Mox fuel arrangement for nuclear core	Granted	6/30/1999	09/343548	5/15/2001	6233302
Westinghouse Electric Company LLC	Coolant mixing grid for nuclear fuel assembly	Granted	10/06/1999	09/402703	8/7/2001	6272197
Westinghouse Electric Company LLC	Method and system for monitoring control rod element assembly position	Granted	5/1/2000	09/563032	5/22/2001	6236699
Westinghouse Electric Company LLC	Vessel for uranium hexafluoride transport	Granted	4/23/2001	09/840314	3/18/2003	6534776
Westinghouse Electric Company LLC	System and method for determining fluctuating pressure loading on a component in a reactor steam done	Granted	5/24/2005	11/135806	10/28/2006	7444246
Westinghouse Electric Company LLC	Advanced logic system	Granted	5/6/2008	12/026703	1/11/2011	7870299
Westinghouse Electric Company LLC	Method of manufacturing a Sic composite fuel cladding with inner Zr alloy liner	Published	06/21/2016	15/187985	{12/21/2017}	{2017-0365364}
Westinghouse Electric Company LLC	Nuclear fuel rod	Published	6/21/2017	15/628695	{12/28/2017}	{2017-0372802}

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Irradiation target handling device	Published	7/14/2016	15/210231	{1/18/2018}	{2018-0019031}
Westinghouse Electric Company LLC	Cold spray chromium coating for nuclear fuel rods	Published	10/3/2016	15/284076	{1/25/2018}	{2018-0025793}
Westinghouse Electric Company LLC	Spray methods for coating nuclear fuel rods to add corrosion resistant barrier	Published	10/3/2016	15/284182	{1/25/2018}	{2018-0025794}
Westinghouse Electric Company LLC	Tank closure cesium removal	Published	9/20/2016	15/270312	{2/1/2018}	{2018-0033508}
Westinghouse Electric Company LLC	Process for manufacturing sic composite ceramics	Published	8/24/2016	15/245933	{3/1/2018}	{2018-0057413}
Westinghouse Electric Company LLC	Duplex accident tolerant coating for nuclear fuel rods	Published	10/2/2017	15/722167	{4/5/2018}	{2018-0096743}
Westinghouse Electric Company LLC	System and process for production and collection of radioisotopes	Published	11/2/2016	15/341478	{5/3/2018}	{2018-0122521}
Westinghouse Electric Company LLC	Stem generator sludge lance apparatus	Published	1/4/2018	15/861744	{5/24/2018}	{2018-0142885}
Westinghouse Electric Company LLC	Monitoring control rod element assembly position	Granted	3/28/2001	09/819967	7/16/2002	6421405
Westinghouse Electric Company LLC	Reactor pressure Vessel	Granted	11/5/2004	10/982068	10/10/2006	7120219
Westinghouse Electric Company LLC	Method of operating a nuclear power plant at multiple levels	Granted	10/2/2003	10/677184	11/21/2006	7139355

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Unirradiated nuclear fuel component transport system	Granted	2/26/2007	11/678640	1/6/2009	7474726
Westinghouse Electric Company LLC	Removal of niobium second phase particle deposits from pickled zirconium-niobium alloys	Granted	10/3/2008	12/245085	2/15/2011	7887638
Westinghouse Electric Company LLC	Ambient temperature decontamination of nuclear power plant component surfaces containing radionuclides in a metal oxide	Published	6/29/2017	15/637,621	{11/30/2017}	{2017-0345519}
Westinghouse Electric Company LLC	Corrosion and wear resistant coating or zirconium alloy cladding	Published	11/2/2017	15/801398	{3/01/2018}	{2018-0056628}
Westinghouse Electric Company LLC	Heat pipe molten salt fast reactor with stagnant liquid core	Published	9/12/2017	15/701477	{3/15/2018}	{2018-0075931}
Westinghouse Electric Company LLC	Method of predicting wear on tubes of steam generator	Published	11/9/2017	15/807801	{5/24/2018}	{2018-0142884}
Westinghouse Electric Company LLC	Pressure boundary bolted anti-ejection device	Published	11/16/2017	15/814622	{5/31/2018}	{2018-0151263}

FIRST LIEN PATENT SECURITY AGREEMENT dated as of August 1, 2018 (this “Agreement”), among Westinghouse Electric Company LLC, a Delaware limited liability company (“WEC LLC”) and Fauske and Associates LLC, a Delaware limited liability company (together with WEC LLC, the “Grantors”) and CREDIT SUISSE AG, CAYMAN ISLANDS BRANCH as Collateral Agent (in such capacity, the “Collateral Agent”).

Reference is made to the First Lien Collateral Agreement dated as of August 1, 2018 (as amended, restated, amended and restated, supplemented or otherwise modified from time to time, the “Collateral Agreement”), among the Grantors, the other grantors from time to time party thereto and the Collateral Agent, pursuant to which the Grantors granted to the Collateral Agent, for the benefit of the Secured Parties, a security interest in the Patent Collateral (as defined herein). Pursuant to the Collateral Agreement, the Grantors agreed execute and deliver this Agreement in order to record the security interest granted to the Collateral Agent with the USPTO. Accordingly, the parties hereto agree as follows:

SECTION 1. Terms. Capitalized terms used in this Agreement and not otherwise defined herein have the meanings specified (including specified by referenced) in the Collateral Agreement. The rules of construction specified in Section 1.01(b) of the Collateral Agreement also apply to this Agreement.

SECTION 2. Grant of Security Interest. As security for the payment or performance, as the case may be, in full of the Secured Obligations, each Grantor hereby grants to the Collateral Agent, its successors and assigns, for the benefit of the Secured Parties, a security interest (the “Security Interest”) in all of such Grantor’s right, title and interest in, to and under the United States issued Patents and Patent applications listed on Schedule I attached hereto, together with (a) all reissues, reexaminations, continuations, divisionals, continuations-in-part, renewals or extensions thereof, (b) the right to sue or otherwise recover for any past, present and future infringement, or other violation or impairment thereof, and (c) all Proceeds of the foregoing, including without limitation license fees, royalties, income, payments, claims, damages and proceeds of suit, now or hereafter due and/or payable with respect thereto (the “Patent Collateral”). This Agreement is not to be construed as an assignment of any Patent Collateral.

SECTION 3. Collateral Agreement. The Security Interest granted to the Collateral Agent herein is granted in furtherance, and not in limitation, of the security interest granted to the Collateral Agent pursuant to the Collateral Agreement. Each Grantor hereby acknowledges and affirms that the rights and remedies of the Collateral Agent with respect to the Patent Collateral are more fully set forth in the Collateral Agreement, the terms and provisions of which are hereby incorporated herein by reference as if fully set forth herein. In the event of any conflict between the terms of this Agreement and the Collateral Agreement, the terms of the Collateral Agreement shall govern.

SECTION 4. Termination. Upon the occurrence of the Termination Date or the release of a Grantor from its obligations under the Collateral Agreement pursuant to Section 5.13 of the Collateral Agreement, the security interest granted herein against the Patent Collateral of the Grantors or of such Grantor, as applicable, shall automatically terminate and the Collateral Agent shall execute, acknowledge, and deliver to the Grantors or such Grantor, as applicable, an instrument in writing in recordable form releasing the collateral pledge, grant, assignment, lien, and security interest in such Patent Collateral under this Agreement.

SECTION 5. Counterparts. This Agreement may be executed in counterparts (and by different parties hereto on different counterparts), each of which shall constitute an original but all of which when taken together shall constitute a single contract. Delivery of an executed signature page to

this Agreement by facsimile or other electronic transmission shall be effective as delivery of a manually signed counterpart of this Agreement.


SECTION 6. Governing Law. This Agreement shall be construed in accordance with and governed by the law of the State of New York.

SECTION 7. Recordation. Each Grantor authorizes and requests that the Commissioner for Trademarks record this First Lien Patent Security Agreement with the U.S. Patent and Trademark Office.

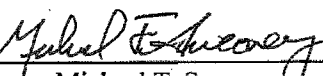
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IN WITNESS WHEREOF, the parties hereto have duly executed this Agreement as of the date first above written.

FAUSKE AND ASSOCIATES LLC, as Grantor

By: 
Name: Michael T. Sweeney
Title: Vice President & Secretary

WESTINGHOUSE ELECTRIC COMPANY LLC, as Grantor

By: 
Name: Michael T. Sweeney
Title: Secretary

[Signature Page to First Lien Patent Security Agreement]

PATENT
REEL: 046708 FRAME: 0285

CREDIT SUISSE AG, CAYMAN ISLANDS
BRANCH, as Collateral Agent

By: _____

Name: Mikhail Faybusovich
Title: Authorized Signatory

By: _____

Name: Andrew Griffin
Title: Authorized Signatory

[Signature Page to First Lien Patent Security Agreement]

Schedule I to the
First Lien Patent Security Agreement

PATENT COLLATERAL

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Nuclear reactor vessel	Granted	7/24/1998	09/122,288	4/25/2000	6,055,288
Westinghouse Electric Company LLC	Quick release, removable top nozzle assembly	Granted	4/29/1998	09/069,354	9/5/2000	6,115,440
Westinghouse Electric Company LLC	Welding apparatus and method	Granted	6/1/1999	09/171,750	10/3/2000	6,127,651
Westinghouse Electric Company LLC	Bolt with integral locking member	Granted	8/24/1999	09/382,021	12/26/2000	6,164,886
Westinghouse Electric Company LLC	Stud tensioning method	Granted	6/24/1999	09/339,459	1/2/2001	6,167,764
Westinghouse Electric Company LLC	Method for tube plug removal	Granted	7/23/1999	09/360,089	1/30/2001	6,181,759
Westinghouse Electric Company LLC	Method for tube plug removal	Granted	9/10/1999	09/393,801	2/20/2001	6,189,212
Westinghouse Electric Company LLC	Acid fluxes for metal reclamation from contaminated solids	Granted	9/2/1999	09/389,673	6/5/2001	6,241,800
Westinghouse Electric Company LLC	Unitary, transportable, assembled nuclear steam supply system with life time fuel supply and method of operating same	Granted	9/9/1999	09/392,011	7/10/2001	6,259,760
Westinghouse Electric Company LLC	Lower reactor internals up-ending device	Granted	10/13/1999	09/417,350	7/24/2001	6,266,386

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Method and apparatus for preventing relative rotation of tube members in a control rod drive mechanism	Granted	11/19/1999	09/442,283	8/14/2001	6,275,556
Westinghouse Electric Company LLC	Method and apparatus for focusing propagating wave paths of a phased array in spherically-bounded materials	Granted	11/17/1999	09/441,890	8/28/2001	6,279,397
Westinghouse Electric Company LLC	Slidable comb assembly for burnable poison rod transfer device	Granted	7/27/1999	09/362,005	8/28/2001	6,282,254
Westinghouse Electric Company LLC	Independent tube position verification system	Granted	7/9/1999	09/349,981	8/28/2001	6,282,461
Westinghouse Electric Company LLC	Collar clamp assembly for repairing core spray piping	Granted	10/21/1999	09/422,088	9/25/2001	6,293,593
Westinghouse Electric Company LLC	Method of sealing a reactor pressure vessel	Granted	9/28/1999	09/407,571	10/9/2001	6,301,319
Westinghouse Electric Company LLC	Tunable anticipatory output response valve control	Granted	9/13/2000	09/661,310	10/23/2001	6,305,397
Westinghouse Electric Company LLC	Retaining apparatus and method for use in a nuclear reactor	Granted	2/7/2000	09/498,736	10/23/2001	6,305,651
Westinghouse Electric Company LLC	Fretting resistant spring design	Granted	10/23/2000	09/694,466	10/30/2001	6,310,932
Westinghouse Electric Company LLC	BWR jet pump wedge keeper	Granted	12/1/2000	09/726,419	11/20/2001	6,320,923

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Interlock assembly for burnable poison rod transfer device	Granted	7/27/1999	09/362,004	12/4/2001	6,327,322
Westinghouse Electric Company LLC	Thermal barrier and reactor coolant pump incorporating the same	Granted	3/7/2000	09/520,860	12/11/2001	6,328,541
Westinghouse Electric Company LLC	Reduced in-core instrument patterns for pressurized water reactors	Granted	11/6/1998	09/187,225	3/5/2002	6,353,650
Westinghouse Electric Company LLC	Anchor assembly for fuel bundle	Granted	6/19/2000	09/596,334	3/12/2002	6,356,614
Westinghouse Electric Company LLC	Method of repairing a reactor coolant pump shaft and a reactor coolant pump repaired by such method	Granted	6/6/2000	09/587,763	3/19/2002	6,358,000
Westinghouse Electric Company LLC	Method of sealing container for handling radioactive debris	Granted	3/10/1999	09/265,825	3/19/2002	6,359,187
Westinghouse Electric Company LLC	Control element assembly position verification apparatus	Granted	10/6/1998	09/166,902	4/30/2002	6,380,734
Westinghouse Electric Company LLC	Shroud connection for replacement core spray pipe	Granted	1/27/2000	09/492,303	5/21/2002	6,390,509
Westinghouse Electric Company LLC	Spent nuclear fuel assembly stacking method	Granted	2/21/2000	09/510,435	5/21/2002	6,393,086
Westinghouse Electric Company LLC	Blowdown manifold evacuator for nuclear power plants	Granted	4/14/2000	09/549,527	6/4/2002	6,397,877
Westinghouse Electric Company LLC	Removable spent fuel handling machine rail	Granted	2/12/1999	09/248,987	6/11/2002	6,404,836

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Positive locking device for reactor instrumentation protection sleeve assembly	Granted	11/3/1999	09/433,304	6/18/2002	6,406,064
Westinghouse Electric Company LLC	Magnetic filtration method for minimizing radioactive waste during abrasive waterjet cutting	Granted	11/3/2000	09/704,672	7/16/2002	6,419,833
Westinghouse Electric Company LLC	Eddy current testing probe	Granted	7/3/2000	09/609,788	8/6/2002	6,429,649
Fauske & Associates, Inc.	Foam detector apparatus and method	Granted	5/31/2000	09/584,222	8/20/2002	6,435,710
Westinghouse Electric Company LLC	Floating ultrasonic testing end effector for a robotic arm	Granted	11/8/1999	09/435,548	10/1/2002	6,459,748
Westinghouse Electric Company LLC	Energize to actuate engineered safety features actuation system and testing method therefor	Granted	5/26/2000	09/579,121	10/8/2002	6,462,667
Westinghouse Electric Company LLC	Jack screw gap replacement device	Granted	1/7/2000	09/479,225	10/8/2002	6,463,114
Westinghouse Electric Company LLC	Decontamination method	Granted	7/26/2001	09/915,752	10/15/2002	6,466,636
Westinghouse Electric Company LLC	Steam generator tube support grid array	Granted	4/12/2000	09/547,765	10/22/2002	6,467,439
Westinghouse Electric Company LLC	Retaining apparatus for connecting a pipe system to a vessel in a nuclear reactor	Granted	3/20/2000	09/531,408	10/22/2002	6,467,814
Westinghouse Electric Company LLC	Dual optical communication network for class 1E reactor protection systems	Granted	2/11/1999	09/247,868	10/29/2002	6,473,479

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Flow condition monitor	Granted	10/27/2000	09/697,725	11/12/2002	6,480,793
Westinghouse Electric Company LLC	Digital plant protection system with engineered safety features component control system	Granted	9/17/1999	09/398,422	11/19/2002	6,484,126
Westinghouse Electric Company LLC	Overload indicator	Granted	8/30/2000	09/651,198	12/3/2002	6,488,434
Westinghouse Electric Company LLC	Alarm management system	Granted	5/10/2000	09/568,471	12/10/2002	6,492,901
Westinghouse Electric Company LLC	Method of calibrating exit thermocouples in a nuclear reactor	Granted	10/11/2000	09/686,427	12/10/2002	6,493,412
Westinghouse Electric Company LLC	Decontamination method	Granted	5/10/2000	09/568,434	1/14/2003	6,506,955
Westinghouse Electric Company LLC	Seal arrangement for in-core instrument housing	Granted	3/28/2001	09/818,534	2/18/2003	6,522,708
Westinghouse Electric Company LLC	Nuclear in-core instrument (ICI) assembly with compressed flexible hose sheath	Granted	11/12/1999	09/439,086	2/18/2003	6,522,709
Westinghouse Electric Company LLC	Fastened spacer for grid of a nuclear reactor with associated method	Granted	7/3/2001	09/898,943	2/18/2003	6,522,710
Westinghouse Electric Company LLC	Process protection system	Granted	2/10/200	09/501,804	3/11/2003	6,532,550
Westinghouse Electric Company LLC	Mandrel supported tensile test to evaluate weld bonding	Granted	7/9/2001	09/901,459	5/6/2003	6,557,421

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Nuclear plant containment with prefabricated component support structure	Granted	3/11/2002	10/095,632	5/27/2003	6,570,950
Westinghouse Electric Company LLC	Remote bolt installation tool	Granted	11/3/2000	09/705,989	6/17/2003	6,578,451
Westinghouse Electric Company LLC	Method and system for identifying the source of a signal	Granted	7/31/2000	09/629,286	7/22/2003	6,596,998
Westinghouse Electric Company LLC	Nuclear reactor with improved grid	Granted	3/6/2002	10/092,946	8/12/2003	6,606,369
Westinghouse Electric Company LLC	Tube non-destructive testing probe drive elevator and contamination containment system	Granted	1/3/2002	10/038,318	8/19/2003	6,606,920
Westinghouse Electric Company LLC	Method and system for monitoring radiation and rejecting noise	Granted	6/26/2001	09/891,781	9/30/2003	6,627,898
Westinghouse Electric Company LLC	Method of retrofitting a reactor pressure vessel head assembly	Granted	10/5/2001	09/972,728	10/28/2003	6,639,960
Westinghouse Electric Company LLC	Stud enclosure and method of use	Granted	10/8/2001	09/973,500	11/25/2003	6,654,436
Westinghouse Electric Company LLC	Method of operating a nuclear power plant at multiple power levels	Granted	9/23/2002	10/252,496	1/6/2004	6,674,826
Westinghouse Electric Company LLC	Instrumentation electrical connector protector	Granted	11/15/2000	09/713,552	1/27/2004	6,682,358
Westinghouse Electric Company LLC	Unirradiated nuclear fuel transport system	Granted	12/19/2001	10/025,728	1/27/2004	6,683,931

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Fluidized bed reaction design	Granted	2/21/2000	09/507,605	4/13/2004	6,719,952
Westinghouse Electric Company LLC	Seal arrangement for in-core instrument housing	Granted	11/26/2002	10/304,977	4/13/2004	6,721,381
Westinghouse Electric Company LLC	Take-up reel for flexible elongated members	Granted	1/5/2001	09/755,244	4/27/2004	6,726,140
Westinghouse Electric Company LLC	High energy absorption top nozzle for a nuclear fuel assembly	Granted	5/22/2003	10/444,469	5/18/2004	6,738,447
Westinghouse Electric Company LLC	Unirradiated nuclear fuel component transport system	Granted	4/28/2003	10/424,480	6/8/2004	6,748,042
Westinghouse Electric Company LLC	Method of closing a pressure vessel	Granted	11/27/2002	10/306,809	7/20/2004	6,763,570
Westinghouse Electric Company LLC	Method and apparatus for shipping substantially pure uranium hexafluoride	Granted	2/5/2003	10/358,945	7/20/2004	6,765,221
Westinghouse Electric Company LLC	Energize to actuate engineered safety features actuation system and testing method therefor	Granted	5/24/2002	10/154,722	9/7/2004	6,788,213
Westinghouse Electric Company LLC	Integral PWR with diverse emergency cooling and method of operating same	Granted	3/9/2001	09/803,418	9/21/2004	6,795,518
Westinghouse Electric Company LLC	Method of optimizing risk informed inspections of heat exchangers	Granted	11/29/2001	10/011,454	9/28/2004	6,799,124
Westinghouse Electric Company LLC	Subcritical reactivity measurement method	Granted	11/21/2002	10/301,044	10/5/2004	6,801,593

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Process for synthesizing a database for nuclear power plant containment evaluation	Granted	10/3/2000	09/677,899	10/5/2004	6,801,885
Westinghouse Electric Company LLC	Eddy current data union	Granted	4/12/2002	10/121,749	11/23/2004	6,823,269
Westinghouse Electric Company LLC	Component interface module	Granted	8/15/2002	10/219,994	1/11/2005	6,842,669
Westinghouse Electric Company LLC	Nondestructive examination of high pressure turbine cylinders	Granted	8/22/2003	10/646,136	5/3/2005	6,886,407
Westinghouse Electric Company LLC	Method for controlling steam generators	Granted	6/23/2004	10/874,666	5/3/2005	6,886,502
Westinghouse Electric Company LLC	Reactor pressure vessel	Granted	3/27/2003	10/401,284	5/3/2005	6,888,909
Westinghouse Electric Company LLC	Method of establishing a nuclear reactor core fuel assembly loading pattern	Granted	2/25/2003	10/374,691	8/16/2005	6,931,090
Westinghouse Electric Company LLC	Jet pump assembly repair method	Granted	4/22/2004	10/830,452	4/4/2006	7,023,949
Westinghouse Electric Company LLC	Nonintrusive method for the detection of concealed special nuclear material	Granted	4/6/2004	10/818,848	12/19/2006	7,151,815
Westinghouse Electric Company LLC	Device and method for ultrasonic inspection using profilometry data	Granted	1/7/2005	11/031,841	3/27/2007	7,194,908
Westinghouse Electric Company LLC	An eddy current method of inspecting a pressure vessel shell	Granted	12/8/2004	11/007,514	5/15/2007	7,218,101

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Westinghouse Electric Company LLC	Method and algorithm for searching and optimizing nuclear reactor core loading patterns	Granted	11/19/2004	10/993249	5/29/2007	7,224,761
Westinghouse Electric Company LLC	Spectroscopy-based safety system and method form a vacuum ARC remelt furnace	Granted	6/2/2005	11/143178	8/14/2007	7,257,145
Westinghouse Electric Company LLC	On-line testable solid state reversing DC motor starter	Granted	8/30/2006	11/512,916	7/8/2008	7,397,222
Westinghouse Electric Company LLC	Advanced gray rod control assembly	Granted	7/26/2005	11/189472	8/12/2008	7,412,021
Westinghouse Electric Company LLC	Current limiting DC motor starter circuit	Granted	8/30/2006	11/512476	9/2/2008	7,420,343
Westinghouse Electric Company LLC	Nuclear fuel assembly control rod drive thimble to bottom nozzle connector	Granted	6/9/2006	11/450,077	11/18/2008	7,453,972
Westinghouse Electric Company LLC	Solid state reversing AC motor with DC power source	Granted	8/30/2006	11/512,474	12/2/2008	7,459,877
Westinghouse Electric Company LLC	Tube-in-tube threaded dashpot end plub	Granted	10/18/2006	11/583,466	4/7/2009	7,515,674
Westinghouse Electric Company LLC	Nuclear fuel assembly	Granted	11/1/2006	11/591,328	2/23/2010	7,668,280
Westinghouse Electric Company LLC	Tube-in-tube threaded dashpot end plub	Granted	12/11/2008	12/332,662	2/23/2010	7,668,284
Westinghouse Electric Company LLC	Eddy current data interpolation/extrapolation	Granted	12/11/2007	11/954,043	5/4/2010	7,711,499

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Method of assessing the performance of a steam generator	Granted	1/31/2007	11/669194	6/1/2010	7,726,169
Westinghouse Electric Company LLC	Enhanced steam dump (bypass) control system	Granted	7/14/2008	12/172,688	6/22/2010	7,742,555
Westinghouse Electric Company LLC	Computerized procedures system	Granted	10/20/2006	11/584,769	10/12/2010	7,813,817
Westinghouse Electric Company LLC	Two step dry Uo2 production process utilizing a positive sealing valve means between steps	Granted	7/20/2009	12/465,729	11/2/2010	7,824,640
Westinghouse Electric Company LLC	Nuclear fuel assembly protective grid	Granted	9/2/2004	10/932,908	2/15/2011	7,889,829
Westinghouse Electric Company LLC	Nuclear reactor downcomer flow deflector	Granted	5/8/2007	11/745,600	2/15/2011	7,889,830
Westinghouse Electric Company LLC	Subcritical reactivity measurement method	Granted	12/11/2008	12/332,577	2/22/2011	7,894,565
Westinghouse Electric Company LLC	Enhanced steam dump (bypass) control system	Granted	5/4/2010	12/773,388	5/17/2011	7,945,011
Westinghouse Electric Company LLC	Hydrogen generation process with dual pressure multi stage electrolysis	Granted	7/17/2007	11/778,863	7/12/2011	7,976,693
Westinghouse Electric Company LLC	Nuclear core component hold-down assembly	Granted	5/21/2008	12/124,195	8/9/2011	7,995,701
Westinghouse Electric Company LLC	Steam generator nondestructive examination method	Granted	12/2/2009	12/629,112	9/6/2011	8,011,249

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Neutron absorber consisting of refractory metal infused with discrete neutron absorber	Granted	2/8/2008	12/028,215	10/4/2011	8,031,826
Westinghouse Electric Company LLC	Non-destructive pipe scanner	Granted	4/29/2009	12/431,856	11/22/2011	8,061,208
Westinghouse Electric Company LLC	Neutron shielding panels for reactor pressure vessels	Granted	11/21/2008	12/275,525	11/22/2011	8,064,564
Westinghouse Electric Company LLC	Failure detection and mitigation in logic circuits	Granted	3/10/2009	12/401,559	2/14/2012	8,117,512
Westinghouse Electric Company LLC	Pipe scanner	Granted	5/4/2009	12/434,717	3/27/2012	8,141,442
Westinghouse Electric Company LLC	Method for analysis of pellet-cladding interaction	Granted	6/6/2006	11/447,357	4/3/2012	8,149,983
Westinghouse Electric Company LLC	Advanced logic system	Granted	10/28/2010	12/914,724	4/10/2012	8,156,251
Westinghouse Electric Company LLC	Electrical connector assembly, test lead assembly therefor, and associated method	Granted	12/10/2009	12/634,913	6/26/2012	8,206,186
Westinghouse Electric Company LLC	Inspection mode switching circuit	Granted	12/21/2009	12/642,935	7/3/2012	8,212,553
Westinghouse Electric Company LLC	Process for adding an organic compound to coolant water in a pressurized water reactor	Granted	3/31/2009	12/414,748	7/31/2012	8,233,581
Westinghouse Electric Company LLC	Steam generator dual head sludge lance and process lancing system	Granted	6/25/2008	12/145,828	8/7/2012	8,238,510

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Nuclear fuel assembly protective bottom grid	Granted	6/9/2009	12/480,827	8/7/2012	8,238,511
Westinghouse Electric Company LLC	Dynamic port for measuring reactor coolant pump bearing oil level	Granted	6/29/2009	12/493,261	8/21/2012	8,246,313
Westinghouse Electric Company LLC	Control rod drive outer filter removal tool	Granted	9/22/2009	12/564,117	8/28/2012	8,254,516
Westinghouse Electric Company LLC	Triuranium disilicide nuclear fuel composition for use in light water reactors	Granted	6/30/2010	12/827,237	10/23/2012	8,293,151
Westinghouse Electric Company LLC	Inspection vehicle for a turbine disk	Granted	6/30/2010	12/826,789	12/18/2012	8,333,116
Westinghouse Electric Company LLC	Thermally activated shutdown seals for rotatable shafts	Granted	12/7/2009	12/631,888	1/22/2013	8,356,972
Westinghouse Electric Company LLC	Helically fluted tubular fuel rod support	Granted	8/10/2009	12/538,307	1/22/2013	8,358,733
Westinghouse Electric Company LLC	Nuclear fuel assembly support grid	Granted	10/30/2009	12/609,259	2/5/2013	8,369,475
Westinghouse Electric Company LLC	Helically fluted tubular fuel rod support	Granted	1/11/2005	11/033,434	2/12/2013	8,374,308
Westinghouse Electric Company LLC	Method of modeling steam generator and processing steam generator tube data of nuclear power plant	Granted	4/14/2010	12/760,148	3/5/2013	8,387,444
Westinghouse Electric Company LLC	Eddy current inspection probe for inspecting the interior of a tubular member	Granted	10/20/2009	12/582,196	3/5/2013	8,390,278

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Noise and vibration mitigation system for nuclear reactors employing an acoustic side branch resonator	Granted	2/15/2011	13/027,322	3/12/2013	8,393,437
Westinghouse Electric Company LLC	Nuclear reactor vessel fuel thermal insulating barrier	Granted	5/3/2007	11/743,844	3/19/2013	8,401,142
Westinghouse Electric Company LLC	Method for automated position verification	Granted	10/8/2010	12/900,819	4/2/2013	8,412,483
Westinghouse Electric Company LLC	System and method for removal of dissolved gases in makeup water of a water-cooled nuclear reactor	Granted	9/8/2010	12/877,145	4/9/2013	8,414,685
Westinghouse Electric Company LLC	Nuclear reactor cavity arrangements for ice condenser plants	Granted	3/7/2011	13/041,464	4/9/2013	8,416,911
Westinghouse Electric Company LLC	Method of improving the spent nuclear fuel burnup credit	Granted	12/20/2007	11/961,196	4/23/2013	8,428,215
Westinghouse Electric Company LLC	Calibration detection system and method	Granted	10/8/2010	12/900,555	5/7/2013	8,437,974
Westinghouse Electric Company LLC	Shipping package up-ender	Granted	4/18/2006	11/379,082	5/21/2013	8,447,006
Westinghouse Electric Company LLC	Anti-vibration bar clamping tool and method	Granted	6/2/2011	13/151,621	7/9/2013	8,479,392
Westinghouse Electric Company LLC	Nuclear reactor control rod spider assembly	Granted	4/16/2007	11/735,612	7/9/2013	8,483,346
Westinghouse Electric Company LLC	Upper internals arrangement for a pressurized water reactor	Granted	4/10/2007	11/733,248	7/9/2013	8,483,347

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Cartridge type vortex suppression device	Granted	1/3/2008	11/968,708	8/27/2013	8,517,053
Westinghouse Electric Company LLC	Top guide inspection fixture	Granted	12/13/2010	12/965,966	9/3/2013	8,526,564
Westinghouse Electric Company LLC	Core shroud corner joints	Granted	12/10/2009	12/634,836	9/10/2013	8,532,245
Westinghouse Electric Company LLC	Nuclear reactor robust gray control rod	Granted	8/17/2007	11/840,424	9/10/2013	8,532,246
Westinghouse Electric Company LLC	Advanced gray rod control assembly	Granted	2/8/2008	12/028,119	9/17/2013	8,537,962
Westinghouse Electric Company LLC	Captive screw device and method	Granted	5/10/2011	13/104,308	9/24/2013	8,539,657
Westinghouse Electric Company LLC	Methodology for modeling the fuel rod power distribution within a nuclear reactor core	Granted	6/7/2011	13/154,509	10/1/2013	8,548,789
Westinghouse Electric Company LLC	Advanced logic system diagnostics and monitoring	Granted	10/28/2010	12/914,737	10/8/2013	8,554,953
Westinghouse Electric Company LLC	Nuclear reactor automatic depressurization system	Granted	12/20/2010	12/972,568	10/15/2013	8,559,584
Westinghouse Electric Company LLC	Cold shutdown assembly for sodium cooled reactor	Granted	1/27/2009	12/360,329	10/15/2013	8,559,585
Westinghouse Electric Company LLC	Under vessel local power range monitor exchange tool	Granted	5/6/2010	12/774,895	10/22/2013	8,561,287

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Unirradiated nuclear fuel component transport system	Granted	10/21/2010	12/908,932	10/22/2013	8,565,365
Westinghouse Electric Company LLC	Dynamic port for measuring reactor coolant pump bearing oil level	Granted	6/29/2012	13/537,093	10/29/2013	8,568,105
Westinghouse Electric Company LLC	Neutron absorber consisting of refractory metal infused with discrete neutron absorber	Granted	9/7/2011	13/226,552	10/29/2013	8,571,165
Westinghouse Electric Company LLC	Facility life management method	Granted	11/15/2002	10/298,157	10/29/2013	8,571,911
Westinghouse Electric Company LLC	Nuclear fuel assemblies with structural support replacement rods	Granted	1/13/2006	11/332,058	11/26/2013	8,594,269
Westinghouse Electric Company LLC	Inspection vehicle for a turbine disk	Granted	11/8/2012	13/671,666	12/3/2013	8,596,130
Westinghouse Electric Company LLC	Wireless transmission of nuclear instrumentation signals	Granted	10/13/2009	12/577,789	12/3/2013	8,599,987
Westinghouse Electric Company LLC	Control rod transfer device	Granted	3/23/2011	13/069,615	12/3/2013	8,599,988
Westinghouse Electric Company LLC	Process for application of lubricant to fuel rod during fuel assembly loading process	Granted	12/22/2009	12/644,257	12/3/3013	8,599,990
Westinghouse Electric Company LLC	Wedge positioning apparatus for jet pump assemblies in nuclear reactors	Granted	11/1/2010	12/916,660	12/10/2013	8,605,852
Westinghouse Electric Company LLC	Modular radial neutron reflector	Granted	10/14/2010	12/904,347	12/24/2013	8,615,065

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Westinghouse Electric Company LLC	Neutron source assembly	Granted	2/1/2011	13/018,478	1/7/2014	8,625,733
Westinghouse Electric Company LLC	System for exchanging a component of a nuclear reactor	Granted	9/20/2010	12/885,640	1/21/2014	8,634,513
Westinghouse Electric Company LLC	Nuclear reactor alignment plate configuration	Granted	9/14/2007	11/855,196	1/28/2014	8,638,900
Westinghouse Electric Company LLC	Optimum configuration for fast reactors	Granted	11/29/2010	12/980,398	1/28/2014	8,638,901
Westinghouse Electric Company LLC	Miniature sludge lance apparatus	Granted	11/2/2010	12/938,027	2/11/2014	8,646,416
Westinghouse Electric Company LLC	Nuclear fuel rod plenum spring assembly	Granted	3/4/2014	12/985,430	3/4/2014	8,666,018
Westinghouse Electric Company LLC	Hatch mechanical locking system	Granted	10/20/2008	12/254,203	3/11/2014	8,670,514
Westinghouse Electric Company LLC	Digital nuclear control rod control system	Granted	6/3/2010	12/792,834	3/11/2014	8,670,515
Westinghouse Electric Company LLC	Nuclear fuel assembly hold down spring	Granted	10/11/2010	12/901,599	3/11/2014	8,670,519
Westinghouse Electric Company LLC	Nuclear fuel cladding having an exterior comprising burnable poison in contact with aqueous reactor coolant	Granted	8/18/2010	12/858,496	3/18/2014	8,675,809
Westinghouse Electric Company LLC	Self-powered wireless in-core detector	Granted	1/7/2011	12/986,217	3/25/2014	8,681,920

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Westinghouse Electric Company LLC	Pressurizer with a mechanically attached surge nozzle thermal sleeve	Granted	12/14/2010	12/967,167	3/25/2014	8,681,922
Westinghouse Electric Company LLC	Nuclear reactor fuel assembly	Granted	1/15/2008	12/014,133	3/25/2014	8,681,929
Westinghouse Electric Company LLC	Method of achieving automatic axial power distribution control	Granted	10/24/2011	13/279,596	4/15/2014	8,699,653
Westinghouse Electric Company LLC	Method of improving wear and corrosion resistance of rod control cluster assemblies	Granted	3/10/2011	13/044,690	4/15/2014	8,699,655
Westinghouse Electric Company LLC	Squib control circuit	Granted	9/19/2011	13/235,538	4/29/2014	8,710,805
Westinghouse Electric Company LLC	Retention apparatus employing wedge element and engagement assembly for use in a nuclear application	Granted	12/16/2011	13/328,148	5/6/2014	8,714,187
Westinghouse Electric Company LLC	Method and composition for removing deposits	Granted	1/26/2010	13/139,173	5/20/2014	8,728,246
Westinghouse Electric Company LLC	Nondestructive inspection method for a heat exchanger employing adaptive noise thresholding	Granted	10/1/2010	12/895,942	6/3/2014	8,742,752
Westinghouse Electric Company LLC	Minature sludge lance apparatus	Granted	4/1/2011	13/078,026	6/17/2014	8,752,511
Westinghouse Electric Company LLC	Underwater robotic venting and inspection system	Granted	4/23/2012	13/453,237	6/24/2014	8,757,084

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Westinghouse Electric Company LLC	Miniature sludge lance apparatus	Granted	4/1/2011	13/078,022	6/24/2014	8,757,104
Westinghouse Electric Company LLC	Rod position detection apparatus and method	Granted	9/22/2011	13/239,436	6/24/2014	8,761,329
Westinghouse Electric Company LLC	Wireless in-core neutron monitor	Granted	1/7/2011	12/986,242	7/1/2014	8,767,903
Westinghouse Electric Company LLC	Miniature sludge lance apparatus	Granted	4/1/2011	13/078,014	8/12/2014	8,800,499
Westinghouse Electric Company LLC	Miniature sludge lance apparatus	Granted	4/1/2011	13/078,017	8/12/2014	8,800,500
Westinghouse Electric Company LLC	Nuclear fuel rod pellet stack inspection	Granted	11/22/2011	13/302,104	9/23/2014	8,842,796
Westinghouse Electric Company LLC	Alternate feedwater injection system to mitigate the effects of aircraft impact on a nuclear power plant	Granted	9/24/2010	12/889,500	9/30/2014	8,848,854
Westinghouse Electric Company LLC	Method of segmenting irradiated boiling water reactor control rod blades	Granted	9/13/2012	13/612,905	10/14/2014	8,857,027
Westinghouse Electric Company LLC	Primary neutron source multiplier assembly	Granted	10/7/2010	12/899,596	10/28/2014	8,873,694
Westinghouse Electric Company LLC	Support apparatus for supporting dosimetry system in proximity to reactor apparatus	Granted	12/19/2011	13/329,497	11/18/2014	8,891,722
Westinghouse Electric Company LLC	Fuel rod internal pressure measurement	Granted	5/21/2008	12/124,398	12/2/2014	8,903,034

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Tubesheet walker for heat exchanger inspections	Granted	2/25/2013	13/775,354	1/20/2015	8,938,044
Westinghouse Electric Company LLC	Demister vane in situ cleaning fixture	Granted	1/5/2012	13/343,736	2/3/2015	8,945,291
Westinghouse Electric Company LLC	Nuclear reactor internal hydraulic control rod drive mechanism assembly	Granted	12/8/2011	13/314,506	2/10/2015	8,953,732
Westinghouse Electric Company LLC	Steam generator dual system sludge and loose parts collector	Granted	2/22/2008	12/035,722	2/10/2015	8,953,735
Westinghouse Electric Company LLC	Fuel handling area passive filtration design	Granted	6/2/2011	13/151,714	2/17/2015	8,958,522
Westinghouse Electric Company LLC	Deposition of integrated protective material into zirconium cladding for nuclear reactors by high-velocity thermal application	Granted	11/7/2012	13/670,808	3/3/2015	8,971,476
Westinghouse Electric Company LLC	Tubesheet gripping mechanism and method	Granted	3/5/2013	13/785,340	3/10/2015	8,973,648
Westinghouse Electric Company LLC	Conduit length adjustment apparatus and method	Granted	7/27/2012	13/559,764	3/17/2015	8,978,493
Westinghouse Electric Company LLC	Chemical cleaning method and system with steam injection	Granted	12/3/2009	13/063,443	4/7/2015	8,999,072
Westinghouse Electric Company LLC	Nuclear fuel assembly with a lock-support spacer grid	Granted	4/14/2008	12/102,123	4/28/2015	9,020,091
Westinghouse Electric Company LLC	Control rod drive shaft unlatching tool	Granted	6/2/2011	13/151,305	5/5/2015	9,025,720

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Nuclear control rod with flexure joint	Granted	6/7/2012	13/490,494	6/9/2015	9,053,824
Westinghouse Electric Company LLC	Protective grid attachment	Granted	3/3/2010	12/716,311	6/9/2015	9,053,826
Westinghouse Electric Company LLC	Nuclear fuel assembly with pivot dimpled grids	Granted	3/27/2009	12/412,411	6/9/2015	9,053,827
Westinghouse Electric Company LLC	Nuclear reactor bottom-mounted instrumentation nozzle repair method	Granted	3/11/2013	13/792,638	6/9/2015	9,053,828
Westinghouse Electric Company LLC	Method to extract tritium from irradiated boiling water reactor control rod blades	Granted	9/13/2012	13/612,917	6/16/2015	9,058,907
Westinghouse Electric Company LLC	Method and apparatus for refueling a nuclear reactor having an instrumentation penetration flange	Granted	1/16/2013	13/742,392	6/23/2015	9,064,607
Westinghouse Electric Company LLC	Inspection mode switching circuit	Granted	5/29/2012	13/482,251	6/30/2015	9,068,741
Westinghouse Electric Company LLC	Upper internals arrangement for a pressurized water reactor	Granted	12/15/2009	12/638,138	7/14/2015	9,082,519
Westinghouse Electric Company LLC	Captive screw	Granted	8/20/2013	13/970,634	7/28/2015	9,091,292
Westinghouse Electric Company LLC	Nuclear steam generator steam nozzle flow restrictor	Granted	8/3/2011	13/197,010	7/28/2015	9,091,429
Westinghouse Electric Company LLC	Heavy radial neutron reflector for pressurized water reactors	Granted	12/20/2012	13/721,138	7/28/2015	9,093,183

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Method of replacing shroud of boiling water nuclear reactor, and associated apparatus	Granted	11/18/2011	13/299,824	10/27/2015	9,171,648
Westinghouse Electric Company LLC	Axial flow steam generator feedwater dispersion apparatus	Granted	7/10/2012	13/545,302	11/3/2015	9,175,845
Westinghouse Electric Company LLC	Passive containment air cooling for nuclear power plants	Granted	4/12/2012	13/444,967	11/3/2015	9,177,675
Westinghouse Electric Company LLC	Method of processing steam generator tubes of nuclear power plant	Granted	4/14/2010	12/760,124	11/3/2015	9,177,678
Westinghouse Electric Company LLC	Method for refueling a nuclear reactor having an instrumentation penetration flange	Granted	5/12/2015	14/709,813	11/17/2015	9,190,178
Westinghouse Electric Company LLC	Pump seal with thermal retracting actuator	Granted	3/13/2013	13/798,632	3/13/2013	9,206,791
Westinghouse Electric Company LLC	Pump seal with thermal retracting actuator	Granted	8/20/2013	13/970,899	12/8/2015	9,206,812
Westinghouse Electric Company LLC	Pressurized water reactor compact steam generator	Granted	6/13/2012	13/495,050	12/8/2015	9,206,978
Westinghouse Electric Company LLC	Access hole cover ultrasonic inspection tooling	Granted	3/15/2013	13/832,251	12/8/2015	9,207,217
Westinghouse Electric Company LLC	Self powered neutron detector	Granted	4/29/2013	13/872,186	12/8/2015	9,207,335
Westinghouse Electric Company LLC	Reinforcement for a nuclear fuel assembly	Granted	4/15/2008	12/103,010	12/8/2015	9,208,904

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Westinghouse Electric Company LLC	Passive system for cooling the core of a nuclear reactor	Granted	1/18/2013	13/744,440	12/8/2015	9,208,906
Westinghouse Electric Company LLC	Method of validating nuclear reactor in-vessel detector output signals	Granted	2/20/2013	13/771,115	12/8/2015	9,208,907
Westinghouse Electric Company LLC	Full spectrum LOCA evaluation model and analysis methodology	Granted	11/23/2011	13/303,188	12/8/2015	9,208,911
Westinghouse Electric Company LLC	Method of fastening a captive screw to a panel	Granted	8/12/2013	13/964,320	12/15/2015	9,212,683
Westinghouse Electric Company LLC	Pump seal with thermal retracting actuator	Granted	11/6/2013	14/072,891	12/22/2015	9,217,441
Westinghouse Electric Company LLC	Mobile boration system	Granted	3/11/2013	13/792,465	2/23/2016	9,266,756
Westinghouse Electric Company LLC	Reactor coolant pump motor load-bearing assembly configuration	Granted	6/29/2009	12/493,267	3/1/2016	9,273,694
Westinghouse Electric Company LLC	Small modular reactor safety systems	Granted	6/13/2012	13/495,083	3/1/2016	9,275,761
Westinghouse Electric Company LLC	Method and apparatus for the shielded relocation of a nuclear component	Granted	1/15/2013	13/741,664	3/1/2016	9,275,765
Westinghouse Electric Company LLC	Apparatus for vertically segmenting a boiling water reactor control rod blade	Granted	9/13/2012	13/612,982	3/1/2016	9,275,766
Westinghouse Electric Company LLC	Systems and methods for generating power employing VES air supply stored energy	Granted	2/6/2013	13/760,165	3/1/2016	9,275,767

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Method and apparatus for delivering a tool to the interior of a heat exchange tube	Granted	4/10/2013	13/891,219	3/8/2016	9,279,582
Westinghouse Electric Company LLC	Mobile boration system	Granted	3/5/2015	14/639,288	3/8/2016	9,281,087
Westinghouse Electric Company LLC	Zirconium alloys with improved corrosion/creep resistance due to final heat treatments	Granted	6/16/2011	13/161,563	3/15/2016	9,284,629
Westinghouse Electric Company LLC	Domed diaphragm / insert plate for a pressure vessel access closure	Granted	9/9/2009	12/555,826	3/15/2016	9,285,033
Westinghouse Electric Company LLC	Modular plate and shell heat exchanger	Granted	4/29/2009	12/432,147	3/15/2016	9,285,172
Westinghouse Electric Company LLC	Thermo-acoustic nuclear power distribution measurement assembly	Granted	7/14/2014	14/330,010	3/15/2016	9,287,014
Westinghouse Electric Company LLC	Advanced first core fuel assembly configuration and method of implementing the same	Granted	4/19/2012	13/451,050	3/22/2016	9,293,228
Westinghouse Electric Company LLC	Pressurized water reactor flow skirt apparatus	Granted	2/7/2008	12/027,341	4/5/2016	9,305,668
Westinghouse Electric Company LLC	Semi-portable emergency cooling system for removing decay heat from a nuclear reactor	Granted	11/14/2011	13/295,377	4/12/2016	9,312,035
Westinghouse Electric Company LLC	Apparatus and method to inspect, modify, or repair nuclear reactor core shrouds	Granted	3/13/2013	13/798,474	4/19/2016	9,318,226

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Apparatus and method for removing the upper internals from a nuclear reactor pressurized vessel	Granted	1/15/2013	13/741,737	4/19/2016	9,318,227
Westinghouse Electric Company LLC	Pipeline clamp for vibration measurement	Granted	8/23/2012	13/592,451	4/26/2016	9,322,492
Westinghouse Electric Company LLC	Reactor head seismic support tie rod system	Granted	7/13/2010	12/834,963	4/26/2016	9,324,462
Westinghouse Electric Company LLC	Apparatus and method to inspect nuclear reactor components in the core annulus, core spray and feedwater sparger regions in a nuclear reactor	Granted	3/15/2013	13/832,082	4/26/2016	9,324,464
Westinghouse Electric Company LLC	Targeted heat exchanger deposit removal by combined dissolution and mechanical removal	Granted	10/29/2013	14/065,728	5/10/2016	9,334,579
Westinghouse Electric Company LLC	Systems and methods for steam generator tube analysis for detection of tube degradation	Granted	7/26/2013	13/951,984	5/10/2016	9,335,296
Westinghouse Electric Company LLC	Deposition of integrated protective material into zirconium cladding for nuclear reactors by high-velocity thermal application	Granted	11/20/2014	14/548,630	5/10/2016	9,336,909
Westinghouse Electric Company LLC	Signal processing of lamb wave data for pipe inspection	Granted	12/13/2012	13/713,364	5/24/2016	9,347,851
Westinghouse Electric Company LLC	Method of accessing a core of a nuclear reactor	Granted	6/9/2015	14/734,368	6/21/2016	9,373,423

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Eddy current inspection probe	Granted	3/12/2013	13/795,109	7/19/2016	9,395,390
Westinghouse Electric Company LLC	Passive system for cooling the core of a nuclear reactor	Granted	10/21/2015	14/918,665	8/2/2016	9,406,408
Westinghouse Electric Company LLC	Automated analysis coverage verification (AACV)	Granted	9/27/2012	13/628,255	8/23/2016	9,423,407
Westinghouse Electric Company LLC	Systems and methods for spent fuel pool subcriticality measurement and monitoring	Granted	6/3/2013	13/908,153	8/23/2016	9,423,516
Westinghouse Electric Company LLC	Apparatus and method to control sensor position in limited access areas within a nuclear reactor	Granted	3/14/2013	13/802,907	9/6/2016	9,437,333
Westinghouse Electric Company LLC	Process for adding an organic compound to coolant water in a pressurized water reactor	Granted	6/20/2012	13/528,557	9/13/2016	9,443,622
Westinghouse Electric Company LLC Toshiba Energy Systems & Solutions Corporation	SiC matrix fuel cladding tube with spark plasma sintered end plugs	Granted	9/16/2013	14/027,299	9/27/2016	9,455,053
Westinghouse Electric Company LLC	Expansion gap radiation shield	Granted	3/2/2010	12/715,420	10/11/2016	9,466,399
Westinghouse Electric Company LLC	Method for delivering a tool to the interior of a heat exchange tube	Granted	1/6/2016	14/988,835	10/18/2016	9,470,414

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Pressurizer surge-line separator for integral pressurized water reactors	Granted	5/21/2012	13/476,191	10/25/2016	9,478,317
Westinghouse Electric Company LLC	Method for in-core instrumentation withdrawal from the core of a pressurized water reactor	Granted	8/18/2014	14/461,555	10/25/2016	9,478,320
Westinghouse Electric Company LLC	Filter for a nuclear reactor containment ventilation system	Granted	3/11/2013	13/792,401	11/22/2016	9,502,144
Westinghouse Electric Company LLC	Rib-type roughness design for improved heat transfer in PWR rod bundles	Granted	10/28/2013	14/064,531	12/6/2016	9,514,851
Westinghouse Electric Company LLC	Method to reduce the volume of boiling water reactor fuel channels for storage	Granted	9/13/2012	13/612,921	12/6/2016	9,514,852
Westinghouse Electric Company LLC	Dual drive winch and nuclear reactor vessel maintenance apparatus employing same	Granted	5/6/2010	12/774,880	12/27/2016	9,527,701
Westinghouse Electric Company LLC	Pulsed neutron generated prompt gamma emission measurement system for surface defect detection and analysis	Granted	5/17/2016	15/156,757	12/27/2016	9,528,952
Westinghouse Electric Company LLC	Steam generator tube lane flow buffer	Granted	8/4/2011	13/197,890	1/3/2017	9,534,779
Westinghouse Electric Company LLC	Nuclear fuel assembly support grid	Granted	12/3/2014	14/559,029	1/3/2017	9,536,628
Westinghouse Electric Company LLC	Passive power production during a nuclear station blackout	Granted	2/12/2013	13/764,804	1/3/2017	9,536,629

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Reactor in-core instrument handling system	Granted	4/11/2013	13/860,728	4/11/2017	9,620,254
Westinghouse Electric Company LLC	Nuclear control rod position indication system	Granted	12/15/2011	13/326,465	4/11/2017	9,620,255
Westinghouse Electric Company LLC	Solid state electrical generator	Granted	1/21/2014	14/159,653	5/2/2017	9,640,290
Westinghouse Electric Company LLC	Alternate passive spent fuel pool cooling systems and methods	Granted	2/6/2013	13/760,263	5/9/2017	9,646,726
Westinghouse Electric Company LLC	Laser sintering systems and methods for remote manufacture of high density pellets containing highly radioactive elements	Granted	1/18/2013	13/744,711	5/9/2017	9,646,729
Westinghouse Electric Company LLC	Instrumentation and control penetration flange for pressurized water reactor	Granted	4/27/2012	13/457,683	5/23/2017	9,659,674
Westinghouse Electric Company LLC	Jet pump diffuser stack repair	Granted	10/1/2013	14/043,084	5/23/2017	9,659,676
Westinghouse Electric Company LLC	Method of detecting and outputting radiation dose rate information	Granted	2/15/2016	15/043,899	5/30/2017	9,664,796
Westinghouse Electric Company LLC	Anti-clogging steam generator tube bundle	Granted	10/13/2011	13/272,524	6/20/2017	9,683,732
Westinghouse Electric Company LLC	Anti-vibration tube support plate arrangement for steam generators	Granted	12/29/2010	12/980,418	7/4/2017	9,697,919
Westinghouse Electric Company LLC	Thermal retracting actuator	Granted	10/19/2015	14/886,438	7/25/2017	9,714,644

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Loop dissolution system	Granted	3/4/2014	14/195,875	8/1/2017	9,718,038
Westinghouse Electric Company LLC	Deposition of a protective coating including metal-containing and chromium-containing layers on zirconium alloy for nuclear power applications	Granted	5/27/2014	14/287,435	8/1/2017	9,721,676
Westinghouse Electric Company LLC	Wireless transmission of nuclear instrumentation signals	Granted	10/18/2013	14/057,346	8/1/2017	9,721,683
Westinghouse Electric Company LLC	Electrical system, and connection device and method of powering a switchgear bus in an electrical system	Granted	11/13/2014	14/540,139	8/1/2017	9,722,399
Westinghouse Electric Company LLC	Zirconium alloys with improved corrosion/creep resistance due to final heat treatments	Granted	6/22/2015	14/745,792	8/8/2017	9,725,791
Westinghouse Electric Company LLC	Versatile pinch point avoidance recuperator for supercritical carbon dioxide power generation systems	Granted	2/24/2016	15/052,005	8/8/2017	9,726,050
Westinghouse Electric Company LLC	Nuclear fuel assembly having a spacer grid with one or more seamless corners	Granted	6/20/2013	13/922,629	8/15/2017	9,734,923
Westinghouse Electric Company LLC	Additives for heat exchanger deposit removal in a wet layup condition	Granted	4/18/2012	13/449,730	8/22/2017	9,738,551
Westinghouse Electric Company LLC	Combined core makeup tank and heat removal system for a small modular pressurized water reactor	Granted	6/13/2012	13/495,069	8/29/2017	9,748,004

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Apparatus and method to inspect nuclear reactor components in the core annulus, core spray and feedwater sparger regions in a nuclear reactor	Granted	3/21/2016	15/075,440	8/29/2017	9,748,005
Westinghouse Electric Company LLC	Method for monitoring boron dilution during a reactor outage	Granted	10/21/2013	14/058,324	9/12/2017	9,761,335
Westinghouse Electric Company LLC	Pressurized water reactor fuel assembly	Granted	9/25/2014	14/495,957	9/26/2017	9,773,573
Westinghouse Electric Company LLC	Method and apparatus for manipulating equipment inside a steam generator	Granted	7/23/2014	14/338,368	10/17/2017	9,791,145
Westinghouse Electric Company LLC	Ambient temperature decontamination of nuclear power plant component surfaces containing radionuclides in a metal oxide	Granted	10/29/2013	14/065,741	10/17/2017	9,793,018
Westinghouse Electric Company LLC	Triuranium disilicide nuclear fuel composition for use in light water reactors	Published	6/17/2011	13/162,876	{1/5/2012}	{2012-0002777}
Westinghouse Electric Company LLC	Submersible machine structured to carry a tool to a limited location within a nuclear containment	On Appeal	9/12/2011	13/230,434	{4/26/2012}	{2012-0099692}
Westinghouse Electric Company LLC	Nuclear reactor internal electric control rod drive mechanism assembly	On Appeal	12/8/2011	13/314,519	{6/14/2012}	{2012-0148007}
Westinghouse Electric Company LLC	Tool for delivery of testing element to a limited access location within a nuclear containment	On Appeal	9/12/2011	13/230,455	{9/20/2012}	{2012-0236978}

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Self-contained emergency spent nuclear fuel pool cooling system	Allowed	11/8/2011	13/291,334	{10/4/2012}	{2012-0250813}
Westinghouse Electric Company LLC	Method of detecting an existence of a loose part in a steam generator of a nuclear power plant	On Appeal	1/4/2012	13/343,067	{10/11/2012}	{2012-0257705}
Westinghouse Electric Company LLC	Reactor vessel internals radiation analyses	Published	4/7/2011	13/081,805	{10/11/2012}	{2012-0257706}
Westinghouse Electric Company LLC	In-core instrument thimble assembly	On Appeal	10/3/2012	13/644,133	{4/4/2013}	{2013-0083879}
Westinghouse Electric Company LLC	Optimized flower tubes and optimized advanced grid configurations	On Appeal	12/3/2012	13/691,891	{7/11/2013}	{2013-0177127}
Westinghouse Electric Company LLC	Control rod drive mechanism ("CRDM") assembly for a nuclear reactor	Published	2/28/2012	13/406,876	{8/29/2013}	{2013-0223579}
Westinghouse Electric Company LLC	Methods for protection of nuclear reactors from thermal hydraulic/neutronic core instability	On Appeal	3/13/2013	13/798,418	{10/10/2013}	{2013-0266107}
Westinghouse Electric Company LLC	Solid state radiation detector with enhanced gamma radiation sensitivity	Published	2/18/2013	13/769,401	{10/31/2013}	{2013-0285068}
Westinghouse Electric Company LLC	Method of refueling a nuclear reactor	On Appeal	5/2/2012	13/461,821	{11/7/2013}	{2013-0294565}
Westinghouse Electric Company LLC	Slidable duct connection	On Appeal	10/1/2012	13/632,188	{4/3/2014}	{2014-0091570}

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Apparatus and method to switch ultrasonic signal paths in a moderately high radiation area	Published	3/15/2013	13/834,432	{4/10/2014}	{2014-0098923}
Westinghouse Electric Company LLC	Steam generator dual head sludge lance	On Appeal	10/22/2013	14/059,714	{6/12/2014}	{2014-0161219}
Westinghouse Electric Company LLC	Nuclear fuel assembly handling apparatus	Published	3/5/2013	13/785,448	12/26/2017	9852821
Westinghouse Electric Company LLC	Nuclear radiation dosimeter using stress induced birefringence changes in fiber optic cables	Published	3/14/2013	13/803,104	{9/18/2014}	{2014-0270039}
Westinghouse Electric Company LLC	Methodology for the analysis of mslb and tsv acoustic transients in bwr's	Published	3/15/2013	13/834,768	{9/18/2014}	{2014-0278293}
Westinghouse Electric Company LLC	Ion chamber radiation detector	On Appeal	8/23/2013	13/974,384	{2/26/2015}	{2015-0055742}
Westinghouse Electric Company LLC	High temperature strength, corrosion resistant, accident tolerant nuclear fuel assembly grid	Published	10/4/2013	14/046,012	{4/9/2015}	{2015-0098546}
Westinghouse Electric Company LLC	Steam generator sludge lance apparatus	Granted	12/20/2013	14/135,619	3/20/2018	9920925
Westinghouse Electric Company LLC	Apparatus and method to remotely inspect piping attachment welds	Published	10/15/2014	14/514,465	{8/6/2015}	{2015-0221401}
Westinghouse Electric Company LLC	Ultrasonic phased array transducer for the NDE inspection of the Jet Pump Riser Welds and Welded Attachments	On Appeal	1/15/2015	14/597,644	{1/15/2015}	{2015-0233869}

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Zirconium alloys with improved corrosion/creep resistance due to final heat treatments	Published	7/6/2015	14/791,934	{10/29/2015}	{2015-0307976}
Westinghouse Electric Company LLC	Nuclear fuel element	Granted	4/29/2014	14/264,283	12/19/2017	9847143
Westinghouse Electric Company LLC	Crush resistant nuclear fuel assembly support grid	Published	6/10/2014	14/300,259	{12/10/2015}	{2015-0357053}
Westinghouse Electric Company LLC	Control rod guide tube with an extended intermediate guide assembly	Published	6/4/2014	14/295,521	{12/10/2015}	{2015-0357055}
Westinghouse Electric Company LLC	Targeted isotope production system	Published	7/8/2014	14/325,401	{1/14/2016}	{2016-0012928}
Westinghouse Electric Company LLC	Total integrated tube analysis	Granted	7/15/2015	14/800,076	4/17/2018	9945814
Westinghouse Electric Company LLC	Method of servicing modular plate and shell heat exchanger	On Appeal	10/9/2015	14/879,397	{2/4/2016}	{2016-0033216}
Westinghouse Electric Company LLC	Chemical process for primary system material passivation during hot functional testing of nuclear power plants	Published	7/29/2015	14/812,051	{2/4/2016}	{2016-0035442}
Westinghouse Electric Company LLC	Nuclear fuel element corrugated plenum holddown device	Published	10/1/2014	14/503,443	{4/7/2016}	{2016-0099080}
Westinghouse Electric Company LLC	Advanced first core fuel assembly configuration	Granted	12/2/2015	14/956,469	5/29/2018	9984779
Westinghouse Electric Company LLC	Method for shielded relocation of a nuclear component	Granted	11/10/2015	14/936,893	3/20/2018	9922739

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Nuclear fuel assembly support feature	Published	5/19/2015	14/715,646	{6/23/2016}	{2016-0180972}
Westinghouse Electric Company LLC	Targeted heat exchanger deposit removal by combined dissolution and mechanical removal	Published	3/23/2016	15/078,052	{7/14/2016}	{2016-0201214}
Westinghouse Electric Company LLC	Systems and methods for steam generator tube analysis for detection of tube degradation	Published	3/23/2016	15/078,348	{7/14/2016}	{2016-0202212}
Westinghouse Electric Company LLC	Apparatus and method for removing the upper internals from a nuclear reactor pressurized vessel	Published	3/10/2016	15/066230	{7/14/2016}	{2016-0203882}
Westinghouse Electric Company LLC	Magneto-rheological fluid based filter/reflector	Published	2/9/2015	14/617,144	{8/11/2016}	{2016-0232995}
Westinghouse Electric Company LLC	Deposition of integrated protective material into zirconium cladding for nuclear reactors by high-velocity thermal application	Published	3/30/2016	15/084,577	{9/1/2016}	{2016-0254067}
Westinghouse Electric Company LLC	Nuclear power plant containment real-time remote operations management employing server and client	Published	4/21/2016	15/134,577	{10/27/2016}	{2016-0315666}
Westinghouse Electric Company LLC	Delivery device usable in laser peening operation, and associated method	Published	5/10/2016	15/150,672	{11/17/2016}	{2016-0333433}
Westinghouse Electric Company LLC	Remote heat removal system	Published	2/26/2016	15/054,254	{11/17/2016}	{2016-0336083}

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC Kabushiki Kaisha Toshiba	SiC matrix fuel cladding tube with spark plasma sintered end plugs	Published	8/1/2016	15/225,127	{12/8/2016}	{2016-0358673}
Westinghouse Electric Company LLC	Alternative passive spent fuel pool cooling systems and methods	Published	9/23/2016	15/274,761	{1/12/2017}	{2017-0011813}
Westinghouse Electric Company LLC	Under vessel automated work platform assembly	Published	7/14/2015	14/798,730	{1/19/2017}	{2017-0018321}
Westinghouse Electric Company LLC	Method of predicting wear on tubes of steam generator	Granted	7/20/2016	15/215,002	12/19/2017	9845950
Westinghouse Electric Company LLC	Nuclear fuel assembly with seismic/loca tolerance gird	Published	7/29/2015	14/812,466	{2/2/2017}	{2017-0032853}
Westinghouse Electric Company LLC	Corrosion and wear resistant coating on zirconium alloy cladding	Granted	8/14/2015	14/826524	12/19/2017	9844923
Westinghouse Electric Company LLC	Method for measuring bow/twist of a fuel assembly	Published	8/12/2015	14/824,256	{2/16/2017}	{2017-0047131}
Westinghouse Electric Company LLC	Discharge apparatus usable for determining neutron flux	Published	8/31/2015	14/840,331	{3/2/2017}	{2017-0062083}
Westinghouse Electric Company LLC	Heat exchanger	Published	9/25/2015	14/865,786	{3/30/2017}	{2017-0089643}
Westinghouse Electric Company LLC	Cryogenic system for spent nuclear fuel pool emergency cooling & safety system	Published	10/12/2015	14/880,564	{4/13/2017}	{2017-0103820}
Westinghouse Electric Company LLC	modular electrochemical machining apparatus	Published	11/10/2015	14/936,751	{5/11/2017}	{2017-0129030}

Company / Owner	Title	Status	Filing Date	Application No.	Grant Date {Publication date}	Grant No. {Publication No.}
Westinghouse Electric Company LLC	Subcritical reactivity monitor utilizing prompt self-powered incore detectors	Published	11/12/2015	14/939,116	{5/18/2017}	{2017-0140842}
Westinghouse Electric Company LLC	Multilayer composite fuel clad system with high temperature hermeticity and accident tolerance	Granted	12/2/2015	14/956,892	5/29/2018	9982350
Westinghouse Electric Company LLC	System usable in nuclear environment for providing breathing gas	Published	12/10/2015	14/965,120	{6/15/2017}	{2017-0169906}
Westinghouse Electric Company LLC	Hydraulic apparatus and hydraulic appliance usable therein	Published	12/31/2015	14/985,770	{7/6/2017}	{2017-0191508}
Westinghouse Electric Company LLC	Measurement apparatus for determining compressive loading that will be applied to a fuel rod of a pressurized water reactor	Published	12/31/2015	14/985,537	{7/6/2017}	{2017-0194064}
Westinghouse Electric Company LLC	Top nozzle and pressurized water nuclear reactor including same	Published	1/14/2016	14/995,563	{7/20/2017}	{2017-0206985}
Westinghouse Electric Company LLC	In-containment ex-core detector system	Published	1/15/2016	14/996,667	{7/20/2017}	{2017-0206989}
Westinghouse Electric Company LLC	Nuclear control rod position indication system	Published	1/15/2016	14/996,439	{7/20/2017}	{2017-0206990}
Westinghouse Electric Company LLC	Spring apparatus and support apparatus usable in nuclear installation	Published	2/2/2016	15/013,073	{8/3/2017}	{2017-0221591}
Westinghouse Electric Company LLC	Apparatus for degassing a nuclear reactor coolant system	Published	1/17/2017	15/407,508	{1/17/2017}	{2017-0229201}

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Westinghouse Electric Company LLC	Thermal retracting actuator	Published	5/4/2017	15/586,373	{8/17/2017}	{2017-0234305}
Westinghouse Electric Company LLC	Holding fixture to assist in assembly of support grid for nuclear fuel rods and method for assembling support grid for nuclear fuel rods	Published	2/17/2016	15/045,892	{8/17/2017}	{2017-0236603}
Westinghouse Electric Company LLC	Method of detecting and outputting radiation dose rate information	Published	5/11/2017	15/592,822	{8/31/2017}	{2017-0248702}
Westinghouse Electric Company LLC	Reactor coolant system piping temperature distribution measurement system	Published	3/10/2016	15/066,323	{9/14/2017}	{2017-0263341}
Westinghouse Electric Company LLC	Real-time reactor coolant system boron concentration monitor utilizing an ultrasonic spectroscopy system	Published	3/10/2016	15/066,607	{9/14/2017}	{2017-0263342}
Westinghouse Electric Company LLC	Modular plate and shell heat exchanger	Published	6/22/2017	15/629,791	{10/5/2017}	{2017-0284744}
Westinghouse Electric Company LLC	Integrated electrical coil and coil stack assembly	Published	5/20/2016	15/160,758	{11/23/2017}	{2017-0338028}
Westinghouse Electric Company LLC	Method to pressurize sic fuel cladding tube before end plug sealing by pressurization pushing spring loaded end plug	Pending	2/13/2018	15/895,472		
Westinghouse Electric Company LLC	Three dimensional printed precision magnets for fuel assembly	Pending	2/14/2018	15/896,473		

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Westinghouse Electric Company LLC	Coated u3si2 pellets with enhanced water and steam oxidation resistance	Pending	2/16/2018	15/898,308		
Westinghouse Electric Company LLC	Single rod ultrasonic leak detection tool	Pending	2/23/2018	15/903,111		
Westinghouse Electric Company LLC	Nuclear fuel assembly debris filtering bottom nozzle	Pending	3/16/2018	15/923,491		
Westinghouse Electric Company LLC	Steam generator dual head sludge lance	Pending	3/27/2018	15/936,520		
Westinghouse Electric Company LLC	Nuclear reactor system, transmitter device therefor, and associated method of measuring a number of environmental conditions	Pending	4/13/2018	15/952,597		
Westinghouse Electric Company LLC	Nuclear radiation dosimeter using stress induced birefringence changes in fiber optic cables	Pending	4/16/2018	15/953,865		
Westinghouse Electric Company LLC	Method of visually outputting to a worker during an operation a number of parameters pertaining to the operation, and associated apparatus	Pending	4/26/2018	15/963,159		
Westinghouse Electric Company LLC	Energy storage device	Pending	5/15/2018	15/979,628		
Westinghouse Electric Company LLC	Control rod guide tube with an extended intermediate guide assembly	Pending	5/17/2018	15/981,965		
Westinghouse Electric Company LLC	Method of detecting and outputting radiation dose rate information	Pending	5/24/2018	15/988,712		

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Westinghouse Electric Company LLC	Reactor internals sensor inserts	Granted	3/11/2014	14/203,679	3/20/2018	9,922,737
Westinghouse Electric Company LLC	Hydrostatic mechanical face seal	Granted	11/28/2016	15/361,755	3/20/2018	9920839
Westinghouse Electric Company LLC	In-situ self-powered monitoring of stored spent nuclear fuel	Granted	8/10/1999	09/371720	6/26/2001	6252923
Westinghouse Electric Company LLC	Floating pool seal assembly with leak limiting annular support structure	Granted	4/7/1999	09/287630	11/13/2001	6317477
Westinghouse Electric Company LLC	Sleeve assembly for nuclear fuel racks	Granted	8/17/2000	09/640627	8/27/2002	6442227
Westinghouse Electric Company LLC	Flexible penetration attachment for strainers	Granted	12/4/1998	09/205687	11/5/2002	6477220
Westinghouse Electric Company LLC	Method and apparatus to eliminate confirmation switches and channel demultiplexer from soft control man-machine interface	Granted	10/5/2000	09/679508	2/4/2003	6516041
Westinghouse Electric Company LLC	Semiconductor radiation source power monitor	Granted	10/17/2001	09/981834	4/1/2003	6542565
Westinghouse Electric Company LLC	Waterhammer suppression apparatus	Granted	2/25/2002	10/084024	4/8/2003	6543485
Westinghouse Electric Company LLC	Reduced pressure drop debris filter bottom nozzle for a fuel assembly of a nuclear reactor	Granted	7/17/2001	09/907405	8/19/2003	6608880

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Westinghouse Electric Company LLC	Protective maintenance display system	Granted	3/28/2001	09/819837	5/11/2004	6735549
Westinghouse Electric Company LLC	Crud-resistant nuclear fuel cladding	Granted	6/12/2003	10/459777	11/2/2004	6813329
Westinghouse Electric Company LLC	Pressurized water reactor shutdown method	Granted	7/30/2003	10/630056	9/13/2005	6944254
Westinghouse Electric Company LLC	Nuclear reactor fuel assemblies	Granted	9/5/2003	10/657025	8/1/2006	7085340
Westinghouse Electric Company LLC	Control system display for monitoring a complex process	Granted	9/17/2002	10/245998	8/1/2006	7085607
Westinghouse Electric Company LLC	Health monitoring display system for a complex plant	Granted	3/29/2002	10/157280	8/8/2006	7088255
Westinghouse Electric Company LLC	BWR inspection manipulator	Granted	10/1/2003	10/0676453	8/15/2006	7092477
Westinghouse Electric Company LLC	Method for calibrating steam generator water level measurement	Granted	8/25/2003	10/647757	10/10/2006	7120218
Westinghouse Electric Company LLC	Use of boron or enriched or enriched boron 10 in UO2	Granted	10/14/2004	10/965372	11/21/2006	7139360
Westinghouse Electric Company LLC	Head assembly	Granted	9/24/2003	10/670540	6/2/2007	7158605
Westinghouse Electric Company LLC	Gas phase electrolyzer process for producing hydrogen	Granted	6/3/2005	11/145320	8/28/2007	7261874

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Westinghouse Electric Company LLC	Film riding shaft seal	Granted	3/8/2005	11/074409	10/30/2007	7287756
Westinghouse Electric Company LLC	Miniature manipulator for servicing the interior of nuclear steam generator tubes	Granted	7/15/2003	10/620013	1/1/2008	7314343
Westinghouse Electric Company LLC	Printed circuit card	Granted	10/3/2005	11/242171	6/10/2008	7386086
Westinghouse Electric Company LLC	Steam generator loose parts collector weir	Granted	11/28/2006	11/563742	10/14/2008	7434546
Westinghouse Electric Company LLC	Removal of niobium second phase particle deposits from pickled zirconium-niobium alloys	Granted	3/7/2007	11/682981	12/23/2008	7468106
Westinghouse Electric Company LLC	Spacer grid with mixing vanes and nuclear fuel assembly employing the same	Granted	3/9/2006	11/372431	6/16/2009	7548602
Westinghouse Electric Company LLC	Removal of niobium second phase particle deposits from pickled zirconium-niobium alloys	Granted	2/12/2008	12/029527	7/7/2009	7556696
Westinghouse Electric Company LLC	Over temperature and over power delta temperature operating margin recovery method and reactor system employing the same	Granted	3/2/2006	11/367001	9/29/2009	7596198
Westinghouse Electric Company LLC	Reactor dosimetry applications using a parallel 3-D radiation transport code	Granted	9/25/2008	12/237429	10/20/2009	7606686
Westinghouse Electric Company LLC	Nuclear reactor internals alignment configuration	Granted	8/24/2007	11/844614	11/10/2009	7616728

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Westinghouse Electric Company LLC	Bi-alloy spacer grid and associated methods	Granted	3/27/2003	11/389793	11/24/2009	7623612
Westinghouse Electric Company LLC	Steam generator nondestructive examination method	Granted	11/22/2006	11/562782	1/19/2010	7647829
Westinghouse Electric Company LLC	Method and tooling for dismantling casking and removal of nuclear reactor core structures	Granted	1/17/2007	11/623864	2/23/2010	7668281
Westinghouse Electric Company LLC	Pipe clamp	Granted	9/17/2007	11/856119	9/21/2010	7798535
Westinghouse Electric Company LLC	Permanent seal ring for a nuclear reactor cavity	Granted	12/7/2007	11/952358	10/12/2010	7813464
Westinghouse Electric Company LLC	Method of applying a burnable poison onto the exterior of nuclear rod cladding	Granted	3/29/2007	11/692952	10/19/2010	7815964
Westinghouse Electric Company LLC	Nuclear fuel assembly debris filter bottom nozzle	Granted	1/5/2004	10/751349	10/26/2010	7822165
Westinghouse Electric Company LLC	Solid state radiation detector with enhanced gamma radiation sensitivity	Granted	2/18/2013	13/769401	11/28/2017	9831375
Westinghouse Electric Company LLC	Nuclear fuel element	Granted	4/29/2014	14/264283	12/19/2017	9847143
Westinghouse Electric Company LLC	Low pressure drop nuclear assembly bottom nozzle	Granted	4/3/2014	14/243954	12/19/2017	9847144
Westinghouse Electric Company LLC	Self-contained emergency spent nuclear fuel pool cooling system	Granted	11/8/2011	13/291334	12/19/2017	9847148

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Westinghouse Electric Company LLC	Nuclear fuel assembly handling apparatus	Published	3/5/2013	13/785448	{7/24/2014}	{20140205050}
Westinghouse Electric Company LLC	Total integrated tube analysis	Granted	7/15/2015	14/800076	4/17/2018	9945814
Westinghouse Electric Company LLC	Pool pressure mitigation using sparger phase interaction	Granted	8/25/1998	09/139106	7/11/2000	6088418
Westinghouse Electric Company LLC	Feedwater control over full power range for pressurized water reactor steam generators	Granted	10/22/1998	09/176799	2/1/2000	6021169
Westinghouse Electric Company LLC	Tunable anticipatory output response valve control	Granted	10/27/1998	09/178890	4/17/2001	6216728
Westinghouse Electric Company LLC	Full range feedwater control system for pressurized water reactor steam generators	Granted	12/14/1998	09/210714	5/2/2000	6055945
Westinghouse Electric Company LLC	Canopy seal clamp assembly and method of installation	Granted	1/7/1999	09/226125	9/26/2000	6125159
Westinghouse Electric Company LLC	Apparatus and method for performing non-destructive inspections of large area aircraft structures	Granted	1/15/1999	09/231668	4/24/2001	6220099
Westinghouse Electric Company LLC	Cutting zone for radioactive materials	Granted	3/8/1999	09/264241	7/17/2001	6263037
Westinghouse Electric Company LLC	Filtration system for concentrating radioactive debris	Granted	3/10/1999	09/265823	3/6/2001	6197188
Westinghouse Electric Company LLC	Magnetic filtration system for minimizing radioactive waste during abrasive waterjet cutting	Granted	3/10/1999	09/265824	12/5/2000	6156194

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Westinghouse Electric Company LLC	Self-actuated louvers for venting a cedm cooling system of a nuclear reactor and method of using the same	Granted	4/6/1999	09/286660	3/29/2001	6240154
Westinghouse Electric Company LLC	Flexi-rail assembly	Granted	4/7/1999	09/287366	2/6/2001	6182932
Westinghouse Electric Company LLC	Mox fuel arrangement for nuclear core	Granted	6/30/1999	09/343548	5/15/2001	6233302
Westinghouse Electric Company LLC	Coolant mixing grid for nuclear fuel assembly	Granted	10/06/1999	09/402703	8/7/2001	6272197
Westinghouse Electric Company LLC	Method and system for monitoring control rod element assembly position	Granted	5/1/2000	09/563032	5/22/2001	6236699
Westinghouse Electric Company LLC	Vessel for uranium hexafluoride transport	Granted	4/23/2001	09/840314	3/18/2003	6534776
Westinghouse Electric Company LLC	System and method for determining fluctuating pressure loading on a component in a reactor steam done	Granted	5/24/2005	11/135806	10/28/2006	7444246
Westinghouse Electric Company LLC	Advanced logic system	Granted	5/6/2008	12/026703	1/11/2011	7870299
Westinghouse Electric Company LLC	Method of manufacturing a Sic composite fuel cladding with inner Zr alloy liner	Published	06/21/2016	15/187985	{12/21/2017}	{2017-0365364}
Westinghouse Electric Company LLC	Nuclear fuel rod	Published	6/21/2017	15/628695	{12/28/2017}	{2017-0372802}

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Westinghouse Electric Company LLC	Irradiation target handling device	Published	7/14/2016	15/210231	{1/18/2018}	{2018-0019031}
Westinghouse Electric Company LLC	Cold spray chromium coating for nuclear fuel rods	Published	10/3/2016	15/284076	{1/25/2018}	{2018-0025793}
Westinghouse Electric Company LLC	Spray methods for coating nuclear fuel rods to add corrosion resistant barrier	Published	10/3/2016	15/284182	{1/25/2018}	{2018-0025794}
Westinghouse Electric Company LLC	Tank closure cesium removal	Published	9/20/2016	15/270312	{2/1/2018}	{2018-0033508}
Westinghouse Electric Company LLC	Process for manufacturing sic composite ceramics	Published	8/24/2016	15/245933	{3/1/2018}	{2018-0057413}
Westinghouse Electric Company LLC	Duplex accident tolerant coating for nuclear fuel rods	Published	10/2/2017	15/722167	{4/5/2018}	{2018-0096743}
Westinghouse Electric Company LLC	System and process for production and collection of radioisotopes	Published	11/2/2016	15/341478	{5/3/2018}	{2018-0122521}
Westinghouse Electric Company LLC	Stem generator sludge lance apparatus	Published	1/4/2018	15/861744	{5/24/2018}	{2018-0142885}
Westinghouse Electric Company LLC	Monitoring control rod element assembly position	Granted	3/28/2001	09/819967	7/16/2002	6421405
Westinghouse Electric Company LLC	Reactor pressure Vessel	Granted	11/5/2004	10/982068	10/10/2006	7120219
Westinghouse Electric Company LLC	Method of operating a nuclear power plant at multiple levels	Granted	10/2/2003	10/677184	11/21/2006	7139355

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Westinghouse Electric Company LLC	Unirradiated nuclear fuel component transport system	Granted	2/26/2007	11/678640	1/6/2009	7474726
Westinghouse Electric Company LLC	Removal of niobium second phase particle deposits from pickled zirconium-niobium alloys	Granted	10/3/2008	12/245085	2/15/2011	7887638
Westinghouse Electric Company LLC	Ambient temperature decontamination of nuclear power plant component surfaces containing radionuclides in a metal oxide	Published	6/29/2017	15/637,621	{11/30/2017}	{2017-0345519}
Westinghouse Electric Company LLC	Corrosion and wear resistant coating or zirconium alloy cladding	Published	11/2/2017	15/801398	{3/01/2018}	{2018-0056628}
Westinghouse Electric Company LLC	Heat pipe molten salt fast reactor with stagnant liquid core	Published	9/12/2017	15/701477	{3/15/2018}	{2018-0075931}
Westinghouse Electric Company LLC	Method of predicting wear on tubes of steam generator	Published	11/9/2017	15/807801	{5/24/2018}	{2018-0142884}
Westinghouse Electric Company LLC	Pressure boundary bolted anti-ejection device	Published	11/16/2017	15/814622	{5/31/2018}	{2018-0151263}