

List of responses to the RFI for contaminated water issues

[Note 1] Most relevant areas of technologies requested

1. Accumulation of contaminated water
2. Treatment of Contaminated water
3. Removal of radioactive materials from seawater in the harbor
4. Management of contaminated water inside the buildings
5. Management measures to block groundwater from flowing into the site
6. Understanding the groundwater flow
7. Other than seven areas above

[Note 2] Experience of using the technology (Technology readiness levels explained)

1. Those that are explained as having accomplished practical applications in an environment similar to Fukushima Daiichi NPS.
2. Those that are explained as having accomplished practical applications in other fields.
3. Those that are explained as having established the principles, and accomplished certain validation at a research level.
4. Those that are explained as conceptual proposals, etc.

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No.	Subject (Provisional English translation is attached below the original Japanese responses)	Submitted by	Area	Note1	Note2
1	ウォーターセパレーター-CALFA SEP (カルファセップ)(水中不純物分離器)による不純物除去 Removal of impurities by water separator CALFA SEP	CALFA CHEMICAL CO., LTD.	②	3	4
2	地中導水路(トンネル)方式遮水壁 Underground headrace channel (tunnel) type impermeable wall	渡邊 亮	⑤	5	4
3	No form 2	No form 2	NA	2	4
4	Upsalite, A recently synthesized extremely hygroscopic mineral	Dr. Juergen Buchmann	①	3	4
5	汚染水を出さない原発冷却装置 Nuclear reactor cooling equipment that does not cause contaminated water	有富和宏	①②④ ⑤	7	2
6	アースエナジー浄水機自走(災害対応型浄水機) Earth energy self-propelled purification machine (disaster response type purification machine)	アースエナジー株式会社	NA	3	4
7	Fibrous radionuclide's sorbents FIBAN K-1 and FIBAN K-1-1	Institute of Physical Organic Chemistry of NAS of	②	3	3
8	No form 2	No form 2	NA	3	3
9	元素変換技術 Element conversion technology	株式会社キャスコム 岸井 博司・湯村 眞一郎	②	2	4
10	港湾内の海水の浄化(海中中の放射性物質の除去等) Purification of seawater in the harbor (Removal of radioactive materials in seawater)	有限会社 河合化研工業 河合 誠	③	3	4
11	4 Management of contaminated water inside the buildings 5 Management measures to block groundwater from flowing into the site 6 Understanding the groundwater flow	Beck Roland	④⑤⑥	7	2
12	汚染水問題への対応に関する Regarding to contaminated water issue	株式会社沖縄資源開発	NA	3	4
13	汚染水貯留及び処理について Regarding to storage and treatment of contaminated water	足立忠男	①	1	2
14	液中からの放射性元素の分離・除去方法 Method of isolation/decontamination of radioactive element in the liquid	株式会社イガデン 五十嵐 武士	②③	3	3
15	汚染水の可視化 Visualization of contaminated water	西村 健	⑥	1	2
16	Biosafe Nanocomposite Polymer Sorbent (BNPS) for highly radioactive water capture in solid state and Sr and Cs isotopes sorption	MedProFarm Ltd.	①③④ ⑤	3	3
17	Activaによる汚染水処理・港湾内海水の浄化 Contaminated water treatment and purification of sea water in the harbor by Activa	楊 錫根 (Suk-Keun Yang) 尹熙鳳 (Hee-bong Yoon)	②③	3	4
18	溶融した低融点重金属による止水技術 Technology to stop water by molten heavy metal with low melting point	高橋 実	④	4	3
19	冷却方法からの改良 Improvements of cooling methods	Libardo Enrique Lozano Akiyama	④	4	4
20	カキ養殖いかだによる牡蠣殻への放射性ストロンチウムの固定、パーミキュライトを用いたセシウムの除去に関する提案および情報協力 Proposals and information cooperation regarding fixation of radioactive strontium to oyster shell by using oyster farming raft, and cesium removal using vermiculite.	島田 敏	③	3	4
21	汚染スラリーの減容・塊成化 Volume reduction and conglomeration of contaminated slurry	武居技術事務所/代表 武居 博道(タケスエ ヒロミチ)	②	3	4
22	放射性物質の安定化 Stabilization of radioactive materials	佐々 英之	③	3	4
23	汚染水処理(トリチウム処理等) Contaminated water treatment (tritium treatment, etc.)	有限会社 河合化研工業 河合 誠	②	3	4
24	水冷却の中止 Discontinuation of water cooling	天野 芳文	②④	7	4
25	汚染水と雨水と分離技術と止水技術 Contaminated water, rain water, isolating technology and technology for stopping water	瀧本 柔幸	⑤	1	2
26	放射線、トリチウム等有害物質を含んだ水、土壌の改善 Improvement of water and soil including harmful substances such as radiation and tritium	一般財団法人 テネモス国際環境研究会	②③④ ⑤	3	4
27	Treatment of contaminated water	Jan Persson	②	3	4
28	タンク連結方法の提案 Proposal of tank joint method	三宅 勇次	①	1	2
29	地下水流入抑制の敷地管理 Site management to avoid groundwater inflow	瀧本 柔幸	⑤	5	2
30	燃料電池と水電解を使った省電力型トリチウム分離回収技術 Power-saving type technology using fuel cell and water electrolysis to isolate and collect tritium	松島 永佳	②	2	2
31	乾田工法による原発敷地への地下水流入抑制 Prevention of groundwater inflow into nuclear site using dry-paddy-field method	井川英雄	⑤	5	4
32	福島第一原子力発電所の核燃料が臨界に到達して、高温状態にて暴走をしているのを、液化LNGの気化熱の冷熱をフロンに置換して原子炉を冷温停止させる方法 Method to cool runaway nuclear reactors, which is in the state of high temperature as a result of nuclear fuel criticality, by using safe cooling media such as ammonia to cool with the vaporization heat of LNG by transferring its cool to safe coolant such as ammonia	長浦 善昭	①②④ ⑤	7	4
33	Managed Wide Scale Groundwater Bypass System	The SimplyInfo.org Research Team	⑤	5	4
34	環境省 除染関係ガイドライン規格を満たした自重脱水フレコンを使用した高含水汚染廃棄物の一貫処理について Coherent treatment of contaminated wastes using self-weight dewatering flexible container that meets standards of decontamination-related guidelines of the Ministry of the Environment	株式会社 ファーストソリューション	②	2	4
35	Immobilization of Group II, and Group III radio-nucleotide pollutants and tritiated water using Cylenchar Technology.	Dr Peter J. Hurley, BSc(hons), PhD, MBA, CSci, CChem, MRSC, CEnv, CWEM, MCIWEM, Cylenchar Limited	②	2	2
36	チタン遮水工法を用いた、貯水および放射性廃棄物貯蔵用ボックスカルバート Box culvert for storing water and radioactive waste that uses titanium impermeable method	協伸工業株式会社	①	1	2
37	Treatment, management, solidification, sealing of pipes and surrounding structures, understanding groundwater flow	Geochemie Sanierungssysteme GmbH, Germany	①②③ ④⑤	3	4
38	Dounreay Shaft Isolation Project	David Gibson - BAM Ritchies	⑤	5	2
39	船舶による汚染水貯留・汚染水処理システム Contaminated water storage/treatment system using ships	金子仁	①	1	2
40	好気性微生物処理で最終処理を行うことによる除染 Decontamination by final treatment with aerobic microorganism	(株)小川環境研究所 小川尊夫	②③	3	4
41	鉛を用いた溶融燃料の冷却および汚染水発生防止 Cooling of molten fuel and prevention of contaminated water using lead	山田廣成	④	7	4
42	Water Additive	CM	④	1	4
43	汚染水貯留タンクの製作数軽減設備 汚染水貯留タンクの劣化防止と放射性物質を分離する設備 Equipment which reduces the necessary number of tanks for contaminated water Equipment which prevents degradation of tanks and separates radioactive materials	株式会社 昭和冷凍プラント 代表取締役 若山 敏次	①	1	2
44	処理水の分離技術以外の方法 Methods other than removal technology for processed water	高津戸 厚	②	2	4
45	汚染水処理フィルターシステムの提案 Rad-Cap System Proposal on filter system for contaminated water treatment, Rad-Cap System	東田商工株式会社 東 昌伸	②	3	3
46	トリチウム光触媒・水素同位体吸蔵触媒・電解分離回収 Tritium collection by photocatalyst, hydrogen isotope absorption catalyst, and electrolytic separation	水素エネルギーシステム株式会社 代表取締役 李 勤三	②	2	3
47	Replace Water in Fuel Pools and Reactors with Sodium Thiosulfate	Dipl. Phys. Dott. Ing. Markus Reichert	④	2	4
48	連続多量処理凍結濃縮装置 Freeze concentration equipment that can handle large amounts in a continuous manner	手塚正博	②	2	3
49	プルシアンブルーナノ分散液を使ったセシウムの吸着除染 Absorption and decontamination of cesium using Prussian blue nano dispersion liquid	三菱化学エンジニアリング株式会社 宗澤 潤一	③	3	3
50	No form 2	No form 2	NA	1	4

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51	遮水壁 Impermeable wall	青木康彦	⑤	5	4
52	No form 2	No form 2	NA	7	4
53	遮水・保水浄化促進型の鋼製遮水壁の技術提案 Technology proposal on steel-type impermeable wall that promotes water shielding and purification of	稲積真哉	④	5	4
54	回転成形による汚染水貯蔵タンク Rotational-molding-type tank for storing contaminated water	植村 教介	①	1	4
55	海中の放射性物質の除去 DPハイブリッド法 Removal of radioactive materials in the sea water, DP hybrid method	日本蚕毛染色株式会社 富部純子、平本健、鳥木晃	①②③ ④	3	3
56	放射能汚染水を経時変化しない、氷の固まりの固形物として、長期間保管する方法 Method to store radiation contaminated water as ice for long period	長浦 善昭	①②	2	4
57	Nuclear Industry Effluent Reprocessing System	Desiccant Dry Air Systems Ltd	②③	2	2
58	機能性継ぎ手付き貯槽 Storage with functional joint	株式会社ベルテクノ 技術開発部 上平 健次	①	1	2
59	イズマリンによる汚染水中の放射性物質の減殺 Elimination of radioactive materials in the contaminated water using Izmarin	秀物理学研究所	②③	2	4
60	汚染水の処理方法 Method of contaminated water treatment	三宅技術士事務所 三宅勇次	⑥	5	4
61	No form 2	No form 2	NA	7	2
62	セメント注入工法による汚染水防止策 Water contamination prevention by cement injection method	江口 工	⑤	5	2
63	建屋下部不透水層のグラウト Grout in the impermeable layer under the buildings	江口 工	⑤	4	2
64	汚染水を長期間にわたり安定的に貯蔵する方法 Method to stably store contaminated water over a long period of time	加藤 行平	①	1	4
65	トリチウム汚染水処理 Treatment of tritium-contaminated water	株式会社コアプロ技研 代表 橋本善三	②	2	3
66	地下熱利用による汚染水の濃縮・貯槽法 Concentration and storage of contaminated water using underground heat	マイクロシステムズ合同会社	②	2	3
67	Water of Change	Lakshman Stephan Oesterreicher	②③	7	4
68	Homa Powder to eliminate radioactivity	Lakshman Stephan Oesterreicher	②③	7	4
69	染料による汚染水着色 Coloring of contaminated water using colorant	株式会社 戸谷染料商店	①	1	2
70	T+H ₂ SO ₄	Huang wusheng	②	2	4
71	福島平和ピラミッドによる汚染がれき・汚染水の空間貯蔵 Storage of contaminated debris and water in Fukushima Peace Pyramid	福島の前急の復興を祈る会	①	1	4
72	複雑形状に対応できる配管用フレキシブル継手のご提案 Proposal of flexible joint for pipes that can deal with complex configuration	有限会社松村精機 松村 進	④	1	2
73	放射能物質分解商品 Product that dissolves radioactive materials	大塚茂則	②	1	4
74	バイオリン酸塩鉱物生成による海水中Sr除去技術 Technology to remove Sr in the seawater by producing biophosphoric acid minerals	大貫敏彦 (JAEA)	③	3	3
75	微生物による地下水中カルサイト生成による土壌中Sr除去・捕集技術 Technology to remove and capture Sr in the soil by generating calcite in the groundwater using microorganism	大貫敏彦 (JAEA) 吉田善行 (ATOX)	⑤	5	3
76	リン酸塩鉱物バイオフィルムを用いた海水中放射性核種の除去技術 Decontamination of radionuclide in the sea water using phosphate mineral biofilm	大貫敏彦	③	3	3
77	改良鉱物を用いた海水中放射性核種の除去技術 Decontamination of radionuclide in the sea water using improved minerals	大貫敏彦 (JAEA)	③	3	3
78	微生物による地下水中カルサイト生成による狭隘域の止水技術 Water shielding technology for narrow places by generating calcite in the groundwater using microorganism	大貫敏彦	④	4	3
79	微生物・鉱物による土壌中Sr捕集技術 Technology to capture Sr in the soil using microorganism and minerals	大貫敏彦 (JAEA), 吉田善行 (ATOX)	⑤	5	3
80	作業者の過剰被ばく防止用視覚線量計 Visual dosimeter to prevent workers from being exposed to excessive radiation	株式会社アルファ技研 代表取締役 古澤 達雄	①	7	1
81	作業者の被ばく低減用遮蔽ベスト Shielding vest for exposure reduction for workers	株式会社アルファ技研 技師長 和田 盾夫	①	7	1
82	作業者の被ばく低減用重機遮蔽 Shielding for heavy machinery for exposure reduction for workers	株式会社アルファ技研 製品統括グループ 次長 古澤 耕一	①	7	1
83	β線測定器用遮蔽材 Shielding material for beta ray measurement device	株式会社アルファ技研 技師長 和田 盾夫	①	1	1
84	Liquid Organic Radioactive Wastes Mineralization Technologies	DEWDROPS	②	7	2
85	放射能汚染水の純化に関する技術 (Including tritium) Technology on purifying radiation contaminated water (Including tritium)	松澤 利充 (技術・装置の開発者の代理人)	NA	2	2
86	貯蔵タンクの汚染水漏れ防止に対する信頼性・耐久性の向上 Increasing reliability and durability for preventing contaminated water leaking from storage tanks	Kubota Research Associates, Inc. 久保田雅則	①	1	2
87	建屋内周辺の止水技術 (建屋間ギャップ止水と周辺グラウディング) Water stoppage technologies around the buildings (Stopping water from the gap between the buildings and	Kubota Research Associates, Inc. 久保田雅則	④	4	2
88	建屋内からの止水 Water stoppage from the buildings	Kubota Research Associates, Inc. 久保田雅則	④	4	2
89	吸水防潤性クレイによるフェーシング技術 Facing technology using impermeable clay for water absorption	Kubota Research Associates, Inc. 久保田雅則	⑤	5	2
90	水抜き構造を持つ地下水流入抑制用遮水壁 Impermeable wall of drainage structure avoiding groundwater inflow	久保田雅則	⑤	5	2
91	連続繊維強化複合材による狭隘急斜面における遮水壁構築技術 Technology for building impermeable wall at narrow and steep slopes using continuous fiber reinforcement	Kubota Research Associates, Inc. 久保田雅則	⑤	5	2
92	NOH ₂ O ポリマーグラウトによる建屋内止水技術 Technology to prevent water inflow in to the buildings by NOH ₂ O polymer grout	株式会社IHI, EnergySolutions	④	4	2
93	NOH ₂ Oポリマーグラウトによる山側遮水壁技術 Technology for impermeable wall on the mountain side using NOH ₂ O polymer grout	株式会社IHI, EnergySolutions	⑤	5	2
94	仮設タンク漏水防止方法 Method to prevent water leakage from temporary tanks	NA	①	1	1
95	フランス産超速硬・初期高剛度・無収縮・微細粒子・海水凝結及び耐化学性の特性を持ったナチュラルセメントによる漏水防止 Prevention of water leakage by natural cement made in France that has the characteristics of ultrarapid hardening, high initial rigidity, zero shrinkage, microscopic particle, seawater condensation, and chemical resistance	鈴木 斌 (スズキ アキラ)	④	4	2
96	地下水流入制御兼汚染水貯留ピットの設置 Establishment of a pit for accumulating contaminated water that also controls groundwater inflow	NA	①⑤	5	2
97	放射性物質<St, Cs>除去システム The system to remove Radioactive material <St, Cs>	岩村 淳一・吉田 亮	②	3	4
98	水同位体の濃縮システム Condensation system for water isotope	岩村 淳一・吉田 亮	②	2	4
99	CCIMによる港湾内の海水の浄化に伴い発生する二次廃棄物の処理技術 Technology of the treatment of secondary wastes caused by seawater purification in the harbor by CCIM	株式会社IHI, KHNP/CRI	③	3	2
100	タンク内面溶接部における腐食予防保全工法 Preventive maintenance method for corrosion on welded parts inside tanks	株式会社 原子力エンジニアリング	①	1	1
101	カーボンナノチューブ純水分散液を用いた汚染水処理法 Method of contaminated water treatment using CNT pure water dispersion fluid	株式会社 大成化研	②	2	4

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102	フォールトトレラントを有した遮蔽汚染水タンク Shielding tank with fault tolerant for contaminated water	成島 誠一	①	1	4
103	フォールトトレラントを考慮したNB 工法遮水構造汚染水貯蔵施設 Storage facility for contaminated water that has the shielding structure based on NB method that takes fault tolerant into consideration	成島 誠一	①	1	2
104	高比重逸水防止塑性体(高粘性体)適用による遮水技術 Water stoppage technology using high-density leak prevention plastic (highly viscous body)	成島 誠一	④	4	2
105	地下水遮水壁構築に用いる高比重変形追随型遮水材 High-density sealing material following deformation used for building impermeable wall for underground water	長江泰史	⑤	5	2
106	福島第一原発近傍において、良好な作業環境を整えて貯留ユニットの製作を行ない、完全防水を実現するプラスチック製軽量貯蔵施設 Complete-waterproof, light, plastic storage facility with its storage units manufactured in a good working environment near Fukushima Daiichi	高井 征一郎(株式会社トーテツ 代表取締役社長) 大石 不二夫(元鉄道総研主幹研究員、現職神奈川大学名誉教授・特別所員)	①	1	2
107	地下水涵養の抑制と注水による地下水制御 Groundwater control by inflow reduction and injection	独立行政法人産業技術総合研究所 深部地質環境研究コア	⑤	5	2
108	地下水挙動を把握するための補完的なデータ取得と解析 Complemented data acquisition and analysis to understand groundwater flow	独立行政法人産業技術総合研究所 深部地質環境研究コア	⑥	6	1
109	No form 2	No form 2	NA	5	4
110	鋼管無双工法による完全な遮水壁の構築 Building of complete impermeable wall by steel pile hit and miss method	株式会社 イケハタ 池端 高道	⑤	5	2
111	汚染水貯蔵タンク水位の遠隔監視装置 Remote monitoring equipment for the water level in storage tanks for contaminated water	有限会社インターフェース 秋山 公彦	①	1	2
112	Nuclear Contaminated Waste Water Disposal, Site Tsunami Protection & Groundwater Management	D.E.B.Aitken MSc Ceng MIMechE MICE MRINA	①④⑤	5	4
113	Double Wall Balance (Idea)	Franz Trieb, Germany	⑤	5	4
114	Alternative Final Water Treatment System	The SimplyInfo.org Research Team	②	2	2
115	Underground Zeolite Wall System	The SimplyInfo.org Research Team	①	1	4
116	放射能汚染水中の放射性セシウム、トリチウムの低減及び濃縮処理 Reduction and condensation treatment of radioactive cesium and tritium in radiation-contaminated water	東海メンテナンス株式会社 渡辺賢治	②	3	4
117	ストロンチウム90の迅速分析手法 Fast analysis method for strontium 99	福島大学 高貝慶隆ほか	⑥	6	2
118	高効率コンパクト核種吸着分離システム Nuclide absorption and removal system that is highly efficient and compact	榎 淳一郎 (JHGS(株)に在籍ラボ、名古屋大学名誉教授)	③	3	4
119	繊維状放射性セシウム吸着材を用いた設置型除染システム Install-type decontamination system using fabric radioactive cesium absorbent	株式会社カサイ	③	3	3
120	木毛セメント板による海中の放射性物質吸着および減容技術 Technology to absorb and reduce radioactive materials in the seawater using wood wool cement board	古賀一八	③	3	3
121	増粘多糖類による汚染水の固化・融解技術 Technology for contaminated water solidification and melting by polysaccharide thickener	古賀一八	①⑤	1	2
122	汚染水の固体化及び遮蔽効果の向上技術 Technology to improve effects of contaminated solidification and shielding	NPO法人グリーンアライアンス	①②④⑤	1	4
123	オーロラ工法による止水対策 Water stoppage measure by aurora method	横田 辰男	④	4	4
124	信頼性のある内面塗装等 Reliable internal coating, etc.	横田 辰男	①	1	4
125	非常に簡便な汚染水処理及び港湾内の海水の浄化 Treatment of contaminated water and purification of seawater in the harbor that are constantly simple	横田 辰男	②③	3	4
126	ハニカム成型体による海水からのCs,Srの選択的分離・濃縮および安定固化 Selective removal, condensation and stable solidification of Cs, Sr from seawater using honeycomb mold	三村 均	②③	3	3
127	小型タンク群を囲う堰内への降雨流入防止を目的とした簡易屋根の建設 Construction of simple ceiling to prevent inflow of rainwater into weir around small tanks	斎藤公男、金田勝徳、和田 章、神田 順、田村和夫、川口健一、竹内 徹	①	1	2
128	Proton Torch and Complete dismantling procedure	Mr Poitvein S. (from France)	②	7	4
129	Process for Fukushima cooling water Solidification in Gypsum	Dr. Jozef Hanulik / Deco-Hanulik AG, Switzerland	①②	2	2
130	Suggestions to control situation	David R. Weiland	①④⑤	1	2
131	前処理吸着材(珪藻土又はパーミキュライト)及び天然無機系凝集剤JOSENを用いた港湾内の海水浄化 Purification of seawater in the harbor using pretreatment absorbent (diatom earth or vermiculite) and the natural inorganic coagulant, JOSEN	株式会社 日本港湾コンサルタント 眞田 武	③	3	3
132	超高压液体窒素除染技術(NitroJet [®])によるボルト締め型タンクの除染 Decontamination of bolted tanks using the technology of super-high-pressure liquid nitrogen (NitroJet [®])	株式会社IHI/NitroCision, LLC.	①	1	1
133	超高压液体窒素除染技術(NitroJet [®])による建屋止水前除染 Decontamination before the water stoppage of buildings using the technology of super-high-pressure liquid nitrogen (NitroJet [®])	株式会社IHI/NitroCision, LLC.	④	4	2
134	福島第一原発の高レベル放射能汚染水の流出防止対策 Prevention measures for outflow of high level contaminated water at Fukushima Dai-ichi	古川 博恭・黒田 登美雄	④⑤	5	2
135	セラミック電極を使用した無隔膜電気分解と隔膜電界による、汚染水からの放射性物質の分離・濃縮技術 Technology to remove/condense radioactive materials from contaminated water by diaphragm-free electrolyzation and diaphragm electric field using ceramic electrode	(株)ジー・イー・エス 下川樹也	②③	2	3
136	No form 2	No form 2	NA	1	2
137	電解方によるトリチウム処理等 Treatment of tritium by electrolytic method, etc.	(株)日本プラント建設	②	2	3
138	Hydrotalcite-based radionuclide removal technology for fresh and saline waters	Dr Grant Douglas, Senior Principal Research Scientist, CSIRO, Australia	①②③④	3	4
139	1) 海水・塩水中のCsおよびSrを選択的に吸着可能で低ランニングコスト運用可能な無機系吸着剤 2) 62核種を除去できる吸着剤のシステム 3) 現行ALPSと比較して2次放射性廃棄物量の大幅低減可能な、塩水中硬度を除去する前処理と吸着剤による処理システム 1) Inorganic absorbent that can run with low running cost which selectively absorbs Cs and Sr in seawater and salt water 2) Absorbent system that can remove 62 nuclides	ピュロライト株式会社	③	3	4
140	港湾内の海水に含まれる放射性Cs、Sr 除去(濃度低下) Removal (lowering concentration) of radioactive Cs and Sr in the seawater in harbor	穂積 豊治	③	3	3
141	排水シート(CAPIHON)パイプ状も含む Water discharge sheet (CAPIHON), including piping shape	株式会社都商事	④⑤	5	2
142	NUSIM社の放射性廃棄物処理技術 Technology of radioactive waste disposal by NUSIM	株式会社協同インターナショナル	①	1	1
143	地下水流入遮断壁構築 Building of impermeable wall for groundwater inflow	荒明定義	⑤	5	2
144	港湾内の海水の浄化(海水中の放射性物質の除去等)凝集沈殿技術を用いた汚染水除染システム Purification of seawater in the harbor (Removal of radioactive materials in the seawater, etc.) contamination removal system of water using coagulating sedimentation technology	一般財団法人APCR工法協会	③	3	3
145	CCC工法(遮水壁の施工技術) CCC construction method (Construction technology of impermeable wall)	株式会社 ランド・クリエイティブ	⑤	5	2
146	汚染水貯留の鋼製クックの代替案(コンクリート二次製品) Alternative of steel tank for contaminated water accumulation (secondary product of concrete)	株式会社 OZON NEO(オゾンネオ)代表取締役 中畑 高志	①	1	2
147	可搬式汚染水タンクモジュール・システム Portable contaminated water tank module system	上原正勝	①	1	4
148	トリチウム希釈用貯水池を備えた可搬式汚染水タンクモジュールシステム Portable contaminated water tank module system with reservoir for tritium dilution	上原正勝	②③	2	2

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6. Understanding the groundwater flow
7. Other than seven areas above

[Note 2] Experience of using the technology (Technology readiness levels explained)

1. Those that are explained as having accomplished practical applications in an environment similar to Fukushima Daiichi NPS.
2. Those that are explained as having accomplished practical applications in other fields.
3. Those that are explained as having established the principles, and accomplished certain validation at a research level.
4. Those that are explained as conceptual proposals, etc.

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No.	Subject (Provisional English translation is attached below the original Japanese responses)	Submitted by	Area	Note1	Note2
149	勇気をもって、原発問題の解決に道筋をつける Outlining a path for nuclear issue solution with courage	徳和株式会社NSケミカル事業部	②	2	4
150	汚染水処理及び地下水処理対策及び津波防御壁工事 Contaminated water treatment, groundwater treatment, and construction of defensive barrier against tsunami	杉原勇治	⑤	5	2
151	No form 2	No form 2	NA	4	2
152	Protective Elastomers Coatings (area1)	Nippon Coating International Ltd.	①	1	1
153	Protective Elastomers Coatings	Nippon Coating International Ltd.	②	2	2
154	Protective Elastomers Coatings	Nippon Coating International Ltd.	④	4	2
155	Protective Elastomers Coatings	Nippon Coating International Ltd.	⑤	5	2
156	地盤改良・建屋外止水材 シリカボール Ground improvement, outdoor water stops, silica ball	電気化学工業株式会社	④⑤	4	2
157	地盤改良・建屋外止水材 デンカES Ground improvement, outdoor water stops, Denka ES	電気化学工業株式会社	④⑤	4	2
158	フェーシング材 吹付けコンクリート/モルタル用急結剤 ナトミック Facing material, shot concrete/quick setting agent for mortar, NATMIC	電気化学工業株式会社	⑤	5	2
159	水中不分離型グラウト材 デンカプレタスコンTYPE-AP Underwater non-separable grout, DENKA PRE-TASCON TYPE-AP	電気化学工業株式会社	④	4	2
160	汚染水の固化材 デンカコンファインW Solidification agent for contaminated water, Denka Confine W	電気化学工業株式会社	②	2	2
161	大量の汚染水を固化することで長期安定的に貯蔵する方法 Long-term stable storage method by solidifying large amounts of contaminated water	電気化学工業株式会社	①	1	2
162	特殊オゾン水による放射物質の剥離 MOLTORON [®] Detachment of radioactive materials by special ozone water MOLTORON [®]	株式会社 RDS インターナショナル 代表取締役 野中順治	①②	1	2
163	特殊オゾン水 MOLTORON [®] を使用した海水の浄化 Purification of seawater using special ozone water MOLTORON [®]	株式会社 RDS インターナショナル 代表取締役 野中順治	③	3	4
164	Small laser mounted on small and remote controlled robotics	Chris van Felius	①	1	4
165	Draining rain from mountains behind	Chris van Felius	⑤	5	2
166	光触媒+3室電解による港湾内放射能汚染水浄化 Radioactive contaminated water purification inside the port by using photocatalyst and three room electrolysis	水素エネルギーシステム株式会社 代表取締役 李 勤三	③	3	4
167	Facilitating Removal of bolted type of tanks.	CUT NUCLEAR Limited, Aberdeen Scotland UK	④	1	1
168	きぼうプロジェクト "Kibou" project	株式会社いぶきエステート 代表取締役 中村 望	②	2	4
169	Gamma Environmental Borehole Monitor	Lab Impex Systems Ltd	⑥	6	1
170	Strategy and method for alleviation of groundwater ingress into basement of damaged buildings	Dr Peter J. Hurley, BSc(hons), PhD, MBA, CSci, CChem, MRSC, CEnv, C.WEM, MCIWEM, of Cylenchar Limited and Leon Stanger BSc(hons), CEng, MICE, FGS, Dip. Geot. Eng., of Beech Group Limited	⑤	4	2
171	汚染水の貯留に関して Regarding accumulation of contaminated water	山下 巧	①	1	4
172	親水性ポリエチレンナノファイバーからなる放射性物質除去膜 Radioactive material removal membrane composed of hydrophilic PE Nano fiber	滋賀県立大学講師 山下義裕	③	3	3
173	福島第一原子力発電所放射性廃棄物の除去システム System for removing radioactive wastes of Fukushima Daiichi NPS	James H. Hara	NA	7	2
174	Global tank retrofit solution	NUVIA	①	1	1
175	Tool for the Real-time Assessment of Subsurface Environments accessed by Directional-drilling (TRASED)	Rohit Salve	⑥	6	3
176	汚染水の貯蔵(タンク) Storage of contaminated water (tank)	東洋ケミカル機工株式会社 岩淵 信夫	①	1	2
177	No form 2	No form 2	NA	6	2
178	No form 2	No form 2	NA	1	4
179	SUSTAINABLE AND LONG-TERM SEALING	TRIODEV AB (Ltd)	①④⑤ ⑥	4	2
180	Permeable Reactive Barrier (PRB)	The S.M. Stoller Corporation	⑤	5	2
181	Integrated Groundwater Monitoring and Modeling System	The S.M. Stoller Corporation	⑥	6	1
182	Understanding Groundwater Flow	R.L. Bassett, Ph.D. Tetra Tech Inc	⑥	6	2
183	BENTONITE ABSORBER BLOCKS	SMITH ENGINEERING (GB) LTD	②	2	2
184	透水壁による地下水流入抑制工法 Method of preventing groundwater inflow using permeable wall	㈱熊谷組	⑤	5	3
185	Management measure to block ground water from flowing into the Site	Menard together with Soletanche Bachy, companies belonging to SOLETANCHE-FREYSSINET group	⑤	5	2
186	泥水による遮水壁 Mud impermeable wall	西村宏之、佐野守宏	⑤	5	2
187	汚染水処理から発生するスラッジ等の水処理二次廃棄物の安定保管技術の検討 Investigation on technology for stable storage of secondary wastes such as sludge from contaminated water	(独)日本原子力研究開発機構	②	3	4
188	使用済み汚染水貯留タンクの除染 Decontamination of used storage tanks for contaminated water	(独)日本原子力研究開発機構	①	1	4
189	放射性Sr汚染土壌の安定化 Stabilization of radioactive Sr-contaminated soil	(独)日本原子力研究開発機構	⑤	5	2
190	光触媒によるトリチウム除去(本田/藤嶋効果による汚染水処理システム) Removal of tritium by photocatalyst(Contaminated water treatment system by Honda/Fujishima effect)	グローバルアシストジャパン(株) 日本科学プロジェクト(研究会)	②	2	4
191	汚染水を着色し漏洩視認を容易にする Make visual check of leakage easy by coloring contaminated water	株式会社 大成化成	①	1	4
192	鋼管埋設処理工法(汚染水・高濃度汚染物質) Construction method of steel pipe burial (contaminated water/high concentration contaminant)	山本基礎工業株式会社 鈴木邦彦	①	1	4
193	汚染水の液シン測定によるストロンチウム分析時間の短縮 Shortening of strontium analysis time by liquid scintillation measurement of contaminated water	原電事業(株) 技術管理部 和田 茂行	⑥	6	3
194	塩酸系化学交換法によるトリチウム濃縮 Tritium condensation by chlorine chemical exchange method	藤井靖彦	②	2	3
195	トレンチ掘削による地下水の収集:冷却水としての利用 Collection of groundwater by trenching: Use as coolant	新宮秀夫、石原慶一、醍醐市朗	⑤	5	2
196	汚染水管理、特に、降雨をタンクの升、柵に溜めず海に放流する方法 Controlling contaminated water, especially the method to release rain water without storing in the dam of tanks	小野塚 悦夫	④	1	4
197	汚染水貯留と浄化装置併用プラント案 Methods of contaminated water storage and purification equipment installation	虎ノ門経済研究会 津吉 秀一	①②	1	2
198	親和力型孔拡散法による特定核種の分離/濃縮技術 Removal/condensation technology of specific nuclides by affinity type core diffusion method	株式会社セパシグマ	②③	2	3
199	地上・地下流体と放射性物質の 時間・空間変動を解析する高性能数値シミュレータ GETFLOWS による予測的環境監視と可視化(総合モデリング) Predictive environment monitoring and visualization by high-performance numerical simulator GETFLOWS analyzing time/space variation of fluid above and underground and radioactive materials (comprehensive modeling)	株式会社地圏環境テクノロジー	⑤⑥	6	1
200	汚染水中トリチウム水(HTO)のトリチウム分子(T2)単離捕集 Isolation and collection of tritium molecule (T2) in the tritium water (HTO) in contaminated water	蓼沼 克嘉(化研)	②	2	2
201	陽イオン吸着材(Vonnel WT)によるストロンチウム等の吸着除染 Adsorptive decontamination of strontium, etc. by positive ion adsorbent (Vonnel WT)	三菱レイオン株式会社	②	3	3
202	ボルト締め型タンクの内面ゴムライニングによる漏洩防止 Prevention of leakage by rubber lining inside the bolted tanks	日本海護謄株式会社	①	1	2

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No.	Subject (Provisional English translation is attached below the original Japanese responses)	Submitted by	Area	Note1	Note2
203	逆浸透膜処理と蒸発濃縮・固形処理のハイブリッド新汚染水処理方式 New hybrid method of treating contaminated water by reverse osmosis membrane, evaporative condensation, and solidification	株式会社ダン企画 代表取締役社長 井上富夫	①②③ ④⑤⑥	3	4
204	トリチウム水の回収・検出システム Collection/detection system of tritium water	株式会社 エネルギー ソリューションズ 今仁和武	②	2	3
205	水中分離カーテン、遮水シートによる港湾内閉鎖水域化技術 Technology for closed water in the harbor using underwater separation curtain and liner sheet	太陽工業株式会社	③	3	4
206	汚染水貯留タンク漏水防止対策 Countermeasures against water leakage from storage tanks of contaminated water	太陽工業株式会社	①	1	4
207	汚染水貯蔵タンクの(雨水)膜材防護カバー Membrane protection cover for storage tanks of contaminated water (preventing rainwater)	太陽工業株式会社	①	1	4
208	細密空間情報基盤の構築 Building a base for detailed space information	国際航業株式会社 平山 利晶	⑤⑥	6	1
209	トリチウムとストロンチウムのシンチレーション比例計数管測定 Scintillation proportional counter measurement for tritium and strontium	今仁和武	⑥	6	3
210	ナノ純銀担持体による広範な放射性核種変換能力の活用 Extensive use of radionuclide conversion capability of nano-scale pure silver support	岩崎 信	①	7	4
211	ナノ純銀担持体の広範な放射性核種変換能力の活用 Extensive use of radionuclide conversion capability of nano-scale pure silver support	岩崎 信	②	2	4
212	マグネシウム系吸着剤による海中の放射性物質の固定化について Regarding solidification of radioactive materials in seawater using magnesium absorbents	株式会社ティ・アイ・シー	③	3	3
213	RCガーデックスによる防水・止水工法 Waterproof and water stoppage using RCガーデックス	日本躯体処理株式会社	④⑤	4	2
214	漏水を検知しやすい汚染水貯蔵タンクの基礎底盤 Base of contaminated water tanks that easily detects leakages	石井 卓	①	1	3
215	漏水の検知と修復・移設しやすい汚染水貯蔵タンク定置方法 Positioning method of storage tanks for contaminated water that makes leakage detection, repair and transfer easily	石井 卓	①	1	3
216	タンク in タンク(鋼製貯蔵タンク内にFRP製の内筒タンク据付) Tank in tank (Attach FRP inner cylinder tanks inside steel storage tanks)	株式会社カナエ	①	1	2
217	大口径、超長尺ホースを用いた汚染水の貯留方法 Method of storing contaminated water using large-diameter, long hose	芦森工業株式会社	①	1	3
218	No form 2	No form 2	NA	2	4
219	米国製の汚染水貯蔵特化タンク及び漏えい水遮蔽技術の御提案 Proposal on American tanks specific to contaminated water storage and technology on blocking leaked water	コールド・エナジー・システムズ 株式会社	①	1	1
220	東京電力福島第一原子力発電所における汚染水対策を巡る新たな技術についての提案 Proposal on new technology concerning countermeasures against contaminated water at TEPCO Fukushima	兵庫県南部大地震ボランティアセンター 代表 菅澤邦明	①②③ ④⑤⑥	3	4
221	港湾内放射能汚染水除染システムの提案 Proposal on decontamination system for radioactive contaminated water in the harbor	株式会社 TAMURA (営業担当 樋口 勝彦)	③	3	4
222	タンク内汚染水の除染の提案 Proposal on decontamination of contaminated water in tanks	株式会社 TAMURA (営業担当 樋口 勝彦)	②	3	4
223	溶接式鋼製横置きタンクの多段式設置工法による貯留効率の向上 Enhancement of accumulation effect by multistage installation method of welded-type steel horizontal tanks	大成建設株式会社、 玉田工業株式会社	①	1	3
224	ロボットプラストを用いた遠隔施工による既設タンク側壁内面の除染方法 Method of remote decontamination using robot blasting for the interior surface of sidewall of the existing tanks	大成建設株式会社、 三協興産株式会社	①	1	2
225	汚染水の着色による漏洩目視検知の追加 Visual detection of leakages by coloring contaminated water	大成建設株式会社	①	1	2
226	建屋内止水工に適した充填材料 Filler suitable for water stoppage in the building	大成建設株式会社	④	4	2
227	建屋近傍での効果的・効率的な地盤改良技術 Effective and efficient soil improvement technology near buildings	大成建設株式会社	④	4	3
228	粘土系遮水壁による流入抑制および汚染拡大防止対策 Measures for groundwater inflow reduction and prevention from contamination spread using clay impervious wall	大成建設株式会社	⑤	5	2
229	ストロンチウム汚染地下水を対象とした透過性浄化壁 Penetrable purification wall for ground water contaminated with strontium	大成建設株式会社、 CH2MHILL	⑤	5	2
230	トンネル及びボーリング孔による地下水流入抑制対策 Groundwater block method by tunnels and bore holes	大成建設株式会社	⑤	5	2
231	地下水化学・地下水年代の測定による地下水流動場の検証 Verification of groundwater flow by groundwater chemistry and groundwater dating	大成建設株式会社	⑥	6	1
232	汚染拡大予測シミュレーションによるリスクの抽出と低減 Risk analysis and reduction by contamination spread simulation	大成建設株式会社	⑥	6	1
233	使用済汚染水貯蔵タンクの迅速な撤去・解体・処理技術 Technology on prompt removal/dismantlement/treatment of used storage tanks for contaminated water	原子力バックエンド推進センター (榎戸裕二、澁谷進、菊池孝)	①	1	4
234	多孔質ガラスを用いたセシウム・ストロンチウムイオン等の吸着除去 Absorption and removal of cesium, strontium ion, etc. using porous glass	中部電力株式会社・ミカサ商事株式会社・ 株式会社ミカサテクノ	③	3	3
235	港湾内の海水の浄化(海中の放射性物質の除去等) Purification of seawater in the harbor (Removal of radioactive materials in seawater, etc.)	株式会社大林組、 株式会社バイノス	③	3	3
236	建屋冠水環境への遮水に用いる土質系遮水材(アクアソイルF) Water stoppage soil used to block water for the flood environment in the building (Aqua soil F)	株式会社大林組	④	4	3
237	常温硬化型超高強度繊維補強コンクリート「スリムクリート」 Cold-setting-type ultrahigh-intensity fabric reinforced concrete, "Slimcrete"	株式会社大林組	④	4	2
238	水中不分離性モルタル「アクアモルタル工法」 Underwater non-separable mortar, "Aqua mortar construction method"	株式会社大林組	④	4	2
239	アスファルト系材料を用いた法面フェーシングによる浸透水抑制技術 Technology to prevent seepage water by slope facing using asphalt materials	株式会社大林組、 関西電力株式会社	⑤	5	2
240	リードドリル工法を用いた地下導水管布設による地下水流入量の低減 Reduction of groundwater flow by laying underground water conduit using lead drill construction method	株式会社大林組、 関西電力株式会社	⑤	5	2
241	塩水環境下での海水を使用した地盤注入による遮水ゾーン構築技術 Technology to build water stoppage zone by ground injection using seawater under the salt water environment	株式会社大林組	⑤	5	3
242	高耐久海水練りコンクリートによる高性能遮水壁の構築 Building high-performance impermeable wall using highly durable seawater-mixed concrete	株式会社大林組	⑤	5	3
243	多機能工学バリアシステム(底部の汚染水閉じ込めバリア)の構築 Construction of a multifunctional engineering barrier system (contaminated water confinement barrier of a bottom of tanks)	株式会社大林組	⑤	4	3
244	遠隔操作を用いた汚染物質を増やさない無人ボーリング工法 Unmanned boring method by remote operation for less contaminants	株式会社大林組	⑥	6	2
245	汚染環境下の地下水流動特性評価およびモニタリング技術 Technology on characteristic evaluation and monitoring of groundwater flow under the contaminated environment	株式会社大林組、University of Waterloo、University of Arizona	⑥	6	1
246	水文現象(開水路)および地下埋設構造を高精度で取り込む地下水流動・物質移行解析 Analyses of groundwater flow and mass transport that capture hydrological phenomena (open channel) and underground structures with high precision	株式会社大林組、Aquanty、University of Waterloo	⑥	6	1
247	高機能ストロンチウム・セシウム等吸着剤を用いたタンク内放射性物質固定と選別放流による、現行タンク有効利用と非増設によるタンク問題解消 Solution to tank issues by effective use of existing tanks and no increase of new tanks using high-function absorbents for strontium, cesium, etc. for fixation of radioactive materials in the tanks, and the selective release	株式会社 AGT	①	1	3
248	放射性物質を吸着するシルトフェンスの提案 Proposal on silt fence that absorbs radioactive materials	日本海洋整備株式会社 桜井 實	③	3	4

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1. Those that are explained as having accomplished practical applications in an environment similar to Fukushima Daiichi NPS.
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249	港湾内海中のセシウム及びストロンチウムの選択的除去システム System of selective removal for cesium and strontium in the seawater in the harbor	Dr. Valentin Avramenko、 藤村 忠正	③	3	2
250	ロシア開発ストロンチウム吸着剤による汚染土壌の除染 Decontamination of contaminated soil using the strontium absorbent developed in Russia	Prof. Dr. Marina S. Vilesova、 藤村 忠正	⑤	5	2
251	Technology for treatment of tritium-contaminated water	Prof. Rozenkevich (MUCTR), Tadamasu Fujimura	②	2	2
252	アルカリ水電解方式による汚染水処理(トリチウム処理) Contaminated water treatment by alkali water electrolysis method (tritium treatment)	ペルメレック電極(株)、 クロリンエンジニアズ(株)	②	2	2
253	水中不分離性を有する可塑性の空洞注入材 Flexible ventricular injection that is underwater non-separable	(株)熊谷組	④	4	2
254	水中不分離性とセルフレベルリング性を有する裏込め充填材 Underwater non-separable backfiller that has self-leveling properties	(株)熊谷組	④	4	2
255	ウレタン樹脂による建屋止水 Water stoppage for the building using urethane resin	(株)熊谷組	④	4	2
256	金属イオン吸着体を担持した高強度極細繊維不織布 High-strength microfiber non-woven fabric with metal ion absorbent	NA	③	3	3
257	Accumulation of Contaminated Water (Storage Tanks, etc.)	PacTec	①	1	2
258	Removal of radioactive materials from the seawater in the harbor	NA	③	3	4
259	福島第一原子力発電所汚染水に関する統合管理システムの構築 Build a total management system for the contaminated water of Fukushima Daiichi NPS	梅木 博之、三枝 博光、尾上 博則、澤田	④⑤⑥	6	1
260	磁性炭素吸着剤による港湾内排水の浄化技術 Purification technology for waste water in the harbor using magnetic carbon absorbent	株式会社本山合金製作所、独立行政法人 国立高等専門 学校 津山高等専門学校	③	3	3
261	高性能かつ省エネタイプの水蒸留によるトリチウム水の分離回収 Removal and collection of tritium water by high-performance and energy-saving water distillation method	平野 悟、元村智博	②	2	3
262	界面前進凍結濃縮法によるトリチウム水の分離回収 Removal and collection of tritium water by progressive freeze concentration method	村谷利明	②	2	3
263	水素ガス置換によるトリチウム水の分離回収 Removal and collection of tritium by hydrogen-gas displacement	水谷淳二	③	2	3
264	吸着材等を材料とするシルトフェンス Silt fence using absorbents	前田工織株式会社	③	3	4
265	汚染水処理 吸着装置 Absorption equipment for contaminated water treatment	株式会社リンカイ	②	3	4
266	Treatment of contaminated water	NUKEM Technologies GmbH, in cooperation with	②	3	1
267	溶液中のセシウム、ストロンチウムの除去(実験で確認済み)、及びトリチウム除去に対する提案 Proposals on removing cesium and strontium in the solution (verified by experiments), and tritium removal	露木尚光	②③	3	3
268	放射性物質を含有する海水からの放射性物質の除去について Removal of radioactive materials from the seawater	藤村ヒューム管(株)、(株)連代コンストラクト、 (有)ピュア・テクノ	③	3	4
269	炭酸、硫酸塩形成による90Srのクリーン除染 Clean decontamination of 90Sr by the formation of carbonic acid and sulfate	齊藤拓巳 (東京大学 大学院工学系研究科 原子力専攻)	③	3	4
270	トリチウム処理等 Removal of tritium	つばでん 株式会社・ウクライナ チェルノブイリ立入禁止 区域管理庁所属《ラドン》	②	2	3
271	放射性汚染水中のトリチウムなど放射性同位体の放射能の減衰・消滅技術 Technology of attenuation and annihilation of radioactivity of radioactive isotopes such as tritium in the contaminated water	帝産湖南交通株式会社 帝産放射性汚染水対策研究チーム	②	2	4
272	福島第一原子力発電所における地下水観測 Observation of groundwater in Fukushima Daiichi NPS	丸井 敦尚	⑤⑥	6	1
273	大型タンカーを利用した大量汚染水の安全・安定的長期貯蔵及び汚染処理 Safe and stable long-term storage of a large amount of contaminated water using large tankers, and contamination treatment	河合敏雄、大山正俊 (日本船舶海洋工学会関西支部・海友フォーラム)	①	1	2
274	Accumulation of contaminated water - Other requirements for tanks	TARANIS GK	①	1	2
275	「三核子論」による放射性物質対分離手法 Removal method of radioactive materials based on "Three nucleon theory"	有限会社フローネット、新井 和夫	③	3	4
276	1~4号機取水路前エリアの海水中のSr濃度を低減させるための『浮き玉・シンカー付き吸着繊維モールを使うSr除 去システム』 "The Sr removal system using absorption fiberモールwith floating ball and sinker" to reduce the Sr concentration	斎藤 恭一(千葉大学大学院 工学研究科 共生応用化学 科 教授)	③	3	3
277	ボルト締め型タンクの撤去の前にSrの濃度を1/10以下に低下させ、作業者の被ばくを低減できる『吸着繊維ワイ ンドフィルタ搭載Sr除去装置』 "Sr removal system equipped with wind filter" that lowers the concentration of Sr to 1/10 before dismantling bolted tanks for exposure reduction of workers	斎藤 恭一(千葉大学大学院 工学研究科 共生応用化学 科 教授)	①	1	4
278	漏水箇所を考慮した建屋間ギャップの止水方法 Method of water stoppage for gaps between buildings taking the leakage points into account	株式会社 竹中工務店	④	4	2
279	局所モデルによる逆解析を利用した地下水挙動把握システム System of grasping the behavior of groundwater using back analysis based on local model	株式会社 竹中工務店	⑥	6	1
280	ゴム袋による汚染水タンクの腐食防止、2次的な汚染水漏れ防止 Prevention of corrosion of water tanks using rubber bag, and secondary leakage of contaminated water	東洋ゴム化工品株式会社 (福島ゴム株式会社 品質技術室 藍原)	①	1	2
281	Groundwater Management using Barrier Wall Systems; Surface Covers and Re-directing Surface Water Flows; and In-Situ Strontium Immobilization.	Geosyntec Consultants, Inc.	⑤	5	3
282	Understanding the Groundwater Flow Utilizing Conceptual Site Model, Hydrogeologic Investigation and Analysis, and Radionuclide Monitoring	Geosyntec Consultants, Inc.	⑥	6	1
283	微生物を利用した港湾内海水浄化システム Purification system for seawater in the harbor using microorganism	ポリテックジャパン	③	3	3
284	止水用鋼矢板による遮水壁 Impermeable wall of steel sheet pile for water stoppage	株式会社 太田技研 太田良三	⑤	5	3
285	白金酸のストロンチウム、セシウムと、ヨウ素との結晶形成による放射能除去機能を備えた汚染水貯留槽の提案 Proposal on storage tanks that have the function of removing radioactivity based on the formation of crystals from platinic acid strontium, cesium, and iodine.	露無 慎二	①	1	3
286	複合材化による、漏れない、錆びない、緩まない貯留用タンク Storage tanks based on composite materials that prevent leakage, rust, and loosening	Kubota Research Associates, Inc.	①	1	2
287	Nano-composite filters for the removal of fission products from contaminated water	Interface Analysis Centre, University of Bristol	②	2	3
288	Removal of radioactive materials from the seawater in the harbor	FSUE "RosRAO"	③	3	2
289	①-3微小漏えいを検出する技術、並びに⑤-1, 2 地下水流入抑制の敷地管理 ⑥-1 地下水・放射性核種等の 挙動管理 The technology for detecting minor leakage (①-3), for management measures to block groundwater from flowing	防災光技術ジャパン株式会社 代表取締役社長 後藤 正雄	①⑤⑥	6	1
290	Equipment for ⁹⁰ Sr and ³ H control (measurements) in the water	Khlopin Radium Institute	⑥	6	1
291	Under Vacuum Distillation	SHELL GmbH & Co.KG	②	3	4
292	Complex scheme of wastewater treatment to remove tritium	Khlopin Radium Institute	②	2	3
293	ENHANCED DATA-MODEL INTEGRATION FOR DEDICATED MONITORING AND ADAPTIVE CONTROL OF GROUNDWATER FLOW AROUND FUKUSHIMA DAIICHI NUCLEAR POWER PLANT	Deltares	⑥	6	1
294	スピネル型酸化マンガンを吸着材に用いたトリチウムの分離と溶離液への減容回収 Removal of tritium using spinel-type manganese oxide as absorbent, and reduction/collection to eluent	古屋 伸 秀樹	②	2	4
295	R型二酸化マンガンを吸着材に用いた海水中ストロンチウムの分離と溶離液への減容回収 Removal of strontium in the seawater using R-type manganese dioxide as absorbent, and reduction/collection to	古屋 伸 秀樹	③	3	3
296	Environment Management and Engineering Services	AECOM Technical Services, Inc.	①②③ ④⑤⑥	3	4
297	地盤に水平な方向に凍土等を形成する水平掘削注入装置 Horizontal drilling and injection equipment that forms frozen soil, etc. horizontally to the ground	上原 正勝	⑤	4	4
298	Complex scheme of the waste water treatment to remove tritium	"R&D Center for expertise of projects and technologies" and "Khlopin Radium Institute" (Rosatom)	②	2	3
299	Methods for blocking ground water ingress into buildings or in the ocean	"R&D Center for expertise of projects and technologies" and "Khlopin Radium Institute" (Rosatom)	⑤	5	2

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300	Equipment for ⁹⁰ Sr and ³ H control (measurements) in the refined water	"R&D Center for expertise of projects and technologies" and "Khlopin Radium Institute" (Rosatom)	⑥	6	1
301	Complex scheme of the waste water treatment to remove tritium	"R&D Center for expertise of projects and technologies" and "Khlopin Radium Institute" (Rosatom)	②	2	3
302	Integrated model of groundwater flow and radionuclide migration at Fukushima Daiichi Nuclear Power Station	Scott Painter and Hari Viswanathan, Los Alamos National Laboratory	⑥	6	1
303	化学交換レーザー複合反応による大量汚染水からのトリチウム回収保管 Collection and storage of tritium from a large amount of contaminated water by chemical exchange laser compound reaction	有澤 孝	②	2	3
304	Methods and techniques to improve measurement and radiological cartography	CEA	①	1	3
305	Surface decontamination by laser	CEA	①	1	3
306	METHODS AND TECHNIQUES TO IMPROVE DECOMMISSIONING AND DISMANTLING SCENARIOS	CEA	①	1	1
307	Surface decontamination by laser	CEA	⑤	4	2
308	METHODS AND TECHNIQUES TO IMPROVE DECOMMISSIONING AND DISMANTLING SCENARIOS	CEA	⑤	4	2
309	MICRO LIQUID-LIQUID EXTRACTION DEVICE FOR THE ANALYSE OF Sr IN GROUNDWATER	CEA	⑥	6	2
310	SIMULATING THE RADIONUCLIDE TRANSPORT IN GROUNDWATER	CEA	⑥	6	1
311	LAB ON VALVE FOR THE ANALYSIS OF Sr IN GROUNDWATER	CEA	⑥	6	3
312	Sorbster™ Adsorbent Media for Water Treatment	MAR Systems Inc.	②③	3	4
313	Permanent Managed Underground Barrier for Radioactive Water Control	SEQEnergy, a subsidiary of Graphene Technologies, Novato, CA and Tokyo, Japan	①⑤	5	2
314	Management measures to block groundwater from flowing into the site	Cavendish Nuclear Ltd (part of Babcock International Group and previously known as Babcock Nuclear	⑤	5	2
315	Removal of radioactive materials from the seawater in the harbor	Cavendish Nuclear Ltd (part of Babcock International Group and previously known as Babcock Nuclear	③	3	2
316	常温核融合(核変換)現象を利用した放射性物質低減の研究への取組み Research efforts for reducing radioactive materials using cold nuclear fusion (nuclear transmutation) phenomena	浅学 俊郎	②	2	4
317	Treatment of Contaminated Water	CH2M HILL	②	3	4
318	Management Measures to Block Groundwater from Flowing into the Site	CH2M HILL	⑤	5	1
319	Understanding the Groundwater Flow	CH2M HILL	⑥	6	1
320	Technologies for detection of minor leaks: Improvement in the detection ability of beta rays on patrol	Salvarem a NUVIA company, Soletanche Freyssinet	①	1	3
321	TREATMENT OF CONTAMINATED WATER	COLEBRAND INTERNATIONAL LIMITED	②	2	2
322	Vorsana Water Treatment for Fukushima	Wilmot McCutchen	②	2	3
323	Use of electrical geophysical methods	SAFEGE (SUEZ ENVIRONNEMENT GROUP)	⑥	6	1
324	Coupled modeling: groundwater, surface water, hydrodynamic	SAFEGE (SUEZ ENVIRONNEMENT GROUP)	⑥	6	1
325	地下水概念モデルの作成と地下水対策に対する技術評価委員会(仮称)の設置による科学技術的支援 Creation of groundwater concept model and scientific technological assistance by the establishment of Technology Evaluation Committee (tentative name) for groundwater measures	公益社団法人日本地下水学会 会長 嶋田 純	⑤⑥	6	2
326	The solution to the Problem of the Tritiated Water	NA	②	2	2
327	Removal of radioactive materials from the seawater in the harbor	NA	③	3	4
328	Supply of Tanks for Contaminated Water Storage	CB&I	①	1	1
329	Removal of Cs and Sr from Harbor Seawater	CB&I	③	3	4
330	Control of Off-Site Discharge	Atomic Energy of Canada Ltd.	⑥	6	1
331	Detection of Leaks in Aboveground Storage Tanks	Vista Engineering Technologies	①	1	2
332	Leak Sealing Spray	Vista Engineering Technologies	④	4	2
333	Long Reach Arm for Tank Cleaning	Vista Engineering Technologies	①	1	1
334	Requirements for the welded type of tanks	Candu Energy Inc., SNC-Lavalin, Atomic Energy of Canada Ltd., Canadian Nuclear Partners	①	1	2
335	Other requirements for tanks	Candu Energy Inc., SNC-Lavalin, Atomic Energy of Canada Ltd., Canadian Nuclear Partners	①	1	2
336	Facilitating removal of the bolted type of tanks, decontamination of tanks and long-term storage of radioactive spent filters	Candu Energy Inc., SNC-Lavalin, Atomic Energy of Canada Ltd., Canadian Nuclear Partners	①	1	1
337	Requirements for tritium removal technologies	Candu Energy Inc., SNC-Lavalin, Atomic Energy of Canada Ltd., Canadian Nuclear Partners	②	2	2
338	Requirements for treatment technologies	Candu Energy Inc., SNC-Lavalin, Atomic Energy of Canada Ltd., Canadian Nuclear Partners	②	2	2
339	Technologies to block water inside the buildings	Candu Energy Inc., SNC-Lavalin, Atomic Energy of Canada Ltd., Canadian Nuclear Partners	④	4	2
340	Technologies for soil improvement	Candu Energy Inc., SNC-Lavalin, Atomic Energy of Canada Ltd., Canadian Nuclear Partners	④	4	2
341	Construction technologies for impervious walls	Candu Energy Inc., SNC-Lavalin, Atomic Energy of Canada Ltd., Canadian Nuclear Partners	⑤	5	2
342	Technique for covering surfaces	Candu Energy Inc., SNC-Lavalin, Atomic Energy of Canada Ltd., Canadian Nuclear Partners	⑤	5	2
343	Technique for collecting radioactive Sr	Candu Energy Inc., SNC-Lavalin, Atomic Energy of Canada Ltd., Canadian Nuclear Partners	⑤	5	2
344	Method to collect data required to investigate groundwater flow	Candu Energy Inc., SNC-Lavalin, Atomic Energy of Canada Ltd., Canadian Nuclear Partners	⑥	6	1
345	Dig observation holes	Candu Energy Inc., SNC-Lavalin, Atomic Energy of Canada Ltd., Canadian Nuclear Partners	⑥	6	1
346	Groundwater analysis and nuclide migration and diffusion analysis	Candu Energy Inc., SNC-Lavalin, Atomic Energy of Canada Ltd., Canadian Nuclear Partners	⑥	6	1
347	Modular Units for the Removal of Cesium-137 and Strontium-90 Radionuclides from Contaminated Sea Water and Liquid Radioactive Waste at the Fukushima Nuclear Plant Site	OJSC "ITEM", Moscow, Russia	③	3	2
348	Realization of a method for decontamination of the sea water in the harbor of NPP Fukushima	Theta-Consult Ltd	③	3	4
349	Understanding Groundwater Flow	Shaw Global Services, LLC	⑥	6	1
350	Management measures to block groundwater from flowing into the site	Shaw Global Services, LLC	⑤	5	2
351	Los Alamos National Laboratory Capabilities and Expertise: Environmental Assessment, Remediation, Monitoring and Decontamination and Decommissioning near the Fukushima-Daiichi Nuclear Power Station Site	Los Alamos National Laboratory	①②③ ④⑤⑥	3	4
352	the Annular Beta Spectrometer System (ABSS) for Subsurface Monitoring	Douglas Akers Idaho National Laboratory	⑥	6	1
353	Highly Selective Sorbents for Radiological Cs+ and Sr2+ Ion Removal from Contaminated Seawaters	Tina M. Nenoff	③	3	3
354	蛍光色素を用いた微量漏洩検出技術 Technology to detect minor leakage using fluorescent dye	NA	①	1	2
355	氷吸着によるトリチウム除去技術 Tritium removal technology based on ice absorption	株式会社 東芝	②	2	3
356	粉末吸着材による港湾内海水の浄化処理技術 Technology of purification treatment for seawater in the harbor using powder absorbent	株式会社 東芝/ 株式会社 荏原製作所	③	3	3
357	ストロンチウムの全自動かつ短時間測定 Fully automatic, quick measurement of strontium	(株)東芝	⑥	6	3
358	凍結技術の建屋間止水への適用に関する可能性検証研究 Feasibility study on applying freeze technology for water stoppage between buildings	株式会社 東芝, 鹿島建設株式会社	④	4	3
359	イオン交換樹脂(DUOLITE ARC9359)を用いた海水中Csの除去 Removal of Cs in the seawater using ion exchange resin (DUOLITE ARC9359)	美濃健太 杉野亘	③	3	3
360	プレストレストコンクリートタンクによる大容量貯槽 Large-capacity storage tanks using prestressed concrete tanks	三井住友建設株式会社	①	1	2
361	長周期地震動に対するスロッシング制御装置 Sloshing control system for long-period ground motion	三井住友建設株式会社	①	1	2

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6. Understanding the groundwater flow
7. Other than seven areas above

[Note 2] Experience of using the technology (Technology readiness levels explained)

1. Those that are explained as having accomplished practical applications in an environment similar to Fukushima Daiichi NPS.
2. Those that are explained as having accomplished practical applications in other fields.
3. Those that are explained as having established the principles, and accomplished certain validation at a research level.
4. Those that are explained as conceptual proposals, etc.

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No.	Subject (Provisional English translation is attached below the original Japanese responses)	Submitted by	Area	Note1	Note2
362	放射性Cs、Sr吸着剤保持フィルターによる放射性物質の湾外への流出防止 Prevention of radioactive materials flowing out from the harbor using absorption retention filter for radioactive Cs	三井住友建設株式会社	③	3	3
363	可塑性充填材による建屋内充填 Filling inside the building using plastic filler	三井住友建設株式会社	④	4	2
364	No form 2	No form 2	NA	3	3
365	感温性高吸水性樹脂の利用による汚染水の安定貯蔵 Stable storage of contaminated water using temperature-sensitive superabsorbent polymer	廣川能嗣	①②	1	3
366	トリチウム分離除去技術 Tritium removal technology	アドバンスト ウェイスト&ウオーター テクノロジー インク	②	2	2
367	地下深部地層を利用した汚染水隔離に関する提案 Proposal on isolating contaminated water using deep ground layer	登坂 博行、山田 正、齊藤 拓巳、丸井 敦尚、 佐々木 憲司	①②⑥	2	3
368	メソポーラスセラミックスによる高濃度汚染水の除染と廃棄処分 Decontamination and disposal of high-concentration contaminated water using mesoporous ceramics	有限会社パールハート(共同提案者合同会社シリカマテ リアル、株式会社TGケラー)	②	3	3
369	トリチウム水の同位体分離処理と最終処分のフィジビリティ評価 Feasibility study on isotope separation treatment of tritium water and the final disposal	日本原子力学会	②③	2	2
370	No form 2	No form 2	NA	3	3
371	SEI Industries Collapsible Tank Solutions	Sojitz Aerospace Corporation	①	1	2
372	化学バリアー機能を持つ多重遮水層と地下水くみ上げによる地下水制御システムの構築とtritogenic ³ He 分析による効率的な汚染水モニタリング Building a groundwater control system of multiple impermeable layers having chemical barrier function and groundwater pumping, and effective monitoring of contaminated water based on tritogenic ³ He analysis	徳永朋祥 (東京大学大学院新領域創成科学研究科・教授)	⑤⑥	4	2
373	電気防食「シービーシステム」 Electrolytic protection "CP Systems"	加藤 貢	①	1	1
374	Treatment of contaminated water (Tritium, etc.)	Katherine Tokes and JD Deguire Développement	②	3	3
375	Removal of radioactive materials from the seawater in the harbor	Katherine Tokes and JD Deguire Développement	③	3	3
376	フランスSaphymo社線量計 Dosemeter manufactured by Saphymo, France	丸紅ユティリティ・サービス株式会社/Saphymo	①③⑥	1	2
377	フランスLemer Pax社 EasyRadwater(放射線測定装置) EasyRadwater (Radiation measurement equipment) by Lemer Pax, France	丸紅ユティリティ・サービス株式会社/Lemer Pax社	③⑥	6	1
378	米国PCI Promatec社 止水材 Water stops by PCI Promatec, U.S	丸紅ユティリティ・サービス株式会社/PCI Promatec社	④	4	2
379	No form 2	No form 2	NA	1	2
380	敷地山側からの地下水量を低減する提案 1案:連続地中壁(コンクリート)による地下水流入抑制 Proposal for groundwater flow reduction from mountainside #1: Blocking groundwater flow by continuous underground wall (concrete)	中部電力株式会社	⑤	5	2
381	地下水汚染水処理と港湾内放射性底泥の回収減容を融合した除染システム(ネオナイト工法) Decontamination system, coupling contaminated-groundwater treatment with collection/reduction of radioactive saline mud in the harbor (Neonite method)	株式会社 ネオナイト	③	3	4
382	Accumulation of Contaminated Water	Fluor Federal Services, Inc.	①	1	4
383	Treatment of Contaminated Water	Fluor Federal Services, Inc.	②	2	2
384	Removal of Radioactive Materials from the Seawater in the Harbor	Fluor Federal Services, Inc.	③	3	4
385	Management of Contaminated Water Inside the Buildings	Fluor Federal Services, Inc.	④	4	2
386	Management Measures to Block Groundwater from Flowing into the Site	Fluor Federal Services, Inc.	⑤	5	2
387	Understanding the Groundwater Flow	Fluor Federal Services, Inc.	⑥	6	1
388	福島第一原子力地点における地下水挙動把握のための水理地質構造解析 Analysis on hydraulic, geological structure to understand the flow of groundwater at Fukushima Daiichi NPS	東北緑化環境保全株式会社(東北電力企業グループ)	⑥	6	1
389	トリチウム汚染水の海洋放出に関連する法整備および技術の開発 Development of laws and technologies concerning the release of tritium-contaminated water into the ocean	白石知成	②	2	2
390	液体窒素による汚染源の冷却、固化 Cooling and solidification of contamination source using liquid nitrogen	中村泰子	④	4	2
391	液状化対策 Liquefaction measures	中村泰子	⑤	5	4
392	3室ダブルイン型電解装置を用いた、トリチウム濃縮 Tritium condensation using 3 cell double in electrolysis equipment	(株)レドックス 横川	②	2	3
393	Proposal for controlling ground water and radioactive leakage in Fukushima Daiichi Nuclear Power Station	World Water and Climate Foundation	①③⑤ ⑥	5	4
394	K525を用いた海水中の放射性セシウム・ストロンチウムの除去装置 Removal equipment for radioactive cesium/strontium in the seawater using K525	金沢大学汚染処理研究チーム・バイオセラピー開発研究 センター	③	3	3
395	油送船を用いて汚染水を洋上貯蔵、処理するシステム System to store and treat contaminated water on the ocean using oil carriers	近藤季松(代表)、渥美治、鈴木迪雄、高山榮也	①②	1	2
396	汚染水処理(トリチウム処理等) Contaminated water treatment (tritium treatment, etc.)	日本テクノ株式会社	②	2	4
397	汚染水タンクの防水防食処理+制動放射X線遮蔽 Contaminated water tank treatment for water and corrosion prevention + Bremsstrahlung X-ray shielding	KEMICA COATINGS(仏)	①	1	2
398	高性能振動式クロスフロー膜分離装置 High-performance cross-flow membrane remover	イーエナジー株式会社/New Logic Research Inc.(米)	②	3	1
399	低シアン溶出セシウム回収フィルター cesium collection filter of low cyan elution	神戸工業試験場、小津産業(株)	③	3	3
400	汚染水貯槽の肉厚遠隔測定検査 Remote measurement of thickness of contamination-water storage	日揮株式会社	①	1	2
401	トリチウム分離の考え方及び技術 Idea and technology on tritium removal	日揮株式会社	②	2	2
402	港湾内堆積土砂浚渫とその処理 Dredging and treating sedimentary soil in the harbor	日揮株式会社	③	3	3
403	シルトフェンス材料 Silt fence materials	日揮株式会社	③	3	3
404	土壌中 Sr の選択吸着 Selective absorption of Sr in the soil	日揮株式会社	⑤	5	3
405	サイト外遮水壁設置 Installation of impermeable wall outside the site	日揮株式会社	⑤	5	2
406	地下水の挙動把握の為の手法 Method for understanding the groundwater flow	日揮株式会社	⑥	6	1
407	地下水環境計測用マイクロ化学プローブ Micro chemical probe for the environmental measurement of groundwater	日立GEニュークリア・エナジー(株)	⑥	6	3
408	Cs 吸着繊維、Sr 吸着繊維による海水浄化 Purifying sea water by Cs absorption fiber and Sr absorption fiber	日立GEニュークリア・エナジー(株)、 (株)環境浄化研究所、千葉大学	③	3	3
409	沿岸海域における海水の放射線量の連続監視システム Continuous monitoring system of radiation dose of seawater in the coastal sea area	テクノビル株式会社、 Mirion Technologies 社	⑥	6	1
410	汚染修復に関する地球統計学的手法によるサイトアセスメントと4D可視化-ソフトウェアEVSの提供 Site assessment based on a geostatistical method concerning recovery from contamination, and 4D visualization - providing software EVS	Reed D. Copsy (C Tech:U.S.A) 有限会社太田ジオリサーチ	⑥	6	1
411	タンク内汚染水のストロンチウムの選択的除去システム Selective removal system for strontium in contaminated water in tanks	Dr. Valentin Avramenko、 藤村 忠正	②	3	2
412	Kurion Modular Detritiation System (MDS™)	Kurion, Inc.	②	2	2
413	Electrical geophysical imaging methods for [1] characterizing permeability controlling groundwater flow, and [2] monitoring groundwater/saline water interactions	Lee Slater & Dimitrios Ntarlagiannis, Rutgers University	⑥	6	1

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414	サイト内トレンチ水のセシウム及びストロンチウムの選択的除去システム Selective removal system for cesium and strontium in in-site trench water	Dr. Valentin Avramenko、 藤村 忠正	④	3	2
415	放射性核種の原位置移行試験の経験を踏まえた地下水に係るデータ収集・分析手法、ボーリング技術、水質の分析技術等にもとづく福島第一NPP 周辺地域の地下水流動場の把握	Kurion, Inc.	③	3	2
416	Understanding groundwater flow field around Fukushima Daiichi NPP based on methods of data collection and analysis on groundwater based on experiences of in-situ transition test of radionuclides, boring technology, analysis technology on water quality, etc.	イーエナジー株式会社/ NAGRA(スイス)	⑥	6	1
417	Management of Contaminated Water Inside the Buildings using GeoMelt Sub-Planarvitrification Outside the	Kurion, Inc.	④	4	2
418	Management Measures to Block Groundwater from Flowing into the Site using an underground GeoMelt Barrier	Kurion, Inc.	⑤	5	2
419	剥離性樹脂(RTV FA 878)による汚染水タンク内表面の除染 Decontamination of inner surface of contaminated-water tanks using peeling resin (RTV FA 878)	Bouygues Construction Service Nucleaires (BCSN)(仏)	①	1	1
420	高機能フィルターによる汚染フィルター等の固化 Solidification of contamination filter, etc. using high-function filter	Bouygues Construction Service Nucleaires (BCSN)(仏)	①	1	1
421	フレキシブルタンクによる50万トン海上貯蔵 Marine storage of 500,000 tons using flexible tanks	福岡 強	①	1	4
422	不織布常温蒸発法による汚染水の減容化 Volume reduction of contaminated water by non-woven, normal-temperature evaporation method	福岡 強	②	2	3
423	空堀掘削による地下水のバイパス放流 Bypass discharging of groundwater by dry-moat drilling	福岡 強	⑤	5	4
424	Remote geophysical monitoring of groundwater flow and remediation efficacy	Lawrence Berkeley National Laboratory: Susan Hubbard, Mike Kowalsky, Haruko Murakami- Wainwright, and Ken Williams	②⑤⑥	6	1
425	Comprehensive Groundwater Flow Model for Planning and Optimizing Hydraulic Measures	Lawrence Berkeley National Laboratory: Kenzi Karasaki, Haruko Murakami-Wainwright, and Jens Birkholzer	⑥	6	1
426	Reactive transport modeling for understanding the long-term fate of radionuclides in groundwater and for evaluating remediation strategies	Lawrence Berkeley National Laboratory: Carl Steefel, Nic Spycher, James Davis, Haruko Murakami- Wainwright, Jens Birkholzer	⑤⑥	6	1
427	Long-term geological sequestration of tritium using deep-well injections	Lawrence Berkeley National Laboratory: Haruko Murakami-Wainwright, Jens Birkholzer, Kenji Karasaki	②	2	2
428	地下水対策計画の立案のための水循環モデル解析 Water circulation model analysis for the planning of groundwater countermeasures	国際航業株式会社 平山利晶	⑤⑥	6	1
429	放射性同位体をトレーサーとして用いた地下水の挙動調査 Investigation of groundwater flow using radioisotope as a tracer	株式会社日本環境調査研究所 板羽昌之	⑤⑥	6	2
430	放射性物質吸着遮水シートによる雨水浸入防止および放射性物質移行防止 Prevention of rainwater filtration and radioactive material transfer using absorptive impermeable sheet for radioactive materials	特殊東海製紙 株式会社	⑤	5	2
431	ボルト締めタンク内のスラッジ除去 Removal of sludge in the bolted tanks	Bouygues Construction Service Nucleaires (BCSN)(仏)	①	1	1
432	タンカーを利用した汚染水洋上貯留 Marine storage of contaminated water using tankers	常石造船株式会社 小葉竹 泰則	①	1	3
433	汚染水貯留状態でのボルト締め型タンクの防水処理 Waterproof treatment for bolted tanks accumulating contaminated water	Bouygues Construction Service Nucleaires (BCSN)(仏)	①	1	2
434	特殊樹脂充填による建屋内からの止水 Water stoppage from inside the building using special resin filler	Bouygues Construction Service Nucleaires (BCSN)(仏)	④	4	2
435	特殊樹脂による建屋周辺の止水 Water stoppage around the building using special resin	Bouygues Construction Service Nucleaires (BCSN)(仏)	④	4	2
436	海中での線量率分布モニタリングシステムの構築 Building a monitoring system for dose-rate distribution in seawater	日立GE ニュークリア・エナジー(株) / 清水建設(株)	③	3	3
437	セシウム吸着不織布 Cesium absorption non-woven fabric	日本パイロン株式会社 技術本部 第二技術部 伊藤 康博	③	3	3
438	海中の放射性セシウム及びストロンチウムの除去 Removal of radioactive cesium and strontium in the seawater	関東化学株式会社 技術・開発本部 技術・開発部 金 澤 幸広	③	3	3
439	建屋止水機能の強化 Enhancement of water stoppage function for the building	日立GE ニュークリア・エナジー(株) / 清水建設(株)	④	4	2
440	耐汚染性 PTFE多孔質膜による蒸留システム Distillation system using contamination-resistant PTFE porous membrane	住友電気工業株式会社	③	3	3
441	CONTROLLING GROUNDWATER FLOW AT THE FUKUSHIMA SITE WITH A NATURAL MINERAL BARRIER CAPABLE OF IMMOBILISING STRONTIUM AND CAESIUM	Dr Chris Waring (Australian Nuclear Science and Technology Organisation) / Dr Jeff Taylor (Earth	⑤⑥	5	2
442	鉄鋼スラグから製造された超微粉末を注入グラウト材とした遮水壁工法 Construction method of impermeable wall using ultrafine powder as injection grout produced from iron and steel	日金建設(株) 代表取締役 河野 修三、(株)博有 代表取締役 波多野 正道	⑤	5	2
443	10万トン級タンク 100,000-ton-level tanks	プラント技術者の会 筒井哲郎	①	1	2
444	タンク群の上流に実績ある遮水壁を Proven impermeable walls located upstream of the tanks	プラント技術者の会 筒井哲郎	⑤	5	2
445	Accumulation of Contaminated Water (Storage Tanks, etc.)	EnergySolutions Services Inc.	①	1	1
446	Treatment of contaminated water (Tritium, etc.)	EnergySolutions Services Inc.	②	2	2
447	Removal of radioactive materials from the seawater in the harbor	EnergySolutions Services Inc.	③	3	3
448	Understanding the groundwater flow	EnergySolutions Services Inc.	⑥	6	1
449	HHOガスの活用による汚染水処理(トリチウム処理等) Contaminated water treatment using HHO gas (tritium treatment, etc.)	鈴木文雄	②	2	4
450	RO膜(逆浸透膜)の活用による汚染水処理 Contaminated water treatment using RO membrane (reverse osmosis membrane)	鈴木文雄	③	3	1
451	地下探査手法とコントロールボーリングを併用した透水性分布の把握と流れ場のモニタリング Understanding permeability distribution using the underground exploration method and control boring, and monitoring of flow field	地中モニタリング研究会 (代表: 松岡俊文(京都大学))	⑥	6	2
452	Control of Tritium Levels	Atomic Energy of Canada Ltd.	②	2	2
453	空冷式ジェットバーナーシステムによるトリチウム含有水の減容 Volume reduction of tritium-containing water using air-cooled jet burner system	東京工科大学 板宮助教、株式会社アイエスエム、三井 産業株式会社	②	2	2
454	腐食しないアラミド繊維補強材を用いたコンクリート製タンク Concrete tanks using anti-corrosive aramid fiber reinforcement	ファイベックス株式会社	①	1	2
455	地下水流入遮水壁 Impermeable wall for groundwater flow	株式会社林物産発明研究所	⑤	5	4
456	汚染水貯蔵・地下水流入遮水壁等 Contaminated water storage, impermeable wall for groundwater, etc.	株式会社林物産発明研究所、中川ヒューム管工業株式 会社、株式会社林造園	①⑤	1	4
457	大型タンカー等による汚染水の海上保管 Marine storage of contaminated water using large tankers, etc.	河澄龍之介	①	1	2
458	微生物の代謝を利用したトリチウムの沈降濃縮と除去 Sedimentation thickening and removal of tritium using the metabolism of microorganism	株式会社コンティグ・アイ	②	2	4
459	Structured water as a possible solution for radiation measures	BioAq/ Trygve Forssten	①	7	4
460	汚染水の蒸発高温酸化分散放散(蒸散)システム Transpiration system for contaminated water	株式会社オカドラ 代表取締役社長 金井 正夫	②	2	2
461	港湾内海水の放射性元素浄化システム Purification system for radioelements in seawater in the harbor	(一財)電力中央研究所: 土方孝敏、魚住浩一、稲垣健 太、塚田毅志、小山正史、ユニオン昭和(株): 松倉実、石 崎英司、昭和環境システム(株): 水野久松、河田敏	③	3	4
462	DBD Limited applied knowledge and expertise	DBD Limited	①②③ ④	3	4

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463	凝集沈殿法による海中のセシウム、ストロンチウム除去 Removal of cesium and strontium in the seawater using the coagulation-sedimentation method	三菱重工株式会社、株式会社パワーリめいく、特定非営利活動法人再生舎	③	3	3
464	RO膜、NF膜分離による海水中Sr浄化システム Purification system for Sr in the seawater based on RO membrane and NF membrane separation	三菱重工株式会社	③	3	1
465	港湾内浚渫システム Dredge system in the harbor	三菱重工株式会社	③	3	4
466	吸着材を用いた「放射性海水廃液処理システム」 “Treatment system for radioactive waste fluid of seawater” using absorbents	三菱重工株式会社、三菱原子燃料株式会社	③	3	1
467	港湾口二重ゲート設置による港湾内海水浄化システム Seawater purification system in the harbor by the installation of double gates at the harbor entrance	三菱重工株式会社	③	3	4
468	Water Solidification Process	Ceram	①	1	1
469	海側完全遮水壁と山側地下水流入抑制遮水壁の構築 Building impermeable walls for complete water stoppage at the seaside and groundwater inflow prevention at the mountain side	株式会社 技研製作所	⑤	5	2
470	港湾内の海水の浄化(海水中の放射性物質の除去等) Purification of seawater in the harbor (removal of radioactive materials in the seawater, etc.)	日本化学工業株式会社	③	3	3
471	汚染水固形化保存 Solidification and storage of contaminated water	吉田統三・小山央二	①	1	3
472	α線用ガスフロー式サーベイメータの応用 Application of gas-flow-type survey meter for alpha ray	一般財団法人日本クリーン環境推進機構(JCEP)	①	1	4
473	トリチウムの迅速な測定・分析 Rapid measurement and analysis of tritium	一般財団法人日本クリーン環境推進機構(JCEP)	⑥	6	3
474	トリチウムの迅速分析法 Rapid analysis method for tritium	一般財団法人日本クリーン環境推進機構(JCEP)	⑥	6	2
475	トンネルマシン等の活用による集水坑道の開削並びに原子炉建屋地盤周辺及び底部への遮水壁の構築 Mine for catchment using tunnel machine, etc., and build impermeable walls around and at the bottom of nuclear reactor buildings	一般財団法人日本クリーン環境推進機構(JCEP)	⑤	5	2
476	建屋内水位管理による流入抑制 Inflow prevention by water-level control in the building	一般財団法人日本クリーン環境推進機構(JCEP)	⑤	5	4
477	焼却炉による汚染水の蒸発減容化 Volume reduction by evaporation of contaminated water using incinerators	一般財団法人日本クリーン環境推進機構(JCEP)	②	2	2
478	汚染水対策工法(甲案) Construction method for contaminated water measures	シンシンプロック株式会社	①	1	3
479	交流電界印加装置による放射性物質の減容化 Volume reduction of radioactive materials using alternating current electrical field application equipment	株式会社エフ・オー・ラボ	②③	3	3
480	鋼矢板遮水工の効率的な施工管理及び止水強化方法 Effective construction management for water stoppage using steel sheet pile and the method for water stoppage enhancement	電源開発株式会社	⑤	5	2
481	地下水流動及び放射性核種移行の観測、解析、可視化による一体的な地下水管理システム Integrated groundwater management system based on observation, analysis, and visualization of groundwater flow and radionuclide transfer	公益財団法人リバーフロント研究所、八千代エンジニアリング(株)、(株)日立製作所、(株)WATER、公益財団法人原子力バックエンド推進センター	⑥	6	1
482	Neutralization Procedure for Contaminated Water in the Storage Tanks	Parshuram N. Shastri	②	2	4
483	No form 2	No form 2	NA	7	4
484	放射性物質で汚染された汚泥の浄化方法 Method of purifying sludge contaminated with radioactive materials	伊藤 謙	②③⑤	5	2
485	β線の微小漏えいを検出できる軽量サーベイのご提案 Proposal on light survey that can detect minor leakages of beta ray	テクノヒル株式会社、Mirion Technologies社	①	1	3
486	トリチウム水を濃縮する水蒸留法のための蒸留塔 Distillation tower for the water distillation method that condenses tritium water	阿賀田 隆啓	②	2	3
487	廃プラを原料とする安価・疎水性ナノファイバー不織布を用いた敷地山側のフェーシング法 Facing method at the mountain side of the site using low-cost, hydrophobic Nano fiber non-woven fabric produced from waste plastic	株式会社マイクロ・エナジー	⑤	5	3
488	廃プラを原料とする安価・疎水性ナノファイバーを用いた海側遮水壁の完全遮水構造 Impermeable wall at the seaside having complete impermeable structure, using low-cost, hydrophobic Nano fiber produced from waste plastic	株式会社マイクロ・エナジー	⑤	5	3
489	No form 2	No form 2	NA	3	4
490	No form 2	No form 2	NA	3	4
491	No form 2	No form 2	NA	2	2
492	Understanding the Groundwater Flow	TES	⑥	6	1
493	大型タンカーを活用した安全な汚染水の貯蔵 Safe storage of contaminated water using large tankers	株式会社日本海洋科学	①	1	2
494	セシウムおよびストロンチウム吸着カーテン及び浮沈式シルトフェンスの活用 Use of absorptive curtain for cesium and strontium, and float-sink silt fence	NA	③	3	4
495	【対策1】高密度凝集沈殿法を汚水処理の初期段階において、複数の大型タンクで大量処理を図る階層的機能の浄化法。【対策2】排砂管を利用した多重濾過塔で、大量処理を可能とした既設システムのバックアップ [Measure 1] Hierarchic purification functions performing the high-density coagulation sedimentation method by using several large tankers at the initial phase of contaminated water treatment [Measure 2] Backup to the existing system using filter tower of sand flash pipes, allowing mass treatment	日本ソリッド株式会社	②	3	4
496	【対策1】網状構造の透水型フェンスを多重展開して海域の秩序を保ち、階層的構造で接触・付着沈殿を行う浄化法。 【付加技術】凝集剤と固体触媒(濁質を含む)で高密度凝集したマイクロブロックをフェンスに付着させて汚染物質を吸着する港湾内の海水浄化法。 [Measure 1] Purification method by multi-deploying a permeable fence of network structure, maintaining the order of marine area, and performing contact/adhesion precipitation by the hierarchic structure. [Additional technology] Purification method of seawater in the harbor, absorbing contaminants by attaching microfloc coagulated by coagulant and solid catalyst (including suspended substances) to a fence.	日本ソリッド株式会社	③	3	4
497	No form 2	No form 2	NA	3	3
498	汚染水貯蔵タンクにおける汚染水漏えい検知機器 Detection equipment for contaminated water leakage from storage tanks	昭和機器工業株式会社 東京営業本部 取締役営業本部長 北東 鷹	①	1	2
499	光ファイバーセンシング技術を用いた地下水挙動の長期観測技術 Long-term observation technology for groundwater flow using optical fiber sensing technology	小久保 達生、中野 勝志(株式会社アサノ大成基礎エンジニアリング)	⑥	6	2
500	地下連壁工法による地下水遮断壁 Impermeable wall for groundwater based on the construction method of underground diaphragm wall	株式会社奥州基礎工業	⑤	5	2
501	汚染水からの放射能除去に沈殿法の採用を Adoption of precipitation method for removing radioactivity from contaminated water	菅野 等 (防衛大学校 名誉教授)	②	3	4
502	放射能汚染処理水の保管における密封容器充填と継続的管理の手法 Use of hermitic container for the storage of radiation-tainted water and continuous method	北海製罐株式会社 宮本 隆	①	1	2
503	10cm角立方体タンク連接洋上細分管理保管 甲板で自然エネルギー発電売電により本事業費を回収 Segmented management and marine storage connected to 10cm cubic tanks Cover the cost by generating/selling natural power at the deck	特定非営利活動法人 世界環境改善連合(吾郷 巖)	①	1	2
504	汚染水貯蔵の緊急対応(タンクの外部の漏水対策) Emergency measures for contaminated water storage (against the leakage of water from the exterior of tanks)	オーガニックシステム、体育環境発明機構、菊池製作所	①	1	2
505	汚染水貯蔵の除染「タンクの内部除染」 Decontamination of contaminated water storage, “Decontamination inside the tanks”	オーガニックシステム、体育環境発明機構、菊池製作所	①	3	3
506	港湾内の海水の浄化「海水中の放射性物質の除去」 Purification of seawater in the harbor, “Removal of radioactive materials in the seawater”	オーガニックシステム、体育環境発明機構、菊池製作所	③	3	3
507	建屋内の汚染水管理「建屋内止水、地盤改良等」 Management of contaminated water inside the building, “Water stoppage inside the building, ground improvement,	オーガニックシステム、体育環境発明機構、菊池製作所	④	4	2

[Note 1] Most relevant areas of technologies requested

1. Accumulation of contaminated water
2. Treatment of Contaminated water
3. Removal of radioactive materials from seawater in the harbor
4. Management of contaminated water inside the buildings
5. Management measures to block groundwater from flowing into the site
6. Understanding the groundwater flow
7. Other than seven areas above

[Note 2] Experience of using the technology (Technology readiness levels explained)

1. Those that are explained as having accomplished practical applications in an environment similar to Fukushima Daiichi NPS.
2. Those that are explained as having accomplished practical applications in other fields.
3. Those that are explained as having established the principles, and accomplished certain validation at a research level.
4. Those that are explained as conceptual proposals, etc.

NA : Not available

No.	Subject (Provisional English translation is attached below the original Japanese responses)	Submitted by	Area	Note1	Note2
508	Management of contaminated water inside the buildings	EPRI	④	4	2
509	Management Measures to Block Groundwater from Flowing into the Site	EPRI	⑤	5	2
510	自然蒸発による水処理 Water treatment by natural evaporation	諸岡 淳策	②	2	3
511	カリウム散布によるトリチウムの除染 Decontamination of tritium by potassium dispersion	柳原 隆司	②	2	4
512	界面動電現象法及び真空吸引法による土壌等の放射性物質の除去・排水システム Removal/drainage system for radioactive materials in the soil, etc. based on electrokinetics method and vacuum suction method	上原 正勝	⑤	5	2
513	汚染水貯蔵タンクからの流体の漏れ防止技術 Technology to prevent leakage of fluid from storage tanks of contaminated water	友安 良興	①	1	2
514	大環状化合物を活用した海水中の放射性Cs, Srの分離除去システム Separation/removal system for radioactive Cs and Sr in the seawater using macrocyclic compound	サニー・トレーディング株式会社 大澤 晃 大竹 裕	③	3	3
515	No form 2	No form 2	NA	7	4
516	和紙繊維の特性を活用する汚染水処理(汚染水前処理プロセスの簡便化を含む)及び港湾内海水浄化用ネットのご提案 Proposals on contaminated water treatment (including simplification of pretreatment process of contaminated	株式会社キュアテックス 京都府立大学大学院生命環境科学研究科	②③	3	4
517	油送船を用いて汚染水を洋上貯蔵、処理するシステム Marine storage and treatment system for contaminated water using crude oil carrier	近藤李松(代表)、渥美治、鈴木迪雄、高山榮也	①②	1	2
518	天然鉱物由来微粉末“アドバンスクレイズ”汚染水処理について Regarding contaminated water treatment using “Advance Clay Z”, a fine powder derived from natural minerals	鈴木 孝志	②	2	3
519	メルトダウンした核燃料を低融合合金で被覆する Coat the meltdown nuclear fuel with low-fusion alloy	菅野 等 (防衛大学校 名誉教授)	②	7	4
520	敷地山側からの地下水量を低減する提案 2案:連続地中壁(ソイルセメント)による地下水流入抑制 Proposal for groundwater flow reduction from mountainside #2: Blocking groundwater flow by continuous underground wall (soil cement)	中部電力株式会社	⑤	5	2
521	浮遊選別法による放射性核種の分離回収 Separation and collection of radionuclides based on the floating selection method	特定非営利活動法人 除染技術研究開発 理事長 佐原 猛	②	3	4
522	②トリチウムを減圧低温蒸留処理 ③凝集剤による海水の浄化 2. Decompression, low temperature, distillation treatment of tritium 3. Sea water purification with coagulant	株式会社 キネマ・エンタープライズ 福山正幸	②③	3	4
523	汚染水処理、港湾内の海水の浄化、地下水流入抑制の敷地管理 Contaminated water treatment, purification of seawater in the harbor, management measures to block groundwater from flowing into the site	ATAP LLP 先端技術応用事業推進 有限責任事業組合	②③⑤	3	4
524	汚染水の最終処理方法について(海洋投棄を可能ならしめる方法と技術的システム) Final treatment system of contaminated water (A method and technological system that allow ocean dumping)	麻生 一雄	②	2	2
525	汚染水貯蔵除染処理システム System for storing, decontaminating, and treating contaminated water	株式会社菊池製作所、特定非営利法人体育環境発明機構、オーガニック・システム株式会社	①④	1	2
526	Water Detritiation Plant	AMEC	②	2	2
527	Trailing Suction Hopper Dredge with integrated radioactive material sorting (ScanSort)	AMEC	③	3	4
528	Cast In-Situ Cutoff Wall Technologies and Alternate Measures	Westinghouse Electric Company, LLC/GZA GeoEnvironmental, Inc./Paul C. Rizzo Associates, Inc.	⑤	5	2
529	Groundwater Extraction Using Syphon Technology In Place of Mechanical/Electrical Pumping	Westinghouse Electric Company, LLC/GZA GeoEnvironmental, Inc.	⑤	5	4
530	Three Dimensional Groundwater Modeling and Visualization	Westinghouse Electric Company, LLC/GZA GeoEnvironmental, Inc./Paul C. Rizzo Associates, Inc.	⑥	6	1
531	海水からの放射性セシウム等の除去回収 Removal and collection of radioactive cesium, etc. from seawater	アタカ大機株式会社	③	3	3
532	汚染水検知用のヒューズ機能付き着色剤 Colorant with a fuse function for contaminated water detection	三精塗料工業株式会社	①②④	1	4
533	Removal of radioactive materials from the seawater in the harbor	James Fisher Nuclear Ltd	③	3	2
534	ボルト締めタンク撤去作業円滑化のための内面付着放射性物質の迅速除去 Immediate removal of radioactive materials attached inside the tanks for a smooth dismantling of bolted tanks	斎藤 恭一(千葉大学大学院 工学研究科 共生応用化学科 教授)	①	1	2
535	TREATMENT OF CONTAMINATED WATER BY ACTIVATED CARBON	TECNUBEL and DDR Consult in partnership	②	3	2
536	Komuso of Enlightenment 虚無僧悟りの	Neil WAKEMAN. NW Structural Consultants Ltd.	④⑤	4	4
537	Radionuclide Removal From Seawater	UOP LLC, A Honeywell Company	③	3	2
538	Xogen Electrochemical Removal of Cesium from seawater	Xogen Technologies Inc.	③	3	4
539	High Pressure Water Jetting of Contamination from Storage Tank Internals prior to Tank Cutting Activity	North West Projects Ltd	①③	1	1
540	リアルタイムストロンチウム90カウンター Realtime strontium 90 counter	河合 秀幸	⑥	6	3
541	汚染水貯蔵タンクエリアでの地下水流入・汚染水拡散抑制対策とトリチウム含有水の貯蔵・処理方法 Countermeasures against groundwater flow and contaminated water dispersion in the areas of contaminated water storage tanks, and methods of storage and treatment of tritium-contained water	中国電力株式会社	①②⑤	2	3
542	陸側遮水壁の早期設置に関する提案について Proposal on early installation of impermeable wall on the land side	中国電力株式会社	⑤	5	2
543	長期計画の在り方と、想定される緊急の人為的見えない問題点 Long-term plans and possible urgent issues that are man-made and invisible	酒井商店 酒井岩男	①②③ ④	7	4
544	Drainage Canal Passive Filtration System	The SimplyInfo.org Research Team	②	3	4
545	Port Filtration System	The SimplyInfo.org Research Team	③	3	4
546	Management of contaminated water inside the buildings	Bouygues Construction Services Nucléaires	④	4	2
547	Management measures to block groundwater from flowing into the site	Bouygues Construction Services Nucléaires	⑤	5	2
548	No form 2	No form 2	NA	7	4
549	No form 2	No form 2	NA	1	1
550	水は水の方で、汚水は洗浄水で阻止しよう。(1滴の汚染水も漏らさない、巨大な貯水構想) Use aquatic power for water, and prevent contaminated water by washing water (A vast storage scheme, not letting a single drop of contaminated water leak)	NGO『海洋の空(UTSURO)研究グループ 代表者 赤井一昭	①②⑤	1	4
551	大大口径鋼管を用いたモジュール増設型簡便鋼製タンク Module-growth-type simple steel tanks using large-diameter steel pipes	関電プラント株式会社 原子力事業本部	①	1	3
552	タンクからの漏れ水の視認性向上 Improvement of visibility for leaked water from tanks	関電プラント株式会社 原子力事業本部	①	1	3
553	ボルト締め型タンクの撤去作業の円滑化 Smooth dismantling operation of bolted tanks	関電プラント株式会社 原子力事業本部	①	1	3
554	汚染水対策工法(乙案) Construction method for countermeasures against contaminated water	シンシンプロック株式会社	①	1	2
555	二重殻(ダブルハル)構造式 メガフロート式 汚染水貯蔵施設 Megafloat-type storage facility for contaminated water having a double-shell structure	三菱重工業株式会社	①	1	2
556	汚染水貯蔵タンク 解体物の再利用 Storage tanks for contaminated water Reuse of dismantled materials	三菱重工業株式会社	①	1	2
557	漏れ検知付大型汚染水貯蔵施設(タンカーの活用) Large storage facility for contaminated water with a leakage detector (using a tanker)	三菱重工業株式会社	①	1	2
558	汚染水貯蔵タンク【漏れリスクの低減、短納期を実現】 Storage tanks for contaminated water [realizing the reduction of the risk of leaking and quick delivery]	三菱重工業株式会社、三菱重工鉄構造エンジニアリング(株)、株式会社宇徳、株式会社竹中土木	①	1	1
559	東電福一汚染水タンク漏れ水の検出手法の開発 Development of detection method for leaked water from contaminated water tanks at Fukushima Dai-ichi of	三菱重工業株式会社	①	1	2
560	プルシアンブルー担持微多孔質セラミックスを利用したCs除去技術 Cs removal technology using microporous foamed ceramics with Prussian blue	小松精練株式会社	③	3	3
561	地下水流入抑制にかかわる導水路の設置 Installation of headrace for preventing groundwater flow	日本陸水学会	⑤	5	4

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No.	Subject (Provisional English translation is attached below the original Japanese responses)	Submitted by	Area	Note1	Note2
562	スケールの異なる複数の地下水流動解析領域を利用したサイト周辺の地下水流動特性評価 Characterization of groundwater flow around the site using several groundwater flow analysis domains of various	株式会社 安藤・間 技術本部	⑥	6	1
563	可塑性モルタルによる隙間の充填 Filling gaps using plastic mortar	株式会社 安藤・間	④	4	2
564	遮水壁、フェーシングによる地下水流入抑制のための対応策 Countermeasures for preventing groundwater flow using impermeable wall and facing	株式会社 安藤・間	⑤	5	2
565	汚染水貯蔵設備における自己治癒コンクリート埋設型枠の適用 Applying self-cure concrete formwork in the storage facility for contaminated water	住友大阪セメント株式会社	①	1	2
566	放射性物質汚染水の処理方法 Treatment method for water contaminated with radioactive materials	住友大阪セメント株式会社	①②④ ⑤	4	4
567	海水中の放射性Cs、Sr除去技術 Removal technology of radioactive Cs and Sr in the seawater	住友大阪セメント株式会社	③	3	3
568	汚染水の最終処分地選定と運搬・投下 Selection of final disposal site for contaminated water, transportation, and dumping	酒井商店 酒井岩男	①②③ ④	7	4
569	NA	NA	②	3	4
570	DETECTION PAINT/GEL	CEA	①	1	3
571	地下水流動を把握するための水みち検層および透水試験技術 Bleeding channel logging and permeability test technologies to understand the groundwater flow	中野勝志((株)アサノ大成基礎エンジニアリング)	⑥	6	1
572	単孔法流速流向測定技術(電位差式測定法:LD-60型地下水流速流向計) Single-hole current velocity/direction measurement technology (PD-type measurement: LD-60-type groundwater current velocity/direction meter)	遠藤一郎((株)アサノ大成基礎エンジニアリング)	⑥	6	1
573	不燃性媒体を使用した放射汚染水からの放射性物質の液体抽出方法による汚染水および汚染吸着剤の減量 Volume reduction of contaminated water and absorbents by the extraction method of radioactive materials from radiation-tainted water using incombustible media	三井・デュボンフロロケミカル	①②③	2	4
574	汚染水貯蔵大規模地中タンクの構築 Building a large underground tank for storing contaminated water	鹿島建設株式会社	①	1	2
575	原子炉建屋深部への排水ポンプの設置方法と汚染水の回収方法 Methods of installation of drainage pumps deep into the reactor buildings and collection of contaminated water	鹿島建設株式会社	④	4	4
576	広域地下水解析・監視システムの整備 Establishment of wide-area groundwater analysis/monitoring system	鹿島建設株式会社	⑥	6	1
577	複数トンネル+遮水壁によるハイブリッド地下水流入抑制案 Blocking groundwater from flowing into the site with the combination of multiple tunnels and impermeable walls	株式会社 松本建築デザイン	⑤	5	4
578	汚染水貯蔵 Storage of contaminated water	濱村 哲之進	①	1	2
579	港湾内の海水の浄化 Purification of seawater in the harbor	濱村 哲之進	③	3	4
580	建屋内の汚染水管理 Management of contaminated water in the building	濱村 哲之進	④	4	4
581	地下水流入抑制の敷地管理 Management measures to block groundwater from flowing into the site	濱村 哲之進	⑤	5	2
582	ボーリング掘削におけるリモートコントロールシステムとコンピューターコントロールオートマチックドリリングシステム、掘削技術としてのロータリーパーカッションによる二重管掘削工法 Remote control system and computer-controlled automatic drilling system in boring, and the double-pipe drilling method based on rotary percussion as a drilling technology	鉱研工業株式会社 エンジニアリング本部 木山 隆二郎	④⑥	6	1
583	BSJ複合菌を使った汚染水(トリチウム)対策 Countermeasure against contaminated water (tritium) using Streptomyces Cellulomonas Pseudomonas Bacillus	㈱三輪環境 三輪 有子	②	2	4
584	BSJ複合菌を使った海水浄化 Seawater purification using Streptomyces Cellulomonas Pseudomonas Bacillus	㈱三輪環境 三輪 有子	③	3	4
585	BSJ複合菌を使った地盤改良 Ground improvement using Streptomyces Cellulomonas Pseudomonas Bacillus	㈱三輪環境 三輪 有子	④	4	2
586	完成型タンクの製作・運搬・据え付け Manufacturing/transportation/installation of complete tanks	清水建設(株)、(株)スチールハブ、 (株)トーヨートレーラー	①	1	3
587	汚染水貯留タンクの大容量化 Larger capacity for tanks accumulating contaminated water	清水建設株式会社	①	1	2
588	既存ボルト組立式タンクの除染作業の遠隔化 Remote decontamination operation for existing bolted tanks	清水建設株式会社	①	1	2
589	トリチウム水のハイドレート化による安定化技術 Stabilization technology by hydrating tritium water	清水建設(株)	②	2	3
590	建屋間止水(高線量作業エリア)における自動薬液注入機械の開発 Development of a machine that automatically injects chemicals for water stoppage between buildings (for high-dose work area)	清水建設株式会社、ライト工業株式会社	④	4	2
591	建屋間ギャップ部の止水方法 Method of water stoppage for gaps between buildings	清水建設株式会社	④	4	2
592	トレンチを利用した低線量下での地盤改良工法 Construction method for ground improvement under a low-dose environment using trench	清水建設株式会社	④	4	2
593	SMW・鋼管矢板壁による止水対策 Water stoppage measures using SMW/steel sheet pile wall	清水建設株式会社	④	4	2
594	セシウムとストロンチウムの分別モニタリング Separated monitoring for cesium and strontium	清水建設株式会社	④	6	3
595	3Dスキャナを用いた除染重機の遠隔作業の効率化 Efficient remote operation of heavy decontamination equipment using 3D scanner	清水建設株式会社	④	4	3
596	建屋内地下水経路空間のベントナイト・ペレット充てん止水方法 Method of water stoppage by filling bentonite/pellet for groundwater routes in the building	清水建設株式会社	④	4	2
597	強度・遮水性に優れた複合吹付工法によるフェーシング Facing by composite spraying method that excels at strength and impermeability	清水建設株式会社	⑤	5	2
598	フェーシングのために伐採した樹木の減容化 Volume reduction of trees logged for facing	清水建設株式会社	⑤	5	2
599	粘土壁による遮水壁の構築 Building of an impermeable clay wall	清水建設株式会社	⑤	5	2
600	薬液注入工法(二重管ダブルパッカー工法)による遮水壁 The impervious wall by a chemical grouting construction method (double pipe double packer construction method)	清水建設株式会社	⑤	5	2
601	エタノール・ベントナイトスラリー材料の遮水壁、グラウト適用 The impervious wall of ethanol bentonite slurry material, the Grout application	清水建設株式会社	⑤	5	2
602	既存ボルト組み立て式タンクのフェーシング Facing of existing bolted tanks	清水建設株式会社	⑤	5	2
603	溶接タンクの接続管部の漏水対策 Countermeasures against leakage from connection pipes of welded tanks	清水建設株式会社	⑤	1	2
604	モニタリングデータに基づく地下水流動評価手法の精緻化 Making the method of groundwater flow evaluation more detailed using monitoring data	清水建設株式会社	⑥	6	1
605	物質移行解析技術 Analysis technology for mass transport	清水建設株式会社	⑥	6	1
606	単孔式地下水水位および線量モニタリングシステム Single-hole monitoring system for groundwater level and dose	清水建設株式会社	⑥	6	3
607	地下水流入抑制の遮水壁 Impermeable wall to block groundwater flow	吉田 統三・小山 央二	⑤	5	4
608	濃縮汚染水からの塩分除去システム System of salt removal from concentrated contaminated water	三菱重工株式会社	②	7	3
609	減圧蒸留法によるトリチウム分離システム Tritium separation system by reduced-pressure distillation method	三菱重工株式会社	②	2	3

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7. Other than seven areas above

[Note 2] Experience of using the technology (Technology readiness levels explained)

1. Those that are explained as having accomplished practical applications in an environment similar to Fukushima Daiichi NPS.
2. Those that are explained as having accomplished practical applications in other fields.
3. Those that are explained as having established the principles, and accomplished certain validation at a research level.
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610	地下水中のH-3等迅速分析法 Quick analysis method for H-3, etc. in the groundwater	三菱重工株式会社	⑥	6	3
611	濠による遮水方法(ドライ・アイランド) Water shielding method using moat (Dry Island)	International Access Corporation (IAC) / 佐藤 暁	⑤	5	4
612	β線、あるいは、崩壊生成物によるアルミナ粉固定銀ナノ粒子顔料の変色感度の調査 Investigation on the sensitivity of discoloration of alumina powder mount silver nano particle paint by beta ray or decay products	富士電機株式会社	①	1	3
613	Acid-free electrochemical decontamination of the internal space of metal reservoirs with the additional application of the ultra-sound effect and immobilization of radioactive anode sludge in a geocement compound.	R&D Center for expertise of projects and technologies	①	1	3
614	Decontamination of large volumes of liquid radioactive waste from radioactive cesium and strontium by the sorption-membrane method with the solidification of the spent sorbent in a geocement compound "in situ" into the specially prepared repositories of trench type.	R&D Center for expertise of projects and technologies	②	3	3
615	現場設置型トリチウム分析装置 (Field deployable tritium analysis system) の開発 Development of Field deployable tritium analysis system	一般財団法人九州環境管理協会	⑥	6	3
616	クラスレート・ハイドレートに生じる同位体効果を用いた重水及びトリチウム水の濃縮・分離法 Method of concentration/separation of heavy water and tritium water using isotope effects caused by clathrate	一般財団法人電力中央研究所・鹿島建設株式会社の共同提案	②	2	3
617	地下水流入抑制の敷地管理分野における地下水コントロール技術 Technology to control groundwater as part of management measures to block groundwater flow	株式会社ナガオカ	⑤	5	2
618	No form 2	No form 2	NA	3	4
619	ステンレス製簡単組立汚染水タンク Stainless contaminated water tank that is easily constructed	稲生 勇	①	1	2
620	効率的かつ長期信頼性に優れた新型タンクを短納期にて提供する技術 Technology of quick delivery of a new tank that is efficient and highly reliable for a long term	JFEエンジニアリング(株)/ 鹿島建設(株)	①	1	2
621	Fixed/Transportable wide area β surface contamination monitor	CANBERRA	①	1	3
622	Mobile wide-area β surface contamination monitor	CANBERRA	①	1	3
623	On-Line Water monitoring system for Sr90 monitoring	CANBERRA	①	1	1
624	On-Line Water monitoring system for Sr90 monitoring	CANBERRA	⑥	6	1
625	Measuring Techniques for tritium and strontium analysis	CANBERRA	⑥	6	1
626	建屋内止水に用いるコンクリート材料に関する助言 Advices on concrete materials used for water stoppage inside the building	公益社団法人日本コンクリート工学会、放射能物質の封じ込めとコンクリートの安全利用調査研究委員会、発電所からの漏えい防止WG1 委員長: 橋高義典(首都大学東京教授) WG1主査: 今本啓一(東京理科大学准教授)	④	4	2
627	遮水壁に用いるコンクリートに関する助言 Advices on concrete used for impermeable walls	公益社団法人日本コンクリート工学会、放射能物質の封じ込めとコンクリートの安全利用調査研究委員会、発電所からの漏えい防止WG1 委員長: 橋高義典(首都大学東京教授) WG2主査: 今本啓一(東京理科大学准教授)	⑤	5	2
628	1-A案 地磁気(N・S)による隕石動力の活用案 Plan 1-A Use of meteor power by earth magnetism (N/S)	酒井商店 酒井岩男	①②③ ④	3	4
629	汚染水中のトリチウム水素(TH)を減圧室で水から分離し除染する Separation and decontamination of tritium hydrogen (TH) in the contaminated water in decompression chamber	日本大学工学部非常勤講師 柳原隆司	②	2	4
630	組み立て式タンクの改良方法 Method to improve bolted tanks	三宅技術士事務所 三宅勇次	①	1	4
631	ボルト締め型タンクの撤去作業の円滑化 Smooth dismantling operation of bolted tanks	(株)神戸製鋼所 エンジニアリング事業部門 原子力・CWD本部	①	1	3
632	港湾内(1~4号機取水路前エリア)の海水の浄化 Purification of seawater in the harbor (the area in front of inlet channels of reactors no.1 to 4)	(株)神戸製鋼所 エンジニアリング事業部門 原子力・CWD本部	③	3	3
633	ナノファイバー吸着材・フィルター、膜蒸留システム Nano fiber absorbent/filter, Membrane distillation system	パナソニック株式会社、東京工業大学、株式会社ゼタ(東工大ベンチャー)	②③	3	3
634	CIM(Construction Information Modeling)を用いた汚染状況の見える化による情報共有 Information dissemination by visualizing the state of contamination using CIM (Construction Information Modeling)	株式会社大林組	⑥	6	1
635	高分子ポリマーを用いた浸透固着法による放射性汚染水の除染処理 Decontamination treatment of radiation-tainted water by permeation fixation method using high-molecular polymer	大谷浩樹	②	3	3
636	2-A案 地殻プレートの沈み込み『力』を利用する案 Plan 2-A Use of sinking "force" of crustal plate	酒井商店 酒井岩男	①②③ ④	3	4
637	人工ゼオライトの壁 Wall of artificial zeolite	逸見彰男	⑤	5	2
638	CHARACTERIZATION OF MATERIALS BY REMOTE LIBS ANALYZER 遠隔レーザー誘起破壊分光法(LIBS)を用いた材料の特徴評価	AREVA/CEA	⑥	1	2
639	Solutions for sequestration or treatment of Sr in groundwater	AREVA, SUEZ ENVIRONNEMENT and NUOVA	⑤	5	2
640	REMOVAL OF CESIUM AND STRONTIUM BY CO-PRECIPITATION PROCESS 凝集沈殿に因るセシウム及びストロンチウムの除去	AREVA	③	3	1
641	CESIUM REMOVAL USING NYMPHEA TECHNOLOGY "NYMPHEA"水中イオン交換体によるセシウムの除去	AREVA / CEA / ATOX	③	3	2
642	CENTRIFUGATION OF SEDIMENT FROM THE SEAWATER IN THE HARBOR 港湾内の海水と汚泥の遠心分離による除去	AREVA/ATOX	③	3	4
643	BEST PRACTICABLE ENVIRONMENTAL OPTION FOR TRITIUM MANAGEMENT トリチウム処理の実施可能な最高の環境問題の解決策の提案	AREVA	②	2	2
644	Tanks steel decontamination and recycling in melting furnace 溶融によるタンクの除染及び鋼鉄のリサイクル	AREVA	①	1	1
645	CHARACTERIZATION OF MATERIALS BY REMOTE LIBS ANALYZER 遠隔レーザー誘起破壊分光法(LIBS)を用いた材料の特徴評価	AREVA/CEA	①	1	2
646	水-水素同位体交換法によるトリチウム分離 Tritium separation by water-hydrogen isotope exchange method	日立GEニュークリア・エナジー(株)、三菱重工業(株)、東京工業大学、名古屋大学、九州大学、田中貴金属工業(株)、日揮ユニバーサル(株)	②	2	2
647	地下貯水槽及び大型タンクによる汚染水貯蔵 Storage of contaminated water using underground storages and large tanks	地盤工学会 (原案作成 小澤良太)	①	1	2
648	連続地中壁による地下水流入抑制の敷地管理 Management measures to block groundwater from flowing into the site using continuous underground wall	地盤工学会 (原案作成 小澤良太)	⑤	5	2
649	港湾入口にシルトフェンス(または鋼鉄製水門)を設ける件、及びタンクの代わりにプールを設けて汚染水を貯水する件 Installation of silt fence (or steel floodgate) at the harbor entrance, and storage of contaminated water in a pool instead of tanks	徳岡 滋 (株)インスピレーション・ワールド代表取締役	①③	3	4
650	Concept for Enhanced Mass Transfer and Facilitated Handling of Adsorptive Processes	Nordic ChemQuest AB	②③④	3	4
651	缶へのビール充填技術を利用した汚染水の貯蔵 Storage of contaminated water using the technology of pouring beer into a can	赤尾 修二	②	1	2
652	福島原子力発電所汚染水問題解決に関する基本的方針 Basic policy on solving contaminated water issues at Fukushima NPS	(独)日本原子力研究開発機構 西村昭彦	②④⑤ ⑥	4	2
653	No form 2	No form 2	NA	5	1
654	Understanding the Groundwater Flow	Hyder Consulting (UK) Limited (Sarah Dack)	⑥	6	1
655	広域での地質・地下水調査と解析 Wide-area geological/groundwater investigation and analysis	一般社団法人全国地質調査業協会連合会 環境省地下水調査WG	⑥	6	1
656	Encapsulation of Resins, Residues, Contaminated Soils, Sludge, etc. Arising from Treatment of Contaminated	AMEC	②③④	3	2
657	Overland Radiation Scanning & Mapping System (Orion ScanPlot SM)	AMEC	②	7	2
658	Treatment of contaminated water by Exergy Evaporators	Swedish Exergy AB	②	7	2
659	Understanding the groundwater flow Solutions and methods for quick and reliable determination of strontium and tritium in water	Eichrom Laboratories	⑥	6	1

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660	Radioactive soil assay with automated segregation and sorting (Orion ScanSort SM)	AMEC	②	2	2
661	NA	British Geological Survey	⑤⑥	6	1
662	Leak Sealing	AMEC	④⑤	4	2
663	貯水タンクの遮水性基礎工 Basic construction for the water stoppage capability of water storage tanks	公益財団法人 土木学会、 公益財団法人地盤工学会	①	1	2
664	タンク止水性能確保のためのダブルバリアー化対策 Double-barrier measures for securing the water stoppage performance of tanks	公益財団法人 土木学会	①	1	4
665	汚染水配水管路の簡易地中埋設 Simple burial of drainage pipeline of contaminated water into the ground	公益財団法人 土木学会	①	1	3
666	撤退した既設地下貯水槽の改良工 Improvement construction for existing underground tanks that have been dismantled	公益財団法人 土木学会、 公益財団法人地盤工学会	①	1	2
667	地下貯水槽とタンクを組み合わせた運用 Operation combining underground aquatic reservoir with tanks	公益財団法人 土木学会	①	1	3
668	防波堤で囲まれた港湾部を利用した汚染水の貯留方法 Method of accumulating contaminated water using the area surrounded by breakwaters in the harbor	公益財団法人 土木学会	①	1	4
669	タンクの耐震安全性の確認 Verification of earthquake-resistance safety of tanks	公益財団法人 土木学会	①	1	2
670	土砂NATM工法による地下遮水壁・フェーシング等の多重防護設備の構築 Building a multi-protection facility composed of underground impermeable wall, facing, etc. by the sediment NATM	公益財団法人 土木学会	④	4	2
671	シールド、TBM 技術を活用した高い空間放射線量環境での作業改善方法 Method of operation improvement for the environment of high air radiation dose using shield and TBM technology	公益財団法人 土木学会	④	4	2
672	凍結工法・粘土系遮水工・地下水くみ上げ工を組み合わせた重層工 Multiple construction method combined with freezing method, clay impermeable method and groundwater pumping	公益財団法人 土木学会、 公益財団法人地盤工学会	④⑤	4	2
673	撤去が容易な遮水壁による時間差多重防御の提案 Proposal on multiple protection by time difference using an impermeable wall that can be easily dismantled	公益財団法人 土木学会	⑤	5	2
674	多数地下掘削工による広域遮水層の施工 Construction for a wide-area impermeable layer by multiple underground drillings	公益財団法人 土木学会	⑤	4	2
675	ポリウレタン・高分子吸収材・吸水性粘土材料の段丘堆積物への巻出し混合による広域雨水浸透抑止技術 Technology of preventing rainwater from permeating for a wide area using polyurethane/high-molecular absorbents and water-absorbing clay materials for terrace deposits	公益財団法人 土木学会	⑤	5	2
676	原子力施設の地下を遮水壁で大きく取り囲む閉鎖領域の形成 Formation of a closed area that widely surrounds the underground of nuclear facilities with impermeable walls	公益財団法人 土木学会	⑤	5	2
677	地下水動態把握のための総合調査モニタリング Total investigative monitoring for understanding the groundwater flow	公益財団法人 土木学会	⑥	6	1
678	グリッド型観測孔配置と多層揚水試験による地下水流動層特性の調査 Investigation on the properties of groundwater flow layer based on grid-type observation holes and multi-level	公益財団法人 土木学会	⑥	6	1
679	港湾内外の核種の高精度モニタリングによる漏洩源および漏洩量の把握 Identification of leakage source and leakage volume based on a high-precision monitoring of nuclides in and outside the harbor	公益財団法人 土木学会	NA	3	4
680	福島第一原発サイト汚染状況可視化エキスパートシステム An expert system that visualizes the state of contamination at Fukushima Daiichi site	公益財団法人 土木学会	NA	6	1
681	海側遮水壁の二重化 Double impermeable walls at the sea side	公益財団法人 土木学会	NA	5	2
682	安価で高減容化可能な放射性物質の除去技術 Removal technology of radioactive materials that can considerably reduce the volume at low cost	JNC株式会社	③	3	3
683	Ground Freezing Capabilities	CDM Smith Consult GmbH	⑤⑥	5	2
684	海水中におけるセシウム、ストロンチウムの低コスト処理 Low-cost treatment of cesium and strontium in the seawater	(株)ビー・インターナショナル Zeolite Australia Pty., Ltd.	③	3	3
685	減圧脱水乾燥技術による汚染水処理 Treatment of contaminated water by the technology of decompressive dewatering/desiccation	株式会社ナガオカ	②	2	3
686	No form 2	No form 2	NA	3	3
687	汚染水漏洩の防止(接続管) Prevention of contaminated water leakage (connected pipes)	富士電機株式会社/ 富士ファーマナイト株式会社	①	1	2
688	汚染水漏洩の防止(接続管) Prevention of contaminated water leakage (connected pipes)	富士電機株式会社/ 富士ファーマナイト株式会社	①	1	2
689	汚染水貯蔵タンクからの汚染水漏洩の防止 Prevention of leakages of contaminated water from the storage tanks	富士電機株式会社/ 富士ファーマナイト株式会社	①	1	2
690	溶接型タンクと汚染水漏洩の監視・補修 Monitoring and repair for welded tanks and leakages of contaminates water	富士電機株式会社/ 富士ファーマナイト株式会社	①	1	2
691	耐震性と耐久性に優れた大型PC タンクによる汚染水貯蔵 Storage of contaminated water using large PC tanks that are highly quake-resistant and durable	株式会社安部日鋼工業	①	1	2
692	粘弾性ダンパーによる貯蔵タンクの耐震性向上 Improvement of quake resistance of storage tanks using viscoelastic damper	住友スリーエム株式会社	①	1	2
693	粘着材・発泡樹脂によるフランジ部位の止水 Water stoppage on flange parts using adhesive materials and resin foam	住友スリーエム株式会社	①	1	2
694	Cs,Sr吸着フィルターを用いるシルトフェンス Silt fence using Cs/Sr absorption filter	株式会社アトックス/AREVA	③	3	4
695	Cs,Sr吸着フィルターを用いる港湾内汚染水の浄化技術 Purification technology for contaminated water in the harbor using Cs/Sr absorption filter	株式会社アトックス/AREVA	③	3	4
696	タンク内(壁面、床面など)の遠隔除染 Remote decontamination inside the tanks (wall surface, floor surface, etc.)	株式会社アトックス/AREVA	①	1	1
697	洋上汚染水貯留用浮体 Floating body for the marine storage of contaminated water	株式会社アトックス/AREVA	①	1	3
698	溶接型タンクの制動X線に対する遮蔽性能評価システム Evaluation system for the shielding of Bremsstrahlung X-ray for welded tanks	株式会社アトックス/AREVA	①	1	1
699	プレキャスト・プレストレスト・コンクリートによる汚染水タンクリプレースの提案 Proposal on the replacement of contaminated water tanks using precast/prestressed concrete	鹿島建設(株)・(株)ビーエス三菱・ ドービー建設工業(株)	①	1	2
700	NA	NA	①②⑤	7	4
701	真空加圧脱水装置による放射性物質の減容化と安定化 同時処理の提案 Volume reduction and stabilization of radioactive materials using vacuum pressure dewatering equipment Proposal on concurrent treatment	前田建設工業株式会社	②	3	4
702	複合遮水構造の鋼製連続壁による汚染水地下貯蔵槽の提案 Proposal on underground storage tanks of contaminated water using a steel continuous wall of composite waterproof structure	前田建設工業株式会社	①	1	2
703	ゼオライトコンクリートパネルを用いた汚染拡大防止壁 Wall to prevent contamination from spreading using a zeolite concrete panel	前田建設工業株式会社	③	3	3
704	海拔35mエリアに遮水壁を設置する技術に関する提案 Proposal on the technology of installing an impermeable wall in the area of 35m above sea level	前田建設工業株式会社	⑤	5	2
705	山側法面に遮水壁を設置する技術に関する提案 Proposal on the technology of installing an impermeable wall on the mountain-side slopes	前田建設工業株式会社	⑤	5	2
706	水中超音波溶着による遮水シートを用いた複合遮水構造の提案 Proposal on the composite waterproof structure using a water shielding sheet based on underwater ultrasonic	前田建設工業株式会社	⑤	5	2
707	吸着剤含有ゲル薄膜塗布捕集薬剤による土壌中放射性ストロンチウムの捕集 Capturing of radioactive strontium in the soil by coating with thin gel film containing absorbents	前田建設工業株式会社、 国立大学法人東京工業大学	⑤	5	3
708	ベントナイト混合土を用いたフェーシング Facing using bentonite composite soil	前田建設工業株式会社	⑤	5	2
709	自在ボーリングを用いた地中内線量の見える化 Visualization of underground dose using flexible boring	前田建設工業株式会社	⑥	6	2

[Note 1] Most relevant areas of technologies requested

1. Accumulation of contaminated water
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4. Management of contaminated water inside the buildings
5. Management measures to block groundwater from flowing into the site
6. Understanding the groundwater flow
7. Other than seven areas above

[Note 2] Experience of using the technology (Technology readiness levels explained)

1. Those that are explained as having accomplished practical applications in an environment similar to Fukushima Daiichi NPS.
2. Those that are explained as having accomplished practical applications in other fields.
3. Those that are explained as having established the principles, and accomplished certain validation at a research level.
4. Those that are explained as conceptual proposals, etc.

NA : Not available

No.	Subject (Provisional English translation is attached below the original Japanese responses)	Submitted by	Area	Note1	Note2
710	既存調査技術の無人化および線量計測機能の追加 Make the existing investigation technology unmanned. Addition of dose measurement function	前田建設工業株式会社	⑥	6	2
711	ゼオライトコンクリートパネルを用いた原位置浄化システム In-situ purification system using zeolite concrete panel	前田建設工業株式会社	③	3	3
712	吸着剤含有親水性高分子ゲルによるCs、Sr除去剤 Cs, Sr adsorbents with hydrophilic high molecular gel containing adsorbents	前田建設工業株式会社、 国立大学法人東京工業大学	③	3	4
713	無人化ボーリングマシンによる省力化止水改良技術 Technology of water stoppage improvement with less energy using unmanned boring machine	前田建設工業株式会社	④	4	3
714	Off-line Liquid Radioactive Waste Processing System	KHNP-CRI	③	3	3
715	タンクの堰内及び側溝への吸着材付設による汚染拡大の防止 Prevention of contamination spread by attaching adsorbents inside the tank weir and to the side ditch	斎藤 恭一(千葉大学大学院 工学研究科 共生応用化学科 教授)	①	1	3
716	トリチウム等の放射性物質の分離 Separation of radioactive materials such as tritium, etc.	HEC. JAPAN (株)	②	2	2
717	LABORATORY ANALYSIS OF WATER QUALITY	AREVA/CEA	⑥	6	1
718	SYSTEM OF REAL TIME DATA PROCESSING FOR MONITORING THE LEVEL OF ACTIVITY IN THE BORE HOLES	AREVA NC and CANBERRA + GEOVARIANCES	⑥	6	2
719	ORCAを使った汚染水一時貯蓄用タンクのご提案 Proposal on temporary storage tanks for contaminated water using ORCA	クレシア物流(株)商事部 河部健二 (日本製紙クレシア(株)直需営業部業務委託)	①	1	2
720	汚染水のリグニンによる着色のご提案 Proposal on coloring contaminated water with lignin	クレシア物流(株)商事部 河部健二 (日本製紙クレシア(株)直需営業部業務委託)	①	1	2
721	スラリー利用による損傷部塞ぎ等止水法及び界面動電現象利用による地盤改良工法 Water stoppage of damaged portions using slurry, and ground improvement method using electrokinetics	上原 正勝	④	4	4
722	既設ボルト接合型タンクの健全化(溶接構造化)について Healthier bolted tanks (with welded structure)	西浦 功	①	1	2
723	Development of automated sensor for 90Sr/90Y determination in surface and groundwater based on Cherenkov	Stepan Kalmykov, Lomonosov MSU	⑤	6	2
724	土壌に埋設した布状吸着材を使う放射性ストロンチウム除去技術 Removal technology for radioactive strontium using cloth-type adsorbents buried in the soil	斎藤 恭一(千葉大学大学院 工学研究科 共生応用化学科 教授)	⑤	5	2
725	ON LINE MONITORING SYSTEM AND DATA PROCESSING IN REAL TIME FOR DETECTION OF LEAKS WITH A MOBILE WIDE-AREA A / B SURFACE CONTAMINATION MONITOR	AREVA	①	1	3
726	地下水流入抑制の敷地管理、汚染水貯蔵タンク用地の地盤・堰強化汚染水貯蔵タンク敷地地盤沈下対策、堰のかさ上げ、防水強化策 Management measures to block groundwater from flowing into the site, Reinforcement of ground/weir of the site of storage tanks, Countermeasure against land subsidence at the site of storage tanks, Increasing the size of weirs, Waterproof enhancement measures	川人 敦夫	①⑤	5	2
727	Water treatment and Tritium Removal in Fukushima	Radiy OAO / NPP Ralph T. Niemeyer	②③	2	4
728	立坑掘削及び水平ボーリングによる集水・遮水技術 Technologies of water collection and water shielding by shaft drilling and horizontal boring	鈴木 弘明 (日本工営株式会社 中央研究所)	⑤	5	2
729	Use of Strippable Paint to tie down contamination and to aid later decontamination	Spraylat International Ltd	①	1	1
730	Geopolymer for conditioning of secondary waste from the wastewater treatment at Fukushima Dai-ichi	Forschungszentrum Juelich GmbH, Institute IEK-6 (and Westinghouse Electric Germany GmbH)	②	2	2
731	Coupled modeling to support ground freezing strategy, and development of longer-term groundwater management	Quintessa Ltd	⑤⑥	6	1
732	Evidence Support Logic and BowTie tools for supporting and communicating decisions about technology deployment and risk mitigation approaches in the face of uncertainty	Quintessa Ltd	④⑤⑥	2	2
733	Use of systems modeling approaches to understand radiological risks from Fukushima site in perspective	Quintessa Ltd	①②③	6	1
734	CABARET reactive transport software for modeling barrier behavior for planning barrier implementation and mitigation measures	Quintessa Ltd	④⑤	6	1
735	Connect Flow groundwater flow and transport computer programme and expertise in its application to the management of contaminated groundwater on nuclear sites	AMEC	⑥	6	1
736	Management measures to block groundwater from flowing into the site	Geocomp Corporation in collaboration with Moretrench America and Mueser Rutledge Consulting Engineers	⑤	5	2
737	Understanding the groundwater flow	Geocomp Corporation in collaboration with Moretrench America and Mueser Rutledge Consulting Engineers	⑥	6	1
738	(1)ANABET (2)Tritium Concentration Technologies (CECE) (3)Seeded Filtration (4)Selective Ion Exchange, Resin regeneration (5)Expertise/Consultancy/Advise on Groundwater Barriers/Channelling Options (6)Expert Hydrological and Hydro-geological Modeling and Advice	NA	①②③ ④⑤⑥	2	2
739	Conceptual Model Development	UK National Nuclear Laboratory	⑤⑥	6	1
740	Contaminant migration modeling and risk assessment	UK National Nuclear Laboratory	⑤⑥	6	1
741	Techniques for estimating contaminated land and groundwater volumes	UK National Nuclear Laboratory	⑤⑥	6	1
742	Hydrogeological studies	UK National Nuclear Laboratory	⑤⑥	6	1
743	Use of in-situ monitoring systems for long term groundwater monitoring, base line studies and contaminant plume migration	UK National Nuclear Laboratory	④⑥	6	1
744	Monitored natural attenuation	UK National Nuclear Laboratory	⑤	6	1
745	Leak Detection and Monitoring Technologies	UK National Nuclear Laboratory	⑥	6	1
746	Reactive barriers	UK National Nuclear Laboratory	③⑤	5	2
747	Freeze control and grabbing of harbor sediment and building water/debris	UK National Nuclear Laboratory	③④	3	3
748	Application of options assessment to support stakeholder communications	UK National Nuclear Laboratory	①②③ ④⑤	2	2
749	Rapid analysis technology and capability	UK National Nuclear Laboratory	④⑤⑥	6	1
750	Process intensified chemical precipitation	UK National Nuclear Laboratory	③	3	2
751	In-ground immobilisation measures for Strontium	UK National Nuclear Laboratory	⑤	5	2
752	Technologies for leak repair	UK National Nuclear Laboratory	④	4	2
753	Design of materials for rapid, selective removal of Sr and Cs from waters	UK National Nuclear Laboratory	③⑤	3	4
754	Standoff monitoring	UK National Nuclear Laboratory	①②	2	3
755	Geospatial Database/trending/handling large data sets	UK National Nuclear Laboratory	⑥	6	1
756	Electrochemical treatment of spent decontaminant solutions	UK National Nuclear Laboratory	①	1	3
757	Hot Isostatic Pressing of Inorganic Ion Exchange Compounds	UK National Nuclear Laboratory	①	3	3
758	Process modeling to assess tritium removal processes and feasibility	UK National Nuclear Laboratory	②	2	2
759	Process design and optimization for removal of activity from Harbor	UK National Nuclear Laboratory	③	3	4
760	Development of a tool to understand activity transport through building structures, for design and optimization of processes	NA	④	5	4
761	Use of Dounreay high volume flowrate water filter and ion exchange cartridge design with associated flaking	eco-atomic consultants ltd	②	7	2
762	Make a justification for discharge to sea of water in which Tritium is the main remaining radioactive contaminant	eco-atomic consultants ltd	②	2	2
763	Use 'Design for Decommissioning' Approaches	eco-atomic consultants ltd	②	7	1
764	Carry out combined physical, chemical and radiometric inventory assessment for the contamination of the harbor waters and materials in contact with the harbor water	eco-atomic consultants ltd	③	3	4
765	Use a tunnel (rather than boreholes) to drain the porous ground upslope of the reactor buildings	eco-atomic consultants ltd	③	5	2
766	Accumulation of contaminated water	EPRI	①	1	4
767	Understanding the groundwater flow	EPRI	⑥	6	1
768	Removal of radioactive materials from the seawater in the harbor	EPRI	③	3	4
769	Treatment of contaminated water	EPRI	②	2	2
770	土質遮水材料を利用した汚染水の港湾区域外への拡散防止と循環式水質浄化装置の提案 Proposal on the prevention of contaminated water from spreading out of the port area, and a circulation-type water purification system using soil waterproof materials	五洋建設株式会社	③	3	4
771	No form 2	No form 2	NA	1	2
772	建屋内の汚染水管理の除染地確保の提案 PowerPlus System Proposal on securing decontamination zone for contaminated water management in the buildings, PowerPlus	東田商工株式会社 東 昌伸	④	2	3

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773	港湾内の海水浄化フィルターシステムの提案 Rad-Cap System Proposal on purification system for seawater in harbor, Rad-Cap System	東田商工株式会社 東 昌伸	③	3	3
774	Conditioning of residues from water treatment	NUKEM Technologies GmbH, in cooperation with	②	3	3
775	Removal of radioactive materials from the sea water in the harbor	NUKEM Technologies GmbH, in cooperation with	③	3	2
776	敷地山側からの地下水量を低減する提案 3案: 遮水鋼矢板連続壁による地下水流入抑制 Proposal for groundwater flow reduction from mountainside #3: Blocking groundwater flow by impervious steel sheet pile continuous wall	中部電力株式会社	⑤	5	2
777	不燃性媒体を使用する作業着のドライクリーニングによる洗浄水減量 Reduction on the volume of washing water for work clothes by dry-cleaning them using the incombustible media	三井・デュボンフロロケミカル	①②	7	2
778	不燃性媒体を凍土形成における配管腐食のないチラー用冷却媒体としての活用 Using of the incombustible media as chilling cooling media that avoid pipe corrosion in forming a frozen soil	三井・デュボンフロロケミカル	⑤	7	2
779	不燃性媒体を使用する核燃料炉の沸騰冷却による減水化 Using of incombustible media for ebullient cooling of nuclear fuel reactors for water volume reduction	三井・デュボンフロロケミカル	②	7	4
780	株式会社 アース・リ・ピュア EARTH RE PURE	上原 郁雄	②	2	4