

Block I General details	
1	<p>Location of the PCB disposal facility: Name of Facility: JSC "Severstal" City: Cherepovets Country: Russia <i>(Provide address information in Block IV)</i></p>
2	<p>Licence / authorization:</p> <p>Is this facility licensed or authorized to handle PCBs? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If "Yes": (i) Nature of license / authorization: (ii) Please submit the licensing history <i>(please attach to this questionnaire)</i></p> <p>Issuing authority <i>(name)</i>: <input checked="" type="checkbox"/> National <input type="checkbox"/> Local or <input type="checkbox"/> Independent</p>
3	<p>Please provide information on storage at the facility including:</p> <p>Capacity for the various PCB waste and equipment types:</p> <p>Method: 490 tons of Sovtol in transformers In operating transformers</p> <p>Holding time: More than 20 years</p>
4	<p>Worker protection <i>(Please summarize protective measures applied during treatment of PCB wastes)</i></p> <p>Respirator</p> <p>Does the facility have an accident book? <input type="checkbox"/> Yes <input type="checkbox"/> No Most frequent cause(s) of incidents involving PCBs:</p> <p>Sovtol leakage</p>

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Opinion box - PCB Management issues *(Please describe briefly)*

What are your major concerns?

Problem concerning safe operation of the incinerating unit

Can you identify research and development needs in PCB management that would be beneficial for your region and waste managers worldwide?

Reduction of the dioxin emission

Block II Types of PCB wastes

Part A Treatment of PCB containing equipment/material

Part A1: Metallic Parts

A1.1

Types of metallic PCB equipment/material treated:

Limitation on waste accepted
(please specify, if appropriate)

Concentration
(specify the unit)

Quantity
(specify the unit)

unit:

min

max

unit:

Equipment containing 100 % PCB

Equipment containing mineral oil contaminated by PCB

Others:

Please specify any other limitation on waste accepted:

A1.2

Presentation of metallic equipment/material

In what form must the metallic PCB equipment/material be presented:

Drums

Other packaging:

Other constraints:

A1.3

Treatment of metallic PCB equipment/material

Immediate destruction of metallic equipment/material containing PCB? Yes No

If 'Yes', please specify the applied technology in Part III

Extraction of PCB? Yes No

If 'Yes':

- please specify the applied technology in Part III
- Is the decontaminated metallic equipment/material subjected to reuse/recycling? Yes No

If 'Yes', please specify in **Block II Part C** (Reuse and recycling)

Part A: Treatment of PCB containing equipment/material

Part A2: Non-metallic Parts

A2.1	Types of non-metallic PCB equipment/material treated:	Limitation on waste accepted <i>(please specify, if appropriate)</i>		
		Concentration <i>(specify the unit)</i>		Quantity <i>(specify the unit)</i>
		unit:		unit:
		min	max	
	<input type="checkbox"/> PCB-containing materials (clothes, cables, etc.)			
	<input type="checkbox"/> PCB-contaminated residues, sludges			
	<input type="checkbox"/> PCB-contaminated soils and sediments			
	<input type="checkbox"/> Packaged / drummed waste			
	<input type="checkbox"/> Others:			
<p><i>Please specify any other limitation on waste accepted:</i></p>				
A2.2	<p>Presentation of non-metallic equipment/material</p> <p>In what form must the non-metallic PCB equipment/material be presented:</p> <p><input type="checkbox"/> Drums</p> <p><input type="checkbox"/> Other packaging:</p> <p><input type="checkbox"/> Other constraints:</p>			

A2.3

Treatment of metallic PCB equipment/material

Immediate destruction of non-metallic equipment/material containing PCB? Yes No

If 'Yes', please specify the applied technology in Part III

Extraction of PCB? Yes No

If 'Yes':

- please specify the applied technology in Part III
- Is the decontaminated non-metallic equipment/material subjected to reuse/recycling? Yes No

If 'Yes', please specify in **Block II Part C** (Reuse and recycling)

Part B: Treatment of PCB oils and PCB waste oils

B1	Types of PCB oils and PCB waste oils treated:	Limitation on waste accepted <i>(please specify, if appropriate)</i>		
		Concentration <i>(specify the unit)</i>		Quantity <i>(specify the unit)</i>
		unit:		
		min	max	unit:
	<input checked="" type="checkbox"/> 100% PCB oils			
	<input checked="" type="checkbox"/> Mineral oils contaminated by PCB			
	<input checked="" type="checkbox"/> Waste oils contaminated by PCB			
	<input checked="" type="checkbox"/> Other: <i>Working solutions used for ringing after usage</i>			
	<p><i>Please specify any other limitation on waste accepted:</i></p> <p><i>Availability of large solid particles in fluids, which are to be filtrated</i></p>			
B2	<p>Presentation of PCB oil and PCB waste oil</p> <p>In what form must the PCB oil and PCB waste oil be presented:</p> <p><input type="checkbox"/> Drums</p> <p><input checked="" type="checkbox"/> Other packaging: <i>PCB-containing Sovtol is stored in transformers treated. Without preliminary emptying Sovtol is fed directly into the incinerating unit.</i></p> <p><input type="checkbox"/> Other constraints:</p>			
B3	<p>Treatment of PCB oils and PCB waste oils</p> <p>Please specify the applied technology for the destruction of PCB oils and PCB waste oils in Part III</p>			

Part C.: Reuse & Recycling of decontaminated PCB equipment/material

<p>C1</p>	<p>Types decontaminated PCB equipment/material treated:</p>	<p>Limitation on waste accepted <i>(please specify, if appropriate)</i></p> <p>Quantity <i>(specify the unit)</i></p> <p>unit:</p>
	<p><input type="checkbox"/> Transformers</p>	
	<p><input type="checkbox"/> Capacitors</p>	
	<p><input type="checkbox"/> Materials (clothes, cables, etc.)</p>	
	<p><input type="checkbox"/> Residues, sludges</p>	
	<p><input type="checkbox"/> Soils and sediments</p>	
	<p><input type="checkbox"/> Other:</p>	
	<p><i>Please specify any other limitation on waste accepted:</i></p>	
<p>C2</p>	<p>Presentation of decontaminated PCB equipment/material</p> <p>In what form must the decontaminated PCB equipment/material be presented:</p> <p><input type="checkbox"/> Drums</p> <p><input type="checkbox"/> Other packaging:</p> <p><input type="checkbox"/> Other constraints:</p>	

C3

Treatment of decontaminated PCB equipment/material

Reuse and Recycling of decontaminated PCB equipment/material? Yes No
If 'Yes', please specify the applied technology in Part III

Is the decontaminated PCB equipment/material disposed of? Yes No

If 'Yes', please specify:

Transport to the disposal site? Yes No

If 'Yes':

- International transport
- National transport

Location of disposal site:

Please provide a short description of disposal site:

Block III Detailed information on applied technologies		
1	The following description refers to Block II, Part:	Type of PCB waste or decontaminated equipment/material:
	<input type="checkbox"/> A1 (Treatment of metallic PCB equipment/material)	
	<input type="checkbox"/> A2 (Treatment of non-metallic PCB equipment/material)	
	<input checked="" type="checkbox"/> B (Treatment of PCB oil and PCB waste oil)	Sovtol and other similar fluids
	<input type="checkbox"/> C (Reuse and recycling of decontaminated PCB equipment/material)	
2	<p>Applied technologies (Please specify the technology used for disposal):</p> <p><input type="checkbox"/> Pyrolysis / gasifiers <input type="checkbox"/> Gas Phase Chemical Reduction (GPCR) <input type="checkbox"/> Base Catalysed Decomposition (BCD) <input type="checkbox"/> Sodium Reduction <input type="checkbox"/> Super-Critical Water Oxidation (SCWO) <input type="checkbox"/> Plasma Arc <input type="checkbox"/> Molten Salt Oxidation <input type="checkbox"/> Solvated Electron Technology <input type="checkbox"/> Retrofilling <input checked="" type="checkbox"/> Other: Papusha Rocket Technology (High temperature detoxication)</p> <p>Type of technology (1-sentence description): Papusha Rocket Technology</p> <p>Description of the technology please provide additional information as appropriate (summarize here and, if necessary, attach documentation) Will be attached</p> <p>Commissioned? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Year: 1998 Can the technology be used in a mobile facility' <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	
3	<p>State of development</p> <p>Does the technology exist as an industrial unit? <input checked="" type="checkbox"/> Yes, <input type="checkbox"/> No If "No", please indicate when it will become operational: If "Yes", please indicate how many units exist: 3 In what countries: Russia</p>	

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Pretreatment:

Does the technology require any pretreatment procedures? Yes No
 if "Yes", please specify required pretreatment procedures:

- Thermal Dessorption
- Dilution
- Low Temperature Rinsing
- Electro-osmosis
- Draining/Solvent washing
- Dismantling/Shredding
- Other:

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Byproducts

What byproducts does the technology produce? (please specify below)

Byproduct	Kind	Amount
Liquids:	NaCl Solution	5,000 L per tonnes of waste treated
Solids:	No	- kg per tonnes of waste treated
Air:		10,000 m ³ per tonnes of waste treated

Does the technology allow all byproducts to be monitored for POPs*/PTS** before? Yes No

If POPs*/PTS** are discovered, can the byproducts be returned to the process for further treatment? Yes No

Are any of the byproducts classified as other sorts of hazardous wastes? Yes No

If "Yes" please specify:

What volumes of such byproducts are generated by handling a unit volume of PSB wastes:

Can third party monitoring data be provided? Yes No

If "Yes", please attach to this questionnaire.

* POPs: Persistent Organic Pollutants
 ** PTS: Persistent Toxic Substances

How are byproducts disposed of? (please describe briefly)

By extraction

6	<p>Efficiency <i>(please specify, if appropriate)</i></p> <p>Destruction efficiencies (DEs): 99,9999 %</p>
7	<p>Monitoring & Control of releases</p> <p>What technologies are used to monitor releases:</p> <p>Air: ECOM</p> <p>Effluents: Special Spectrometers</p> <p>Solids: -</p> <p>Are all releases monitored for POPs*/PTS** before release? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If POPs*/PTS** are discovered, can the releases be returned to the process for further treatment? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Are any of the releases classified as hazardous wastes? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>If "Yes" please specify:</p> <p>What technologies are used/ required to monitor and treat any such releases prior to release:</p> <p>What volumes of such releases are generated by handling a unit volume of PCB wastes:</p> <p>Is third party monitoring data available? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><i>If "Yes", please attach to this questionnaire.</i></p> <p style="text-align: right;">* POPs: Persistent Organic Pollutants ** PTS: Persistent Toxic Substances</p>
	<p>How are releases disposed of? <i>(please describe briefly)</i></p> <p style="text-align: center;">By extraction</p>

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Disposal costs

What are the *approximate* costs for applying the technology per unit⁺, including costs for all technical pretreatment steps and excluding all cost not related to the technical application of the technology (transport costs, costs for disposal of decontaminated transformers/capacitors/materials, etc.)?

Please specify type of treated/disposed PCB equipment/material/oil below:

	Costs per unit ⁺	Currency
a) Practically all types of liquid PCB	2,000/tonna	USD
b)		
c)		
d)		
e)		
f)		
g)		

⁺ Specify the unit for a) to g):

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Treatment capacities and scaling (*tonnes per year for main waste & equipment types*)

Capacity of existing facilities: **300t/year** units⁺ per year

Can the technology be adapted to higher or lower capacities? Yes No

If "Yes":

- (i) What is the capacity of the smallest commercially viable facility: _____ units⁺ per year
- (ii) What is the capacity of the largest commercial viable facility: **1000t/year** units⁺ per year

Does the adaptation will cause additional costs? Yes No

If "Yes" specify the increase in costs for the adaptation (%) of the initial coasts:

- (i) For smaller plants: _____ %
- For larger plants: _____ %

⁺Please specify the unit: **High Temperature Detoxication Unit**

Block IV**Facility: Address and Service Information**

1

Facility Name: **JSC "Severstal"**

Address:

City/Town: **Cherepovets**P.O. Box: **162600**District/State: **Voloda District**Country: **Russia**Telephone: **(8202) 56-50-70**Fax: **(8202) 57-12-76**Email: severstal@stal.ruWeb site: <http://www.severstal.ru>Person completing form **Papusha A. I.**Name: **"ELFA, Ltd."**

Parent Company (if different):

Position: **Managing Director**Address: **Moskovskaya st. 32-11**City/Town: **Khimki**P.O. Box: **141400**District/State: **Moscow District**Country: **Russia**Telephone: **(095) 573-80-48**Fax: **(095) 573-80-48**Email: papusha@a27.ru

2	Other Services offered by the company <input type="checkbox"/> Laboratory analysis / testing <input type="checkbox"/> PCB waste packaging for shipment <input type="checkbox"/> PCB classification / labeling <input type="checkbox"/> Clean-up of PCB contaminated sites <input type="checkbox"/> PCB wastes transport <input type="checkbox"/> Other PCB-related services:
3	Further information Identify any company information (brochures, notes etc..) provided separately and if you wish provide additional comments on your services in not more than 50 words: <i>Please see www.ecoelfa.ru</i>