

CCS 通 函

Circular

中国船级社
(2013年)通函第21号总第307号
2013年3月4日(共3+107页)

发：本社总部有关处室，本社验船师、审核员、拆船厂、船东、船舶管理公司

关于做好实施MEPC.210(63)和MEPC.211(63)准备的通知

为配合“2009年船舶安全与环境无害化回收再利用香港国际公约”(简称“香港公约”)顺利实施，国际海事组织(IMO)于2012年3月通过了MEPC.210(63)决议——“2012年安全与环境无害化拆船厂导则”(SRFP导则)和MEPC.211(63)决议——“2012年拆船厂授权导则”(授权导则)。

根据香港公约要求，拆船厂所在国的主管当局或被认可组织(RO)应根据IMO制定的导则(即MEPC.210(63)和MEPC.211(63)决议)对拆船厂进行验证，只有经过验证且检查合格并持有主管当局或RO签发的有效《授权拆船厂从事拆解业务证明》(DASR)的拆船厂方能从事船舶拆解业务。为做好实施准备，现将上述决议(中、英文)转发，请相关方参照实施，并注意以下要点：

1. MEPC.210(63)决议——SRFP导则

- 1) 该导则提供了旨在满足香港公约规定的安全与环境无害化拆解船舶建议，主要是为拆船厂提供指导。该导则对主管当局或其认可组织等其他相关方实施香港公约也有参考作用；
- 2) 香港公约规定，适用船舶应到经主管当局授权的拆船厂进行拆解，拆船厂须制定详细的拆船厂计划(SRFP)。该导则提供了SRFP内容建议，增加了“相邻处所”、“危险环境”、“封闭处所”、“热工”等定义，涵盖了拆船厂的管理、操作、符合工人健康和安全的的方式、符合环保要求的方式。其中安全进入程序、热工作业程序是非常重要的两个程序，对有害物质的环境无害化管理也是一个重点内容；

- 3) SRFP 应经拆船公司董事会或相应管理部门通过，是主管当局或 RO 授权拆船厂从事船舶拆解业务的主要凭据；
- 4) SRFP 应对拆船公司的组织架构、管理政策、拆解设施及方法等进行详细描述；
- 5) SRFP 应包括对拆船计划（SRP）的制定过程的描述。SRP 应由拆船厂制定。对 SRP 的要求可详见我社发布的（2012 年）通函第 100 号总第 262 号。

2. MEPC.211(63)决议——授权导则

- 1) 该导则按香港公约的要求建立授权拆船厂从事拆解业务的机制（包括审核计划），主要为主管当局及其认可组织提供指导，同时也为拆船厂获得《授权拆船厂从事拆解业务证明》（DASR）提供帮助；
- 2) 该导则主要涵盖：由拆船厂提供的必要的文件、对文件的验证、现场检查、审核机制、DASR 的签发/修正/暂停/撤销和换新程序、缔约国之间的信息交流以及对拆船厂违章的处罚；
- 3) 缔约国应确定负责授权的一个或多个主管当局，应指定一个单一联络点以联系主管当局、主管机关（对船舶而言）和拆船厂。经主管当局授权，被认可组织（RO）可从事授权拆船厂的工作（包括签发 DASR）。导则中所述“主管当局”应理解为主管当局或 RO；
- 4) 拆船厂向主管当局提出授权申请；并提交签发 DASR 所必要的文件，其中 SRFP 是主要文件；此外拆船厂可能还需要提交“环境影响研究”文件；
- 5) 主管当局对提交的文件进行评估和验证，且应到现场进行核查；主管当局应在合理的时间段内完成评估和验证（如可能应在 3 个月内）；主管当局应制定向拆船厂提供详细资料和授权过程分析的程序，包括拆船厂能够得到的书面报告，该报告应包括检查获得的数据和对审查发现的评估；
- 6) 主管当局在完成文件、现场核查和验证后签发给一份 DASR（有效期不应超过 5 年）；签发后还可根据情况对 DASR 作进一步的修正；当有信

息证明拆船厂不再符合 DASR 中所标明的限定性条款和要求时可暂停、撤销 DASR。

附件 1: MEPC.210(63)号决议——“2012 年安全与环境无害化拆船厂导则”
(SRFP 导则) (中文译稿) / (英文原件)

附件 2: MEPC.211(63)号决议——“2012 年拆船厂授权导则” (授权导则)
(中文译稿) / (英文原件)

实施中有何问题, 请与我社技术管理处联系。电子邮件: rt@ccs.org.cn

本通函在本社网站 (www.ccs.org.cn) 上发布, 并由各分社转发所辖区域内的相关拆船厂、船东和船舶管理公司。

环保会 MEPC.210(63)决议
(2012 年 3 月 2 日通过)

2012 年安全与环境无害化拆船导则

海上环境保护委员会，

忆及国际海事组织公约第 38(a)条关于国际防止和控制海洋污染公约赋予海上环境保护委员会的职能，

还忆及2009 年 5 月举行的国际安全与环境无害化拆船会议通过的《2009 年香港国际安全与环境无害化拆船公约》（香港公约），以及六份会议决议，

注意到香港公约附则第 17.1 和 19 条，要求拆船厂应参照本组织制定的指南，建立不会对工人或拆船厂附近的人员带来健康风险、并能防止、降低、最大限度减少及在切实可行的范围内消除拆船对环境造成的不利影响的管理系统、程序和技术，

还注意到香港公约附则第 18 条，要求拆船厂应参照本组织制定的指南制订一份拆船厂计划，内容包括工人安全和培训、保护人员健康和环境、人员的任务和职责、应急部署和响应、以及监控、报告和记录保持系统，

进一步注意到香港公约附则第 20.2 条和 22 条要求拆船厂应确保在切割之前对所有有害物质在最大可能的范围内予以识别、标记、包装和拆除，还应确保拆船厂的所有工人在实施任何拆船作业前已接受相应培训和熟悉，

牢记国际安全与环境无害化拆船会议在其决议 4 中提请本组织将制定全球统一和有效实施及执行公约相关要求的指南作为一项紧急事宜，

在其 63 届会议上**审议了**拆船工作组制定的 2012 年安全与环境无害化拆船导则草案，

1. **通过**《2012 年安全与环境无害化拆船导则》，其文本载于本决议附件；
2. **提请**各国政府要求拆船厂注意本导则，鼓励其尽快应用，并在香港公约对其适用时应用本导则；和
3. **要求**本委员会对本导则保持审议。

附件
2012 年安全与环境无害化拆船导则

目录

- 1 引言
 - 1.1 本导则的目的
 - 1.2 本导则的方法
- 2 定义
- 3 拆船厂计划 (SRFP)
 - 3.1 拆船厂管理
 - 3.1.1 公司信息
 - 3.1.2 培训程序
 - 3.1.3 工人管理
 - 3.1.4 记录管理
 - 3.2 拆船厂操作
 - 3.2.1 拆船厂信息
 - 3.2.2 许可、执照和发证
 - 3.2.3 对船舶的接受
 - 3.2.4 制定拆船计划 (SRP)
 - 3.2.5 船舶抵达管理
 - 3.2.6 拆船方法
 - 3.2.7 完工报告
 - 3.3 工人安全和健康符合方法
 - 3.3.1 工人健康和安全的
 - 3.3.2 关键的安全和健康工作人员
 - 3.3.3 工作危险评估
 - 3.3.4 防止对人员健康的不利影响
 - 3.3.4.1 进入安全程序
 - 3.3.4.1.1 进入安全标准
 - 3.3.4.1.2 确定进入安全的适任人员
 - 3.3.4.1.3 进入安全检查和检测程序
 - 3.3.4.1.4 氧气
 - 3.3.4.1.5 易燃空气
 - 3.3.4.1.6 有毒、腐蚀性、刺激性或烟熏后的空气和残余物
 - 3.3.4.1.7 适任人员确认“进入安全”
 - 3.3.4.1.8 进入安全证书、警告标志和标签
 - 3.3.4.1.9 进入安全操作措施
 - 3.3.4.2 热作安全程序
 - 3.3.4.2.1 热作安全标准
 - 3.3.4.2.2 确认热作安全的适任人员
 - 3.3.4.2.3 热作安全检查、检测和确认
 - 3.3.4.2.4 热作安全证书、警告标志和标签
 - 3.3.4.2.5 热作安全操作措施

- 3.3.4.3 焊接、切割、打磨和加热
- 3.3.4.4 圆桶、容器和压力容器
- 3.3.4.5 防止从高处坠落和坠落物引起的事故
- 3.3.4.6 索具和材料搬运的传动装置和设备
- 3.3.4.7 总务管理和照明
- 3.3.4.8 工具和设备的维护和去污
- 3.3.4.9 健康和卫生
- 3.3.4.10 个人防护设备
- 3.3.4.11 工人接触和医疗监控
- 3.3.5 应急部署和响应计划（EPRP）
- 3.3.6 火灾和爆炸预防、探测和响应
- 3.4 环境符合方法
 - 3.4.1 环境监控
 - 3.4.2 有害物质管理
 - 3.4.2.1 潜在含有有害物质
 - 3.4.2.2 附加取样和分析
 - 3.4.2.3 识别、标记和贴标签及潜在船上位置
 - 3.4.2.4 移除、搬运和修复
 - 3.4.2.5 移除后的储存和贴标签
 - 3.4.2.6 处理、运输和处置
 - 3.4.3 有害物质环境无害化管理
 - 3.4.3.1 石棉和含石棉材料
 - 3.4.3.2 PCB 和含 PCB 材料
 - 3.4.3.3 消耗臭氧物质（ODS）
 - 3.4.3.4 涂料和涂层
 - 3.4.3.4.1 防污底化合物和系统（包括三丁基锡（TBT）在内的有机锡化合物）
 - 3.4.3.4.2 有毒和高度易燃涂料
 - 3.4.3.5 有害液体、残余物和沉积物（例如油、舱底水和压载水）
 - 3.4.3.6 重金属（铅、汞、镉和六价铬）
 - 3.4.3.7 其他有害物质
 - 3.4.4 防止对环境的不利影响
 - 3.4.4.1 溢出的防止、控制和应对
 - 3.4.4.2 防止雨水污染
 - 3.4.4.3 碎片防止和控制
 - 3.4.4.4 事故和溢出报告程序
- 附录 1 拆船厂计划建议格式
- 附录 2 SRFP 中拆船信息示范格式
- 附录 3 拆船过程（从准备直至完工）
- 附录 4 国际劳工组织相关文件（ILO）
- 附录 5 联合国环境规划署（UNEP）和其他机构相关文件和参考资料
- 附录 6 拆船厂应准备搬运的船上发现的物质（包括在有害物质清单（IHM）第 III 部分中）

1 引言

1.1 本导则的目的

本导则为利益相关方，特别是拆船厂提供安全和环境无害化拆船建议和《2009 年香港国际安全与环境无害化拆船公约》（以下称“本公约”）实施建议。

应注意本公约第 6 条和附则第 9、17 至 25 条对拆船厂提出的要求，并要求参照本导则。

本导则应主要供拆船厂使用，但其他利益相关方如主管当局和经其认可的组织也可在实施本公约时参考本导则。

1.2 本导则的方法

本公约第 6 条要求应对本公约适用的船舶或按本公约第 3.4 条视作类似的船舶进行拆除的拆船厂予以授权。附则第 18 条规定此类经授权的拆船厂应编制一份综合的拆船厂计划（SRFP），该计划应至少包括工人安全和培训、保护人员健康和环境、人员的任务和职责、应急部署和响应以及监控、报告和记录保持系统。

本导则对所建议的 SRFP 内容进行了描述，并提供适当信息以对本公约具体条文所预期的性能标准进行阐述。

2 定义

本导则所用的术语与本公约中定义的术语含义相同，但以下附加定义仅适用于本导则：

2.1 “相邻处所”系指在所有方向上，包括所有接触点、角落、对角、甲板、舱顶和舱壁，与某一处所接壤的那些处所。

2.2 “有害空气”系指可能使工人遭受死亡、丧失行为能力、自救能力（即无需帮助逃离某一处所）受损、伤害或急性病风险的空气。

2.3 “围蔽处所”系指具备下列特征之一的处所：

1. 进出开口受限；
2. 通风不足；和/或
3. 并非设计成供工人连续使用。

围蔽处所包括，但不限于货物处所、双层底、燃料舱、压载舱、货泵舱、货物压缩机房、隔离舱、空舱处所、箱形龙骨、屏蔽间处所、锅炉、发动机曲轴箱、发动机扫气箱、污水舱和相邻连接的处所。

2.4 “进入”系指人员通过开口进入处所的行为。进入包括确保在该处所的工作活动，并视一旦进入者身体的任何部分越过该处所开口的平面即已发生。

2.5 “热作”系指无论在船上何处进行的任何需要使用电弧或气焊设备、燃割设备或其他火焰形式及加热或产生火花的工具的活动。

2.6 “处所”系指船上永久或临时的三维结构或舱室，例如但不限于：液货舱或货舱、泵舱或机舱、储存室、存有易燃或可燃液体、气体或固体的液柜、其他舱室、狭窄（爬行）处所、隧道（即轴隧）或通道。处所内的空气是充满整个处所的。

3 拆船厂计划（SRFP）

拆船厂计划（SRFP）应由拆船公司的董事会或相应的管理部门通过。SRFP 是主管当局或经其认可的组织在对拆船厂进行授权时将依据的主要文件。应采用现场检查的方式来验证拆船厂的操作符合 SRFP 中的描述。因此 SRFP 应充分描述拆船厂所进行的操作和程序以确保符合本公约，这点至关重要。

SRFP 应证明对所有适用的法定和监管要求的知晓和理解，并对工人健康和安全性及环境保护的强烈承诺。SRFP 还应描述在拆船厂拆船时涉及的操作过程和程序，证明如何符合本公约的要求。SRFP 的建议格式见附录 1。

3.1 拆船厂管理

SRFP 应提供拆船公司组织结构和管理方针的相关信息、拆船厂的概述以及与拆船有关的方法。SRFP 应提供足够的细节以证明已对拆船有关的生产过程和项目管理理解透彻，并应证明拆船厂使用了正当和切实的措施来解决拆船内在的技术问题。

SRFP 应预期到一旦在拆船时出现之前未知的因素或事项则需要变更拆船操作过程。应建立对之前未知特征的识别和处理程序。另外，决策过程所确定的方法应确保能保护工人的安全和健康及环境。

3.1.1 公司信息

SRFP 应提供有关下列内容的详细信息：

1. 拆船厂的运营商，包括对组织机构和运营商的拆船经历的详细摘要；
2. 土地或拆船厂所有人（如不是运营商）的名称；
3. 管理人员的岗位、职责和资质；
4. 拆船厂关键人员的岗位和职责（关键人员应对拟从事的工作职能有适当的技能和经验。拆船厂应有专门的环境、安全和健康经理并有一名受过急救和医疗培训的人员）；
5. 拆船厂环境、职业安全和健康管理体系，包括任何经正式认可的环境管理体系（如 ISO14001）和职业安全和健康管理体系（如 OHSAS18001）国际标准的应用及任何颁发的证书，如适用；
6. 拆船厂对承诺保护环境和职业安全和健康的方针声明，包括拆船厂为最大限度减少和最终消除拆船对人员健康和环境的不利影响而设定的目标；
7. 为确保符合适用的法定和监管要求而采用的方法；和
8. 为实现拆船公司方针所规定的目的和目标而持续改进拆船厂运作而采用的体系。

拆船厂的环境和职业安全和健康方案、方针和目的应告知在拆船厂工作的所有人员并使其理解。

3.1.2 培训程序

本公约附则第 22 条规定拆船厂应确保提供培训程序。SRFP 应提供有关工人总数、工作职能和培训程序的详细信息以保证相应的工人安全和环境保护的水平。培训程序应覆盖拆船厂的所有工人和成员，包括合同工和雇员（第 22.3.1 条），并应确定培训的类型和频率。应对培训程序进行定期评审和在必要时予以修改（第 22.3.5 条）。

培训程序应能使工人安全从事所有分配其进行的操作并确保拆船厂的所有工人在进行任何拆船作业前以接受相应培训。

该程序应包括对承担任务和操作的雇员进行适当培训，培训内容包括但不限于下列方面：

1. 对有害物质信息的意识和沟通；
2. 工作危险意识，包括有害物质的搬运和管理；
3. 个人防护设备；
4. 防火保护；
5. 应急响应和撤离；
6. 安全和健康培训；
7. 环境意识；和
8. 急救意识。

3.1.3 工人管理

SRFP 应包括有关工人职责的具体信息，包括资质、培训和监控责任。

3.1.4 记录管理

SRFP 应概述留存拆船厂的操作和具体到每条船拆除的重要记录的方针和程序。留存的记录应包括但不限于：实验室分析结果、舱单、装船单据、卡车运输单据、废料运输记录、

培训和练习/演习记录、工人事故、受伤和医疗或健康记录（如：开展的职业健康体检和感染的职业疾病），以及对任何对记录管理和留存的国家要求的描述。如国家要求未规定时间段，则建议记录应保存 5 年。

3.2 拆船厂操作

SRFP 应表明对要求按适用的法律和法规进行拆船操作的规定、生产过程、项目管理和其他要求的理解，并说明拆船厂计划如何防止对人员健康和环境的不利影响（公约附则第 19 条）。

3.2.1 拆船厂信息

SRFP 应对拆船厂的物理位置进行清晰和简洁的描述，包括其面积和到达拆船厂的路线。应包括一副拆船厂的详细图纸或地图，并说明将进行拆船的区域。SRFP 应包括对拆船厂相关细节的清晰和简洁的描述，例如拆船厂的布局、水深、可到达性、维护和清淤。

SRFP 应包括对总估算拆船能力、包括钢材在内的可回收材料的生产总量/能力、以及材料分隔和处理的工程特征的清晰和简洁的描述。对临时和永久性建筑，如办公室、工人用综合性建筑、饮用水供应、卫生设备、医疗和急救设施、气体储存和有害物质储存和加工设施应予以标识，对楼面构造、其他结构、道路和应急通道也应予以标识。

SRFP 应包括对拆船厂使用的主要操作设备相关细节的清晰和简洁的描述。建议该描述应包括此类设备的数量、容量和类型，以及其他与工人安全和环境保护有关的相关信息如检测证书、安全工作载荷和操作人员的资质。

拆船厂信息的示范格式见附录 2，附录 2 同时也覆盖了 3.2.2 所述的要求（许可、执照和发证）。

3.2.2 许可、执照和发证

SRFP 应载明为保证拆船厂的操作和维护符合所有适用的法律和法规而采用的程序。

SRFP 应包括在拆船开始前生效或获得的特定场地的许可、执照和/或证书的相关信息，包括从对该厂地用于拆船目的进行授权的土地所有人、港口或其他实体处获得的租赁或授权。

SRFP 应包括确保进行相应标准的认证和/或验证的程序，以保证所有分包商（包括涉及搬运、运输、处理、储存和废弃处置的分包商）持有有效的许可、注册和/或证书（如适用）。

在拆船厂处理或管理有害物质过程中的任何环节使用了分包商都不会减轻拆船厂的职责。在本导则所涵盖的所有事项中，拆船厂应确保并保持记录，以载明分包商所进行的安全和环境无害化管理。

3.2.3 对船舶的接受

本公约包含了对接受拆除船舶的要求。SRFP 应描述船舶抵达拆船厂进行拆除前应实施的过程和程序。

在准备接收拆除船舶时，第一步应将该意向通知主管当局（见本公约附则第 24.2 条）。如拟拆除的船舶已取得《国际适合拆船证书》，拆船厂应采用本公约附录 6 中的报告格式向其主管当局报告拆船计划开工时间。本公约所要求的从拆船准备阶段直至拆船结束阶段各利益相关方应遵守的程序见本指南附录 3 所述。

3.2.4 制定拆船计划（SRP）

根据本公约附则第 9 条，拆船厂在任何拆船活动开始前应制定一份船舶特定的拆船计划（SRP）。可使用 SRFP 中描述的操作过程来编制 SRP。本公约要求应在签发《国际适合拆船证书》之前按公约附则第 9 条规定批准 SRP。SRFP 应参照《拆船计划编制指南》（SRP）描述 SRP 的制定过程。

3.2.5 船舶抵达管理

SRFP 应描述为保证船舶安全抵达拆船厂应实施的程序，包括对系泊、突发严重和/或恶

劣天气、漂浮监控、拆船时的稳性和防止浸水和/或沉没方法的规定。这些规定可依据拆船方法有所不同。

3.2.6 拆船方法

SRFP 应对拆船厂的拆船方法进行全面描述，该描述应覆盖拆船的整个过程包括有害物质和废料的管理以及材料识别和隔离的方法和程序。SRFP 还应详细说明如何以安全和环境无害化的方式搬运和/或处置所回收的材料、可再用物件和废料。

SRFP 应包括对安全和环境无害化拆船的相关危险进行评估的程序，并应确定最大限度减少和消除任何此类危险的后续过程。

如将材料或废料移出拆船厂以进行进一步加工和/或处置，SRFP 应提供详细程序确保其只能转移至经授权以环境无害化的方式进行处理和/或处置的厂中。

3.2.7 完工报告

本公约附则第 25 条包含了对完工报告的要求。SRFP 应描述针对该报告的程序，包括拆船厂如何记录和报告任何意外事件和事故。

3.3 工人安全和健康符合方法

3.3.1 工人健康和安全的

在 SRFP 的这一章节中，拆船厂应提供对拆船厂保护工人健康和安全的计划和程序的全面描述，并应反映本公约和国家法律的适用要求（特别是本公约附则第 19、21 至 23 条）。拆船厂还应参照各国际组织制定的相应指南。指南的参考资料清单见附录 4。SRFP 应说明并证明拆船厂知晓和理解适用的工人安全和职业健康流程、程序、法律、规定和指导。另外，SRFP 应证明该安全和健康方案能够支持为符合环境要求和为在拆船厂进行拆船和处理所进行的必要活动。

3.3.2 关键的安全和健康工作人员

SRFP 应确定一名或多名具备为有效确保在拆船厂操作期间安全条件得以保持所必须的培训和经验水平的关键人员，包括从事特定工作的一名或多名适任人员。根据拆船厂的规模和工人数量，SRFP 应包括一份安全和管理人员级别层次图，包括一名总管经理、各监督人员和普通工人。

3.3.3 工作危险评估

SRFP 应包括拟实施的进行工作危险评估以确定合适的方法来最大限度保障工人安全的程序。每一项工作的具体危险评估责任应指派给一名适任人员。建议应由该适任人员、一名管理层代表和具备相应专业水平的几名工人组成一个小组进行评估。

3.3.4 防止对人员健康的不利影响

本公约附则第 19 条规定拆船厂应建立和使用程序，以通过确保在整个拆船过程中建立和保持热作安全和进入安全条件来防止爆炸；防止其他导致或可能导致损害人员健康的事故；防止可能危害人员健康和/或环境的货物残余物和其他物质的溢出。因为这些是关系到拆船厂安全操作的更加至关重要的方面，所以 SRFP 要清楚表明其实施了防止工作场所事故和伤害的程序，这点尤为重要。下列导则概述了 SRFP 中应包括的关键考量。

3.3.4.1 进入安全程序

在整个拆船过程中，拆船厂应确保在进入前和作业时对围蔽处所和其他存在有害空气的区域进行监控，以确保其保持进入安全和持续活动安全。拆船厂应确保直至适任人员签发进入安全证书后才能进入船上处所。在签发证书以及拆船活动开始前，适任人员应目视检查和检测船上的每一处所以确认能够安全进入的区域。

应对所有可能因处所内氧气含量、易燃性和空气毒性而对人员健康造成危害的处所进行进入安全发证、检查和检测，并应特别注意围蔽处所和在日常拆船作业中已进行或将进行热作的处所和相邻处所。

认定为“进入安全”对热作而言还不够，因为要解决与热作相关的安全事宜还应满足另外的标准。

3.3.4.1.1 进入安全标准

为了安全进入，应获得下列各项的稳定读数：

1. 用氧气含量测量仪测得的空气中氧气的体积含量为 21%（注：国家要求可能确定了一个安全空气范围）；
2. 如果初步评估确定可能存在易燃气体或蒸汽，用适当的敏感可燃气体指示仪测得的这些气体或蒸汽的浓度不超出其易燃下限（LFL）的 1%；和
3. 任何有毒蒸汽和气体的含量不超过其职业接触极限（OEL）^①的 50%。

如不能满足上述条件，应对处所进行进一步通风并间隔一段合适的时间后重新测量。

3.3.4.1.2 确定进入安全的适任人员

本公约附则第 1 条对“适任人员”进行了定义。主管当局应确定指派适任人员的相应标准。但是，对进入安全和/或热作安全进行确认的适任人员应能够确定氧气含量、易燃蒸汽和气体浓度和有毒、腐蚀性、刺激性或烟熏后的空气和残余物的存在。适任人员应具备足够的知识和实际经验以基于作业所在的处所的结构、位置和用途进行全面评估。适任人员应有能力对处所进行检查、检测和评估以确定是否需要进一步检测。适任人员还应监测处所内维持在适当条件下。

3.3.4.1.3 进入安全检查和检测程序

认定为“进入安全”对热作而言还不够，因为要解决与热作相关的安全事宜还应满足另外的标准。应由适任人员使用经正确核准和校准的适当设备进行检测，包括但不限于氧气含量测量仪、可燃气体指示仪、毒性测量仪和气体或蒸汽探测设备。

3.3.4.1.4 氧气

拆船厂应确保在工人首次进入处所前由适任人员对处所进行检测，以确定空气中的氧气含量，并且确保在处所有人员的所有时候对处所进行定期监控并进行记录。应对下列处所予以特别关注：

- 已被密封的处所；
- 存放或最近存放过可燃或易燃液体或气体的处所和相邻处所；
- 存放或最近存放过有毒、腐蚀性或刺激性液体、气体或固体的处所和相邻处所；
- 已烟熏过的处所和相邻处所；和
- 存放可导致空气中氧气缺乏的材料或材料残余物的处所。

工人应只能进入氧气含量以体积计达到 3.3.4.1.1 所规定的值的处所。在这种情况下，该处所应贴上“进入安全”的标签。如果发现空气中缺氧或富氧，应进行通风，通风量和流速应足以保证氧气含量保持在 3.3.4.1.1 所规定的值。当氧气含量回到 3.3.4.1.1 所规定的值并经适任人员检测和检查后，可重新贴上标签。

3.3.4.1.5 易燃空气

拆船厂应确保在工人进入前由适任人员对存放或已存放过可燃或易燃液体或气体的处所和相邻处所进行目视检查和检测，并确保在处所有人的所有时候对处所进行定期监控并对其结果进行记录。

如果拟进入的处所内的易燃蒸汽或气体的浓度等于或大于易燃下限的 1%，则任何人都不应进入该处所，并应除去“进入安全”标签。应进行通风，通风量和流速应足以保证易燃蒸汽的浓度维持在易燃下限的 1% 以下。当易燃蒸汽的浓度降到易燃下限的 1% 以下并经人员检测和检查后，可重新贴上标签。

^① 应注意职业接触极限(OEL)这一术语包括许用接触极限(PEL)、最大允许浓度(MAC)和阈值(TLV)，或任何其他国际上认可的术语。

3.3.4.1.6 有毒、腐蚀性、刺激性或烟熏后的空气和残余物

拆船厂应确保在工人首次进入前由适任人员对存放或已存放过有毒、腐蚀性和刺激性的液体、气体或固体的处所和相邻处所进行目视检查和检测。

如果处所内存放的某一材料在空气中的浓度超过其 OEL 的 50%，任何人都不应进入该处所，且该处所不应贴上“进入安全”的标签。应进行通风，通风量和流速应足以保证空气浓度维持在其 OEL 的 50% 以下。当污染物的浓度维持在其 OEL 的 50% 以下并经任人员检测和检查后，可重新贴上标签。

3.3.4.1.7 适任人员确认“进入安全”

适任人员应视必要经常目视检查和检测每个经核准为“进入安全”的处所，以确保该处所内的空气条件维持在证书所规定的条件下。但是，至少应对处所每隔 8 小时进行一次检查和检测。这些检测结果应记录在进入安全证书上。

如果发生可导致改变经检测的围蔽处所内条件或者其他有害空气条件的变化，在受影响处所或区域内的作业应停止。应直至受影响的处所或区域经适任人员目视检查和重新检测并符合核准要求后，才能继续作业。建议应对处所进行通风，使经发现超出限值的处所内的空气条件回到可接受的限值。

如果某一处所由适任人员最初确认为雇员可以安全进入，但后来发现该检测过的处所内的条件不能符合要求，则应停止作业直至将该检测过的处所内的条件纠正到符合核准要求。如果这么做安全的话，可要求适任人员调查该处所出现不符合性的原因并保证将会采取纠正措施以避免再次发生这种情况。

3.3.4.1.8 进入安全证书、警告标志和标签

对处所做出任何“进入安全”的确认时应附有证书，证书中应至少清晰显示下列信息：

- 进行检测和检查的适任人员的姓名和头衔；
- 上述人员的签名；
- 船舶名称和位置；
- 船上进入安全的区域；
- 检查的日期和时间；
- 被检查处所的位置；
- 已进行的检测；
- 检测中使用的设备类型；
- 检测结果；
- 对处所进行重新检测的间隔时间；
- 已进行的定期重新检测结果；
- 应召回适任人员的情况或证书作废的情况；
- 安全性判定（“进入安全”，“非进入安全”）
- 证书的有效期和失效日期，建议最长为 24 小时，定期重新检测间隔不超过 8 小时；
- 通风类型；和
- 任何其他相关信息或须知。

安全进入证书应张贴于岸上和船舶之间的每一处通道处。对空气检测的检查记录应附于证书后。

证书和/或处所其本身应清楚标记，并使用拆船厂的工作语言，使所有工人能看见并理解，如果可能话，采用图画的形式表现。

如果整个作业区域已经过检测并已在通向该工作区域的所有通道处贴上适当的标签（如：“进入安全”），则该作业区域内的单个舱柜或其他处所无需再分开贴标签。

证书、更新内容和任何其他记录应存档，从产生这些文件的具体工作结束之日起保存至

少3个月。

如果某一处所在任何时候停止符合进入安全标准，应去除“进入安全”标签。

3.3.4.1.9 进入安全操作措施

除了确保经核准为“进入安全”外，还应遵守下列操作措施：

- 除非经拆船厂的适任人员授权并已遵守了相应的安全程序，否则任何人不得开启或进入围蔽处所；
- 代表拆船厂负责维护证书的人员已对拟进入处所人员签发了进入许可，确认对安全进入的所有核准过程和操作措施已完成且有效；
- 对处所进行适当照明；
- 处所设有适当的进口和出口，且围蔽处所内的工作区域适合拟进行的作业，特别是重型、大型或复杂的起吊作业；
- 确定、检测并使用供各方在进入时使用的适当的通信系统；
- 将可能会不慎释放进入正在作业处所的气体、液体或所识别的其他有害物质与处所进行充分隔离；
- 由一名可能负责一个或多个作业组的经过充分培训的监督人员对区域进行监督并频繁监控工人所接触的环境条件；
- 通风设备的式样不会导致将着火源引入危险处所；
- 处所内所设的通风设备足以支撑作业的开展，并足以应对在高温和潮湿的区域会出现的环境条件的昼夜变化；
- 通风系统应设计成能防止在舱柜/处所内存留气泡，这些气泡由于舱柜/处所的复杂结构或因为气泡比空气蒸汽重而产生。可通过吸入式/排出式通风而非吹风式通风来防止气泡的存在；
- 如果通风系统发生故障，应采取某种方式发出警告，使处所中的所有人员能迅速离开；
- 提供适当的救援和防火控制图；
- 向工人提供适当的个人防护设备（PPE）、防护服和安全设备（包括安全带和救生索），供其在进入指定的处所和在该处所内作业时使用；和
- 提供充足并有效的救援和抢救设备，并放置在处所的入口处随时可供使用。

如果发出火灾报警，应清空处所直至适任人员确认警报解除可重新进入。

3.3.4.2 热作安全程序

拆船厂应保证，除非该区域被视为“热作安全”，否则不得在船上开始任何热作。

热作发证、检查和检测适用于下列所有区域：

- 可能含有有害空气的围蔽处所和被舱壁和甲板围蔽的所有其他处所（包括货舱、液舱、居住舱室及机器和锅炉处所）；
- 存放或已存放过可燃或易燃液体或气体的处所内、其上方或紧邻该处所之处；
- 存放或最近一次存放过燃料的燃料舱内、其上方或紧邻该舱之处；
- 与存放或最近一次存放过燃料的处所连接的管路、加热盘管、泵附件或其他附件的上方；和
- 不含有害空气的舱底、货舱、机舱处所和锅炉处所。

拆船厂应保证在适任人员签发热作安全证书前不得在这些处所中的任何一处开始热作。这些检查和检测应填入检查和检测记录表中，并张贴在船上的明显位置。在签发证书前和拆船活动开始前，适任人员应目视检查和检测船上的每一处所以确定哪些区域可视为“热作安全”的区域。

3.3.4.2.1 热作安全标准

符合所有进入安全标准同时还符合下列标准的处所系为“热作安全”处所：

- 处所内的任何残余物或材料不能产生富氧或缺氧环境，且不能产生易燃或易爆蒸汽；
- 对所有相邻处所已进行清洁，使之变成惰性处所，或经过充分处理使之能防止爆炸危险、有害或毒性烟雾或气体的释放和火灾蔓延；和
- 在相邻处所作业时不受热作影响，例如进入舱柜、起吊操作或手动拆解作业。

3.3.4.2.2 确认热作安全的适任人员

负责确认热作安全相关事项的适任人员应符合 3.3.4.1 所述标准，并具备处理热作活动所需要的额外知识和技能。

3.3.4.2.3 热作安全检查、检测和确认

适任人员应视必要经常对每一处所进行“热作安全”核准，其核准频率应能确保该处所内的条件维持在证书所规定的水平。应视下列情况确定对处所进行监控的频率，以确定该条件是否得以维持，但无论如何不得超过 8 小时的间隔：

- 温度：处所内的任何温度变化都会导致其空气条件的改变，炎热天气会使残余物产生更多蒸汽，导致更大的易燃或易爆风险；
- 处所内的作业：在处所内的活动会改变其空气条件；从软管或焊枪中泄漏的气体或通过刮铲或手持高压喷洒装置来手动清洁舱柜会搅动残余物，导致更大的易燃或易爆风险；
- 已过时长：如果自热作安全证书签发后已过去了相当长的一段时间（不超过 24 小时），应在进入和开始作业前对处所内的状况重新检测；
- 无人值班处所：如果一舱柜或处所已被核准为“热作安全”，但后来在相当长的一段时间内无人值班，则在进入和开始作业前应重新检测；
- 作业中断：在工人休息或换班离开后应检查舱柜或处所内留下的设备，并应在进入和继续作业前对舱柜或处所内的状况重新检测；和
- 压载或纵倾：改变压载位置或向任一方向移动或纵倾船舶会导致处所内的空气发生变化；应在进入和继续作业前对处所内的状况重新检测。

3.3.4.2.4 热作安全证书、警告标志和标签

对处所做出任何“热作安全”的确认应伴有证书，证书中应至少包括 3.3.4.1.8（安全进入证书、警告标志和标签）中所列信息。警告标志和标签应按 3.3.4.1.8 中确认安全进入时所述的方式张贴，清楚标明该处所为“热作安全”。

3.3.4.2.5 热作安全操作措施

除 3.3.4.1.9（“进入安全操作措施”）规定的措施外，还应采用下列措施以获得“热作安全”核准：

- 每一要进行热作的区域在热作开始前应进行仔细准备并隔离；
- 在热作开始前，所有可产生易燃或易爆蒸汽的垃圾、碎片、残油或其他材料应从处所中移除。处所和相邻处所中不应有任何可导致易燃或易爆风险的垃圾、碎片、残油或其他材料；
- 存放过易燃物质的圆桶和类似小型容器在被切割前应装满水或彻底清洁干净；
- 甲板舱柜应按一般章节（见 3.3.4.1 和 3.3.4.2）所述进行适当清洁、除气、经核准为进入安全和进行热作检测。由于燃烧过程中可能消耗空气中的氧气，应适当保持新鲜空气的供给。舱柜应按本导则中的指导进行隔离和检测。应特别注意出口和入口和在紧急情况下这些处所对舱柜救援带来的挑战；
- 固定货物或燃料舱应在任何作业开始前和通过“进入安全”和“热作安全”核准后进行清洁和通风。清洁应足以去除任何有害液体、轻质固体和清洁产生的垃圾，以使舱柜内无气体残存。复杂结构在核准为“热作安全”前可能需要进行额外的准备。应

考虑到局部手动清洁的需要。通风应能让足够的空气流到达处所的所有部分，以防止因热作或舱柜涂层积聚气体；

- 通风应有足够的通风量和流速以确保易燃蒸汽的浓度保持在易燃下限的 1% 以下；
- 一般机械通风应有足够的容量，并布置成能产生足够的换气以使焊接雾气和烟气保持在安全水平；和
- 应遵守拆船厂的防火安全程序。

3.3.4.3 焊接、切割、打磨和加热

SRFP 应包括通风、接触重金属的人员监控、个人防护、培训、呼吸防护、火焰切割、许可和检查（包括热作核准）程序。SRFP 应包括运输、移动、系固、储存和使用软管和焊枪的程序。

3.3.4.4 圆桶、容器和压力容器

SRFP 应包括装有易燃气体，如用于焊接、加热和切割作业的乙炔（ C_2H_2 ）、丙烷（ C_3H_8 ）或氧气（ O_2 ）的压力容器的搬运、运输和储存程序，以防止由于对该类容器的外力、冲击或加热而导致的任何人身伤害。

还应包括存放二氧化碳（ CO_2 ）、氮气（ N_2 ）和消防和冷藏系统中使用的其他消耗臭氧物质的压力容器移除程序。

使用适当的 PPE 盛装有害液体的圆桶和容器的运输和储存程序也应在 SRFP 中进行描述。

3.3.4.5 防止从高处坠落和坠落物引起的事故

SRFP 应包括使用个人漂浮装置、防护甲板开口、甲板边缘和平台、采用个人防坠落系统和防护栏杆以及确保进入船舶的安全通道的程序，以防止滑倒和坠落事故以及物体坠落和散落。

3.3.4.6 索具和材料搬运的传动装置和设备

SRFP 应包括绳子、链条、吊索、钩子、滑轮组以及升降和拖拉设备检测和检查程序。其应进一步包括对使用起重机、机械、移动设备及天线和人工起吊系统的操作的说明，并包括操作人员所需的资质清单。

3.3.4.7 总务管理和照明

SRFP 应包括走廊、通道和临时甲板开口等工作区域的程序。

3.3.4.8 工具和设备的维护和去污

SRFP 应包括设备的检查和维修程序、第三方检查管理要求和去污程序。这些活动和检查结果应予以记录。

拆船厂应确保工具和设备的数量和调配与相应的拆船活动相称，尤其在同时拆除大量船舶时。

3.3.4.9 健康和卫生

SRFP 应包括对洗涤设施、淋浴器、就餐和娱乐区域、厕所设施和更衣室的描述。建议拆船厂应提供适当的更衣室及卫生和洗涤设施以控制接触有害物质并防止其传播。卫生和洗涤设施应便于到达，且其位置不会受到工作场所的污染。应为搬运石棉的工人提供单独且合适的更衣室及卫生和洗涤设施供其专用。还建议拆船厂应指定单独的且未受污染的区域供工人就餐、饮水和其他休息使用。

3.3.4.10 个人防护设备

SRFP 应包括保护员工免受各种拆船相关风险的程序和设备的的相关信息。

应对所有可能过度接触的所有员工制定呼吸防护和听力保护方案。SRFP 应描述该方案如何符合国家规定。如无国内法律，拆船厂应采用最佳行业举措来提供有效的呼吸防护和听力保护方案。

3.3.4.11 工人接触和医疗监控

SRFP 应包括拟使用的接触监控和医疗监测程序。

3.3.5 应急部署和响应计划（EPRP）

本公约附则第 18.5 和 21 条规定拆船厂应建立并保持应急部署和响应计划（EPRP）。尽管可以将 EPRP 纳入 SRFP 中，但还是强烈建议将 EPRP 作为单独完整的文件。如将其作为一份单独完整的文件，其中的信息会更便于提供并易于获得。拆船厂会愿意将复印件分发到现场的各位置处。将文件的首页作为摘要信息页，写明相应联系人（例如管理人员和应急响应人员）的 24 小时联系信息（包括电话号码）以供快速查阅，这也会很有帮助。

SRFP 应确定可以容易获得 EPRP 的位置，并应包含对 EPRP 的简明摘要，以便相应实体（如对拆船厂的授权方）或其他有关的利益相关方能容易得确认其存在。EPRP 应考虑到各种潜在的情况，包括但不限于人身伤害、环境事故、极端自然情况和周边社区的活动（例如附近化学处理厂发生紧急情况）。

EPRP 应至少包括拆船厂对以下事件的响应：

- 在拆船厂的界限内或在邻近厂内正在进行拆除或等待拆除的船舶发生火灾或爆炸或进水；
- 拆船厂内工人发生事故；
- 有害物质溢出；和
- 所在地区有可能发生的自然事件，如地震或洪水。

在编制 EPRP 时应考虑到拆船厂的位置、物理和环境特性以及与每条船舶拆除作业相关的活动的规模和性质。EPRP 应包括以下内容：

- 确保必要设备（包括能够应对可能发生的紧急情况的消防栓、灭火器、急救设施、清洁设备、呼吸器、警报和信号及培训安排细节）和应急程序到位，并且定期开展演习；
- 对拆船厂发生紧急情况时保护所有人员所必需的信息、内部通信和协调做出规定；
- 向相关主管当局或经其认可的组织、周边社区和应急响应服务机构提供信息并确保和其的通信；
- 对急救和医疗救助、消防、拆船厂所有人员的撤离（包括应急逃生路线和集合站）和防污染措施，如对有害物质溢出的响应（包括安全处理溢出或喷出的物质以及清洁受污染区域程序）做出规定；
- 对急救站、防火控制站和逃生路线的位置作出显著标识；
- 进一步保证向拆船厂所有级别的工人按其能力提供相关信息和培训，包括应急预防、部署和响应程序的定期操练；和
- 包含应急事件和应急事件发生后的调查及纠正措施记录程序。

3.3.6 火灾和爆炸预防、探测和响应

拆船厂应设有防火防爆及消防系统，以迅速并有效控制火势蔓延及迅速安全撤离厂内所有人员。SRFP 还应对以下各项做出规定：

- 充足和安全的易燃液体、固体和气体储存区域；
- 通过“禁止吸烟”标志来禁烟的程序；
- 在易燃气体、蒸汽或灰尘会造成危险的处所应采取的预防措施（除非该处所已经适任人员检测视为安全，否则不允许有明火或火焰或热作）；和
- 可燃材料、油脂或油水和木屑或塑料碎片的恰当储存程序。

SRFP 还应包括对有火灾和爆炸风险的处所的定期检查程序。这包括加热设备、电气装置、导体的周边区域，易燃和可燃材料的储存区域以及进行热焊、切割、打磨和加热作业的区域。应确定适当的预防措施以减少焊接、火焰切割和其他热作带来的火灾和爆炸风险。

SRFP 应包括按适用的国际和国家法律和法规规定的灭火设备的提供和选择程序，并应记录对拆船厂运作的首次危险识别和风险管理的结果。进行设备调配时应考虑到：对船内处所的入口或出口的任何限制、拆船作业中搬运的有害、易燃和易爆物质的数量和特性、场地运输和储存设施、以及第一阶段消防需求（如手持或手推车式便携灭火器）。

SRFP 应说明灭火设备的位置，确保其随时可供使用、容易看见、并在易于到达的区域。在有火灾危险的地方应有充足的供水（按照国家的法律和法规）。

SRFP 应包括对所有灭火设备的提供、正确操作、维护和由适任人员进行定期检查的程序。通向灭火设备（如消防栓、手提式灭火器、以及软管接头）的通道，应一直保持通畅。

SRFP 应描述向所有监督人员和工人提供适当培训、指导和信息的程序（包括有关此类培训频率的细节内容），此类培训应包括火灾危险、应采取的相应预防措施和灭火设备的使用，从而保证在整个作业期间有充足的受过培训的人员可供使用。培训和演习/操练记录应予以保存，其中包括培训/演习类型、受训人员的角色、使用的设备、持续时间、地点、日期和时间此类信息。

SRFP 应包括安装足够、合适和有效的火灾报警信号（如视觉和听觉信号）的程序。应设有有效的撤离计划，使所有人员迅速和安全撤离。SRFP 应包括在显眼位置张贴通知的程序，该通知应说明（如适用）最近的火警警报、最近的应急服务机构的电话号码和地址和最近的急救站。

3.4 环境符合方法

SRFP 应提供对拆船厂环境保护计划和程序的描述。SRFP 应证明拆船厂理解与拆船相关的环境风险，理解并正在执行适用的国际和国家法律和法规所规定的环境要求，能够以环境无害化的方式管理和处理船上的所有材料，并正在为保护环境而实施控制，包括搬运和处置有害物质。SRFP 应反映本公约的适用要求（特别是公约附则第 20 至 22 条）。

SRFP 应描述按国家法律和法规用于专门处理和处置拆船作业产生的有害物质的基础设施。拆船厂还应参照各国际组织制定的相应指南。指南的参考资料清单见附录 5。

3.4.1 环境监控

SRFP 应描述旨在防止在拆船时对环境可能产生负面影响的环境监控方案。

拆船时可能带来的负面影响可分为 4 个主要方面：

- 有害物质释放到土地和沉积区；
- 有害物质释放到水中；
- 有害物质排放到空气中；和
- 噪音/振动。

如果 SRFP 中包括监控方案，则该方案应具体到特定拆船厂，考虑到拆船厂的特点，如：使用干坞、防波堤/码头和/或海陆交界处的拆船场地，并应识别拆船厂周边环境的化学、生物和物理变化。

如果 SRFP 中包括监控方案，则该方案应使用完善的对相关环境参数的取样和分析标准。

3.4.2 有害物质管理

在拆船前，有害物质清单（IHM）除经适当维护和更新的第 I 部分外，还应包括第 II 部分—操作产生的废料和第 III 部分—物料（本公约附则第 5.4 条）。

拟拆除的船舶应在进拆船厂前的一段时期内进行作业，以最大限度减少船上残存的货物残余量、燃油和废料（本公约附则第 8.2 条）。

SRFP 中应至少列出下列有害物质：

(a) 船舶结构和设备中含有的物质（IHM 第 I 部分）：

石棉

多氯联苯（PCB）

消耗臭氧物质 (ODS)
防污底化合物和系统
镉和镉化合物
六价铬和六价铬化合
铅和铅化合物
汞和汞化合物
多溴化联(二)苯 (PBB)
多溴二苯醚 (PBDE)
多氯化萘 (PCN)
放射性物质
某些短链氯化石蜡

(b) 操作产生的废料 (IHM 第 II 部分) :

废油 (油泥)
机器上安装的后处理系统产生的舱底水和/或废水
油性液体货物残余物
压载水
原始污水
处理的污水
非油性液体货物残余物
干货残余物
医疗废弃物/传染性废弃物
焚烧炉灰渣
垃圾
燃料舱残余物
油性固体货油舱残余物
油性或化学污染的碎布
干舱残余物
货物残余物

(c) 物料包括常规消耗物品 (IHM 第 III 部分)。其清单见本导则附录 6。

潜在含有有害物质的常规消耗物品包括不构成船舶整体部分且不太可能在拆船厂被拆除或处理的货品。

SRFP 中应描述拆船厂正确管理船上发现的每种有害物质的措施。

SRFP 应描述拆船厂用于移除、标记、储存、隔离、运输、处理和处置所有此类有害物质的过程、控制程序和减少方法, 其应按适用的国家要求制定。

对作为拆船活动一部分的有害物质的处理顺序进行描述, 这点非常重要。

建议对上述识别的每一种潜在有害物质明确规定下列各方面的恰当管理:

- 识别、标记和贴标签及潜在船上位置;
- 回收方法;
- 移除、搬运和修复;
- 储存和贴标签; 和
- 处理、运输和处置。

SRFP 应描述拆船厂安全 and 环境无害化地移除和处理船上任何非有害的废料的作法。

SRFP 应参照适用的 IMO 指南, 包括但不限于《港口接收设施综合手册》, 描述拆船厂移除和处理所有此类非有害废料的过程、控制程序和能力。

3.4.2.1 潜在含有有害物质

分类为“潜在含有有害物质”（PCHM）的前提是“具备进行取样而不可能不损害船舶安全及其营运效率的合理理由”（《2011 年有害物质清单编制指南》4.2.3，以下简称“有害物质清单指南”）。

SRFP 应描述如何对 PCHM 进行处理，即下述两种方法之一：

- 按本公约要求将其作为有害物质移除、储存和处理；或
- 进行取样和分析，并基于取样和分析发现的结果对 PCHM 进行相应处理。

对如何处理 PCHM 的决定应建立在尽可能透明一致的基础上。拆船计划中将需要充分描述这方面信息。

3.4.2.2 附加取样和分析

在拆船过程中或进行准备时，如拆船厂认为有必要，应进行取样、分析和/或目视检查（可能与船东合作进行）以对有害物质进行识别。应制定取样计划，计划中对取样位置、应取样数量、取样人员（包括分包商）姓名和应进行的分析类型进行描述。

在对任何潜在有害物质进行取样时，应按针对该有害物质的工人安全措施来保护取样人员不接触有害物质。样品分析应在经认可的实验室进行。

建议在进行附加取样时，拆船厂应遵守有害物质清单指南中有关取样和分析相关内容。

在知晓取样和分析结果后，拆船厂应根据发现该物质是否有害来对这些物质进行适当管理。

3.4.2.3 识别、标记和贴标签及潜在船上位置

拆船厂应使用 IHM 中的信息以对任何有害物质的类型、位置和数量进行识别，并进行标记/或贴标签。石棉、PCB、其他有害物质和船舶液舱，如原油舱（COT）、燃油舱（FOT）、滑油舱（LOT）、淡水舱（FWT）和水压载舱（WBT），应以易于辨认的方式进行清楚标记。

建议拆船厂应确保其充分意识到船上所有有害物质的潜在位置。各有害物质的典型位置实例见有害物质清单指南附录 5（“现有船舶清单第 I 部分编制过程的实例”）的 2.2（“标示清单”）。

3.4.2.4 移除、搬运和修复

SRFP 应考虑到有害物质对人员健康和/或环境的潜在不利影响，描述如何安全移除、搬运和/或清洁已在船上识别的有害物质。

有害物质的移除应只能由经适当培训的人员按针对该有害物质的工人安全措施进行。

进行移除作业的处所只要在使用，都应与其他作业处所隔离，并应清楚标记以告知所有人该区域的危险。

在移除高度毒性、爆炸性或反应性有害物质后，应由经过培训的人员对该处所进行去污和修复。

应建立有害物质移除、搬运和修复方法和程序以确保按适用的国家要求进行安全和环境无害化作业。

按授权进行拆船证明（DASR）附件（本公约附录 5）的 2.2，SRFP 应针对所识别的每一有害物质标明经授权负责移除有害物质的人员，以及证书编号或其他相关信息。

在对所有有害物质进行正常搬运时，应适当注意相关的职业接触极限。

3.4.2.5 移除后的储存和贴标签

SRFP 应描述如何将拆船活动中产生的所有废料与可回收的材料和设备隔离、进行标识以供清楚识别、并在适当的条件下暂时或长期储存。SRFP 应描述拆船厂将如何防止废料被混合或污染，从而影响后续的搬运、储存、处理、回收或处置。

3.4.2.6 处理、运输和处置

SRFP 应说明拆船厂将如何确保对从拆船厂内的船上移除的所有有害物质和废料进行环境无害化管理。如果在拆船厂进行处理或处置，SRFP 应描述将如何按照适用国家要求并以环境无害化的方式对材料进行管理。

如果将有害物质和废料送出厂外，SRFP 应描述确保其只能转移到经授权对其进行安全和环境无害化处理和处置的其他工厂的程序。

SRFP 应标明所有拆船厂外的管理和处置厂，描述这些厂将如何对材料进行管理，并标明国家和其他授权这些厂管理废料的机构所要求的所有授权书、许可、证书、批准和执照。SRFP 应包括在把有害物质和废料从拆船厂运输到其最终目的地时对其的跟踪程序，以及对相关文件，包括与分包商有关的文件的管理和保存的程序。

最终的废料管理厂应符合国家标准和要求，并应考虑到适用的国际标准和要求。

3.4.3 有害物质环境无害化管理

3.4.3.1 石棉和含石棉材料

拆船厂应主动使用 IHM 来确定石棉和含石棉材料的位置和数量。拆船厂在移除石棉和含石棉材料前，应进行识别、标记和贴标签。

有害物质清单指南（附录 5 的 2.2.2.1）中提供了对石棉的船上位置的标示清单，如要求附加评估和取样，该资料可作支持性文件使用。

为了安全移除石棉和含石棉材料，应采取下述保护措施，且 SRFP 应描述拆船厂如何执行这些措施：

1. 工人应按适用国家要求经过培训和授权移除石棉和含石棉材料；
2. 移除石棉和含石棉材料应在适任人员的监控和管理下进行；
3. 接触石棉的工人数量应控制在必要的最低限度；
4. 移除石棉和含石棉材料的作业区域应与其他工作区域隔离，且仅允许受过适当培训的人员进入。该区域应清楚张贴警告标志，说明正在进行石棉移除作业；
5. 如果移除作业包括切割、钻孔、打磨或其他可搅动易碎的石棉和含石棉材料使其散落至环境中的操作，应采取适当的保护，通过对进行移除操作的房间或处所中的区域进行隔离来防止石棉释放到空气中。常用的方法如下：
 - 用塑料膜密封该房间或处所；
 - 塑料膜应有足够的强度；
 - 如机器、设备、管子或处所无法隔离或密封（如机舱地板下的复杂而狭小区域）可用塑料薄膜进行部分防护；
 - 如果可能被隔离的区域应保持在负压下；和
 - 应尽可能鼓励在部分压力室系统下使用湿法处理含石棉材料；
6. 在墙壁和天花板等区域中含有易碎石棉材料应小心移除，并应在移除含石棉材料前采用水或适当的湿剂，以防止石棉散落到空气中；
7. 应提供工人的个人防护设备（PPE），包括呼吸防护和特殊的石棉防护服；
8. 在移除石棉后，应按以下方式对区域进行清洁：
 - 设备和工具应进行清洗/清洁，然后从该区域移走；
 - 石棉和含石棉材料在移除前应包装并密封在塑料容器中；
 - 用于隔离该区域的塑料薄膜应用水弄湿，并小心拿放，以防止石棉扩散；
 - 应使用有效的真空吸尘器清洁该区域，例如配备高效微粒空气（HEPA）过滤器的吸尘器；和
 - 在移开塑料隔离膜，允许在该区域继续进行其他作业前，应检查空气和/或处所中散布的石棉；
9. 移除石棉的工人应为进入污染区做恰当准备，并应在离开污染区前进行去污处理，

具体方法如下：

- 应不允许工人在隔离区内穿着或在其个人防护设备（PPE）下穿着休闲服；
 - 在完成隔离区内的作业后，工人应进行淋浴以去除石棉，然后进入单独的干净区域穿上衣服；和
 - 工作服不应在家里洗涤，而应打包、贴标签并在拆船厂或厂外的适当地点洗涤；
- .10 用于包装和运输被移除的石棉材料的容器应正确贴上标签，并应足够坚固和有弹性，以最大限度减少在运输中出现意外损坏或破碎的可能性。因为一旦发生损坏或破坏，会导致泄露的石棉纤维释放入空气；和
- .11 石棉不应被再次使用和回收，对其管理和最终处置应符合国家要求。

3.4.3.2 PCB 和含 PCB 材料

拆船厂应主动使用 IHM 来确定含 PCB（多氯联苯）的有害物质和废料的位置和数量。

有害物质清单指南（附录 5 的 2.2.2.2）中提供了对 PCB 的船上位置的标示清单，如要求附加评估和取样，该资料可作支持性文件使用。按 IHM 所述，PCB 可以固体和液体的形式包含在设备和材料中。由于 PCB 取样和分析程序费用高、耗时长，预先假定材料中含有 PCB 然后相应对其进行移除和管理可能更为经济。

为安全移除 PCB 和含 PCB 材料，应采取下列保护措施，且 SRFP 中应描述拆船厂如何执行这些措施：

1. 工人应经过关于移除 PCB 的特别培训和授权；
2. 应提供工人个人防护设备（PPE），包括呼吸防护和皮肤防护；
3. 应按下列方式小心移除含有 PCB 的有害物质和废料，以防止其溢出、挥发和扩散：
 - 在排空或移除充满液体的设备时应采取防溢措施，包括放置防油栅、滴油盘、衬垫和/或在设备系统或组件附近放置吸收材料；和
 - 对大多数含 PCB 的固体材料可使用喷砂、刮铲、切割、剥离或凿挖等手动、化学或机械方式移除；
4. 如果已知或怀疑存在 PCB（例如：不应燃烧含有 PCB 的电缆绝缘层、液压油、变压器用油和涂料），则不应使用高温或“热作”方法移除或回收；
5. 用于移除含 PCB 材料的设备应在使用后进行适当去污（常用的设备去污过程是用无极性色有机溶剂，如：煤油或柴油进行漂洗，然后用肥皂和水进行冲洗，再用干净的水漂洗）；使用的水或其他液体应作为废料进行适当管理；
6. 被移除的 PCB 和含 PCB 材料应适当储存在经正确标识的、供运输用的密封（对液体）或盖紧（对固体）的防漏容器中；
7. 应按下列要求设立 PCB 废料单独储存区：
 - 含有 PCB 的有害物质和废料不应与其他有害物质和废料一起储存或放置；
 - 储存区域的外部应清楚标记，标明其含有 PCB；
 - 储存区域应设有防雨保护；和
 - 应定期检查容器是否泄漏或损坏；
8. 用于包装和运输被移除的 PCB 材料的容器和车辆应正确贴上标签，并应最大限度减少运输中发生意外泄漏的可能性；和
9. PCB 不应被再次使用和回收，对其管理和最终处置应符合国家要求。

3.4.3.3 消耗臭氧物质（ODS）

拆船厂应主动使用 IHM 来确定含有消耗臭氧物质（ODS）的有害物质和废料的位置和数量。

有害物质清单指南（附录 5 的 2.2.2.3）中提供了对 ODS 的船上位置的标示清单，如要求附加检验和取样，该资料可作支持性文件使用。

SRFP 中应描述拆船厂如何执行下述保护措施以安全移处和管理 ODS:

1. 应由经培训和授权搬运此类物质的人员将 ODS 从系统中抽取出来;
2. 船上容器、设备和管系中的 ODS 不应释放入大气中;
3. ODS 的管理或销毁应符合国家标准; 和
4. 用作发泡剂并存在于冷藏区域的隔热泡沫中的 ODS 不应释放入大气中, 在拆解和处置泡沫废料时应遵循环境无害化管理。

3.4.3.4 涂料和涂层

SRFP 应描述任何高度易燃或切割时可能释放毒素的涂料和涂层的正确管理程序。

3.4.3.4.1 防污底化合物和系统（包括三丁基锡（TBT）在内的有机锡化合物）

本公约适用于所有按《国际控制有害防污底系统公约》（以下简称“防污底公约”）附则 1 规定的防污底化合物和系统。由于受目前防污底公约控制的系统仅为有机锡化合物, 本导则仅针对有机锡的正确管理。但是对未来可能需要符合防污底公约的防污底化合物, 也应进行类似考虑。

有机锡化合物包括三丁基锡（TBT）、三苯基锡（TPT）和三丁基氧化锡（TBTO）。有机锡已普遍用作船底的防污底涂料。有些船舶在有机锡外施涂一层涂层, 形成一道障碍防止该类化合物浸入海中。因此拆船厂应仔细检查 IHM, 并可能需检查船体涂料。

在拆船过程中有机锡涂料不应释放至海水或土壤里。如果作业会导致有机锡涂料的移除（无论特意移除还是其他作业如拖曳导致的附带结果）, 则作业应以环境无害化的方式进行, 以确保任何移除的有机锡涂料不会释放到海中。

有机锡涂料可采用如喷砂、化学剥离或机械清除的方式移除。但是应特别注意防止涂料的碎片散落在空气中或相邻区域。

经过喷砂的涂料应按国家要求, 以环境无害化的方式进行收集、储存和处理。

3.4.3.4.2 有毒和高度易燃涂料

除非该过程会导致释放有毒化合物或除非涂料高度易燃, 否则在拆船过程的切割前无需移除涂料。在切割已涂装的表面前, 船厂应检查涂料或涂层的易燃性和毒性。如其有毒或易燃, 建议在热切割前, 沿切割线采用机械或化学方式（如通过喷砂、刮铲或剥离）去除足够宽的一道涂料。应穿着适当的 PPE, 并应采用涂料颗粒物围护系统（特别对于喷砂操作）。

如果移除不可能或不可行, 应在受控的方式进行切割, 前提条件是采用经特别设计可提供呼吸和眼部防护的 PPE 对工人进行很好的保护。

3.4.3.5 有害液体、残余物和沉积物（例如油、舱底水和压载水）

拆船厂应主动使用 IHM 来确定船上残留的有害液体的位置和数量。拆船厂在移除这些液体前应对液舱和其他区域进行识别、标记和贴标签。

应保护残油储存舱不会泄漏、溢流、失火或发生其他潜在事故。

储存室、液舱、机器、设备和管路中的有害液体、残余物和沉积物应在安全和环境无害化的条件下移除。

压载水应按相关国家要求处理。

3.4.3.6 重金属（铅、汞、镉和六价铬）

如有害物质清单指南中所述, 重金属存在于电池、镀锌材料、电平开关、电罗经、温度计、涂层等中。放射性物质可能存在于液位计和烟雾探测器中。

含重金属的设备和其他仪器应小心移除, 以确保其不会被损坏, 并防止污染环境。可再次使用的设备和仪器应正确存放。损坏的设备和仪器应按国家法律送往适当的公司修理、回收或处置。

安装在船体上作为牺牲金属的阳极应在分段切割时移除, 并应正确管理。

3.4.3.7 其他有害物质

以上未列出和非船舶结构部分的但在 IHM 的第 II 和 III 部分列出的其他有害物质,应在安全条件下移除。

这些物质应在切割前按国家法律和法规的规定尽最大可能移除。在其从船上移除后,应使用安全和环境无害化的方法对其进行储存和处理,例如,不应燃烧含有氯化物的电缆绝缘层。

3.4.4 防止对环境的不利影响

3.4.4.1 溢出的防止、控制和应对

制定和实施溢出防止、控制和应对方案的目的是将可能对环境造成不利影响的溢出和泄漏风险降到最小。SRFP 应包括的这一方案应对拆船厂的溢出防止、响应和应对程序进行规定。该方案应规定主动防止溢出的措施和在发生溢出时应实施的程序。

通过对如下事项进行确认,该方案应至少能够证明拆船厂具有充足的围护和溢出物清洁设备和程序:

- 设有围护和牵制结构以防止排放的有害物质污染土壤和水;
- 拆船厂排水区域;
- 溢出响应设备的位置;
- 燃料驳运和卸载时应实施的环境保护措施;
- 其他油类和舱底水的位置;
- 燃料储存位置;
- 检查和记录保持程序;
- 保安程序;
- 人员培训程序;
- 溢出防止和报告程序; 和
- 拆船厂的意外事故史。

作为溢出防止、响应和应对程序的一部分, SRFP 应明确经指派的内部和外包人员(其负责管理该方案并对溢出和类似紧急情况做出响应)以及管辖该拆船厂的当地权威机构(如消防部门)。SRFP 中应包括 24 小时联系信息。SRFP 应包括对拆船厂布局的文字和图表描述,包括任何水体的位置或其他转移路线、油或其他有害物质的储存位置、燃料从船上驳运至岸上的程序、发生溢出时应实施的程序和应急响应设备的类型和位置(如吸收性物质、个人防护设备和急救设备)。

通过确认潜在的溢出或泄漏源,拆船厂可以确定应主动采取的措施,以最大限度减少拆船厂活动带来相关的风险。拆船厂对潜在溢出和泄漏源进行评审,以确定和其相关的故障类型,从而确定最恰当和有效的预防措施,这会比较有帮助。例如,圆桶除在填装外都不应打开,其应处于二级容器或横梁结构中,不应接触随着时间推移可能对其产生腐蚀的雨水。

拆船厂可用溢出防止、控制和应对方案作为手段来告知其防止和响应溢出和泄漏的举措,并可用作应急响应时的资源以及作为储存、检查和检测的信息储备。保持维护、检查和员工培训记录很重要。对溢出防止、控制和应对方案进行定期评审也是确定哪些程序能满足其预定功能并识别该方案的薄弱环节的一个有效工具。

3.4.4.2 防止雨水污染

从工业设施附近的雨水径流对环境有潜在的不利影响。有害物质和废料经不当储存和搬运后与雨水接触后会增加环境恶化的风险。SRFP 应包括一个方案,以规定为最大限度减少拆船厂雨水潜在污染应实施和保持的措施。

雨水污染防治方案应包括对拆船厂中所有可能会与雨水、附近受纳水体和雨水排放系统接触的潜在污染源进行识别。应绘制一份描绘该信息的厂地地图。

在编制了厂地地图后,应进行评估以确定相应的控制措施。实施控制措施的目的是为了

减少雨水污染的威胁、控制腐蚀和沉积以及保护附近的自然资源。控制措施中可包括最佳管理举措、维护和检查方案、员工培训和报告。

例如，拆船厂中的一个潜在污染源是对存放从船上卸载的燃料的圆桶、液柜或其他容器的储存。燃料驳运和储存包括多种潜在污染源，如在驳运时燃料溢出和泄漏至水或地面、圆桶或容器发生泄漏或圆桶存放区域发生溢流。为最大限度减少雨水污染对环境造成风险的控制措施可包括将圆桶和其他容器储存在半固定或固定遮盖物下、通过适当尺寸的二级围护控制圆桶存放区域的溢出或径流、对圆桶存放区进行日常检查以及建立适当的发生溢出或泄漏时的清洁程序。

制定预防措施是最大限度减少污染物通过雨水排放的最有效的方法。保持维护、检查和员工培训记录这点很重要。对雨水管理方案进行定期评审也是确定哪些最佳管理举措能满足其预定功能并识别方案的薄弱环节的一个有效工具。

3.4.4.3 碎片防止和控制

通过拆船活动导入海洋环境的碎片对环境有潜在的不利影响。SRFP 应包括一个方案，用以确定为最大限度减少碎片沉积入水中的潜在风险应实施和保持的措施，包括对一些区域的维护，这些区域中的碎片可能通过风、雨水、潮汐或径流转移到海洋环境中。应实施控制措施以减少碎片沉积的可能性。

3.4.4.4 事故和溢出报告程序

SRFP 应描述事故和溢出报告程序，至少包括下列信息：

- 拆船厂的责任小组、部门或人员的任务和职责是如何分配的，以及其在发生事故时候的报告职责；
- 报告程序是如何与应急部署和响应计划（EPRP）相关联的；
- 与当地社区的通信链以获得任何必要的援助；和
- 向公众提供信息并开展事故后调查和发布事故后报告的程序。

附录 1 拆船厂计划建议格式

拆船厂计划

1 拆船厂管理

- 1.1 公司信息
- 1.2 培训程序
- 1.3 工人管理
- 1.4 记录管理

2 拆船厂操作

- 2.1 拆船厂信息
- 2.2 许可、执照和发证
- 2.3 对船舶的接受
- 2.4 制定拆船计划 (SRP)
- 2.5 船舶抵达管理
- 2.6 拆船方法
- 2.7 完工报告

3 工人安全和健康符合方法

- 3.1 工人健康和安全的
- 3.2 关键安全和健康人员
- 3.3 工作危险评估
- 3.4 防止对人员健康的不利影响
 - 3.4.1 进入安全程序
 - 3.4.1.1 进入安全标准
 - 3.4.1.2 确定进入安全的适任人员
 - 3.4.1.3 进入安全检查和检测程序
 - 3.4.1.4 氧气
 - 3.4.1.5 易燃空气
 - 3.4.1.6 有毒、腐蚀性、刺激性或烟熏后的空气和残余物
 - 3.4.1.7 适任人员确认“进入安全”
 - 3.4.1.8 进入安全证书、警告标志和标签
 - 3.4.1.9 进入安全操作措施
 - 3.4.2 热作安全程序
 - 3.4.2.1 热作安全标准
 - 3.4.2.2 确认热作安全的适任人员
 - 3.4.2.3 热作安全检查、检测和确认
 - 3.4.2.4 热作安全证书、警告标志和标签
 - 3.4.2.5 热作安全操作措施
 - 3.4.3 焊接、切割、打磨和加热
 - 3.4.4 圆桶、容器和压力容器
 - 3.4.5 防止从高处坠落和坠落物引起的事故
 - 3.4.6 索具和材料搬运的传动装置和设备
 - 3.4.7 总务管理和照明

3.4.8 工具和设备的维护和去污

3.4.9 健康和卫生

3.4.10 个人防护设备

3.4.11 工人接触和医疗监控

3.5 应急部署和响应计划

3.6 火灾和爆炸预防、探测和响应

4 环境符合方法

4.1 环境监控

4.2 有害物质管理

4.2.1 潜在含有有害物质

4.2.2 附加取样和分析

4.2.3 识别、标记和贴标签及潜在船上位置

4.2.4 移除、搬运和修复

4.2.5 移除后的储存和贴标签

4.2.6 处理、运输和处置

4.3 有害物质环境无害化管理

4.3.1 石棉和含石棉材料

4.3.2 PCB 和含 PCB 材料

4.3.3 消耗臭氧物质 (ODS)

4.3.4 涂料和涂层

4.3.4.1 防污底化合物和系统 (包括三丁基锡 (TBT) 在内的有机锡化合物)

4.3.4.2 有毒和高度易燃涂料

4.3.5 有害液体、残余物和沉积物 (例如油、舱底水和压载水)

4.3.6 重金属 (铅、汞、镉和六价铬)

4.3.7 其他有害物质

4.4 防止对环境的不利影响

4.4.1 溢出的防止、控制和应对

4.4.2 防止雨水污染

4.4.3 碎片防止和控制

4.4.4 事故和溢出报告程序

拆船厂计划附件

拆船厂地图

组织机构图

许可、执照和发证

简历

附录 2

SRFP 中拆船信息示范格式

（关于 3.2.1（拆船厂信息）和 3.2.2（许可、执照和发证））

拆船厂名称和联系信息			
拆船厂名称			
注册地址			
拆船厂地址			
代表和通信地址			
员工人数			
电话号码		传真号码	
邮箱地址		URL	
工作语言			

拆船厂能力	
最大拆船能力	DWT GT LDT 长 宽(<u>breadth</u>) 宽(<u>width</u>) 深
可接受的船舶类型 年度拆船能力（以 LDT 计）	

废料管理能力	
石棉	移除 储存 加工
消耗臭氧物质	移除 储存 加工
多氯联苯（PCB）	移除 储存 加工
防污底化合物和系统	移除 储存 加工
镉和镉化合物	移除 储存 加工
六价铬和六价铬化合	移除

	储存 加工
铅和铅化合物	移除 储存 加工
汞和汞化合物	移除 储存 处理 加工
多溴化联(二)苯 (PBB)	移除 储存 处理 加工
多溴二苯醚 (PBDE)	移除 储存 处理 加工
多氯化萘 (多于 3 个氯原子)	移除 储存 处理 加工
放射性物质	移除 储存 处理 加工
某些短链氯化石蜡 (烷烃、C10-C13、氯)	移除 储存 处理 加工
有害液体、残余物和沉积物	移除 储存 处理 加工
高度易燃和/或导致毒性释放的涂料和涂层	移除 储存 处理 加工
其他以上未列出的非船舶结构部分的有害物质 (请列明)	移除 储存 处理 加工

拆船厂设备和其他信息			
拆船厂面积 (m ²)		道路面积 (m ²)	
拆船厂描述 (布局、水深、可达性等)			
起重设备	如：旋臂起重机：60 吨		
	可移动式起重机：35 吨×1、27 吨×1		
	液压反铲：SH400、ZX330、SK220、ZX200 带剪切、磁铁		
	液压剪切机：600 吨×1		
	地磅：50 吨		
艇	如：总吨：5 吨、功率：240PS		
剪切机	如：容量 600 吨		
O ₂ 供应	如：液化 O ₂ 供应系统：10 m ³		
气体供应	如：LPG 气瓶		
压缩空气			
灭火器	如：手提式灭火器		
废油处理	如：油水分离舱 舱容：约 20 吨		
废物储存	如：储存石棉的集装箱：2		
焚烧炉	如：无		
电力供应	如：变电站		

位置	
位置的划分和分类	如：城市化控制区域
周边环境	如：工厂：前采石场、附近有两个码头
	住宅：入口处和距入口 200 米处有私人住宅

拆船厂证书和执照 (如适用请说明：发证机构、有效期、证书编号等) ①	

① 此处列出任何适用证书，例如与废料处理、废料运输相关证书或其他相关证书：如与环境绩效管理系统相关的、和/或职业健康和安全的证书。

工人证书/执照	
证书/执照	姓名
1) 石棉搬运管理	Yxxxxx***** 先生 1 人
2) PCB 搬运管理	Yxxxxx***** 先生 1 人
3) 指定化学品搬运	无
4) 石棉搬运班组	***** 先生
	***** 先生
	***** 先生 3 人
5) 气割	***** 先生
	***** 先生
	***** 先生 3 人
6) 焊接	***** 先生 1 人
7) 锌处理	***** 先生 1 人
8) 起吊	***** 先生
	***** 先生
	***** 先生 3 人
9) 大型起重机	***** 先生
	***** 先生 2 人
10) 船员	***** 先生 1 人
11) 潜水员	无
12) 有害物质移除 (A 物质)	***** 先生 2 人
(B 物质)	***** 先生 2 人

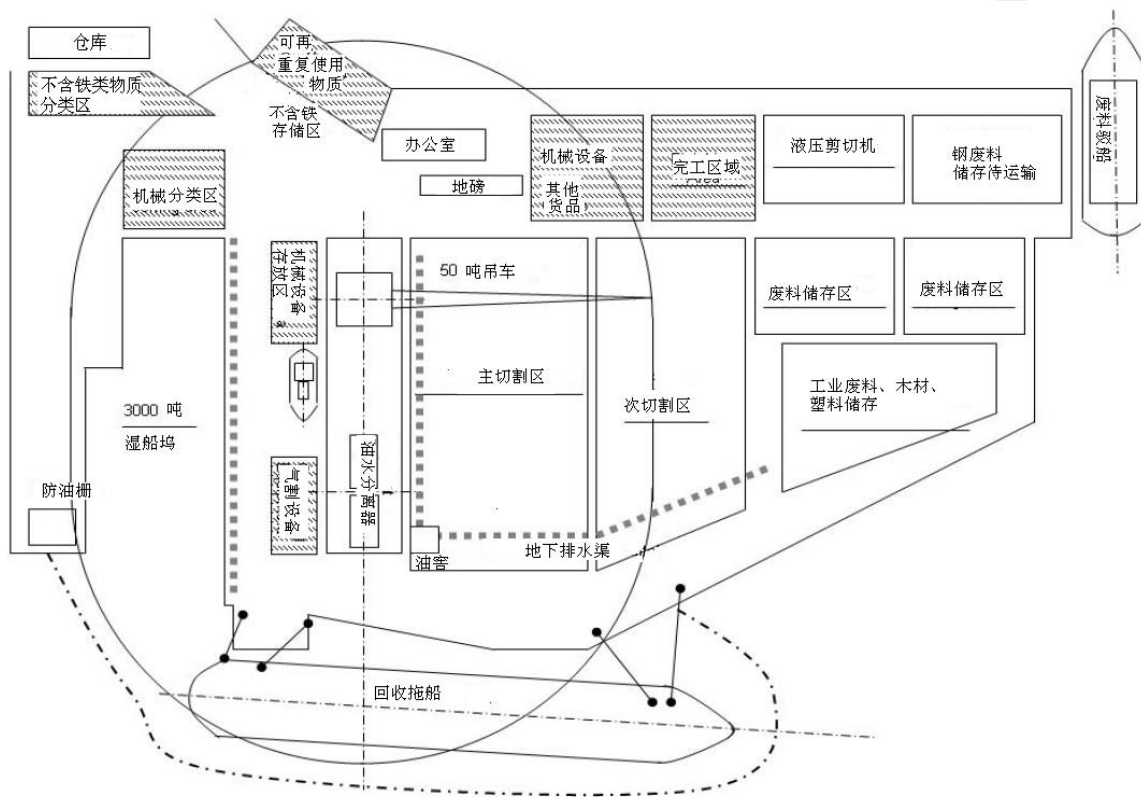
分包商信息 ^①			
分包商名称			
注册地址			
代表和通信地址			
服务范围			
服务执照			
员工人数			
电话号码		传真号码	
邮件地址		URL	

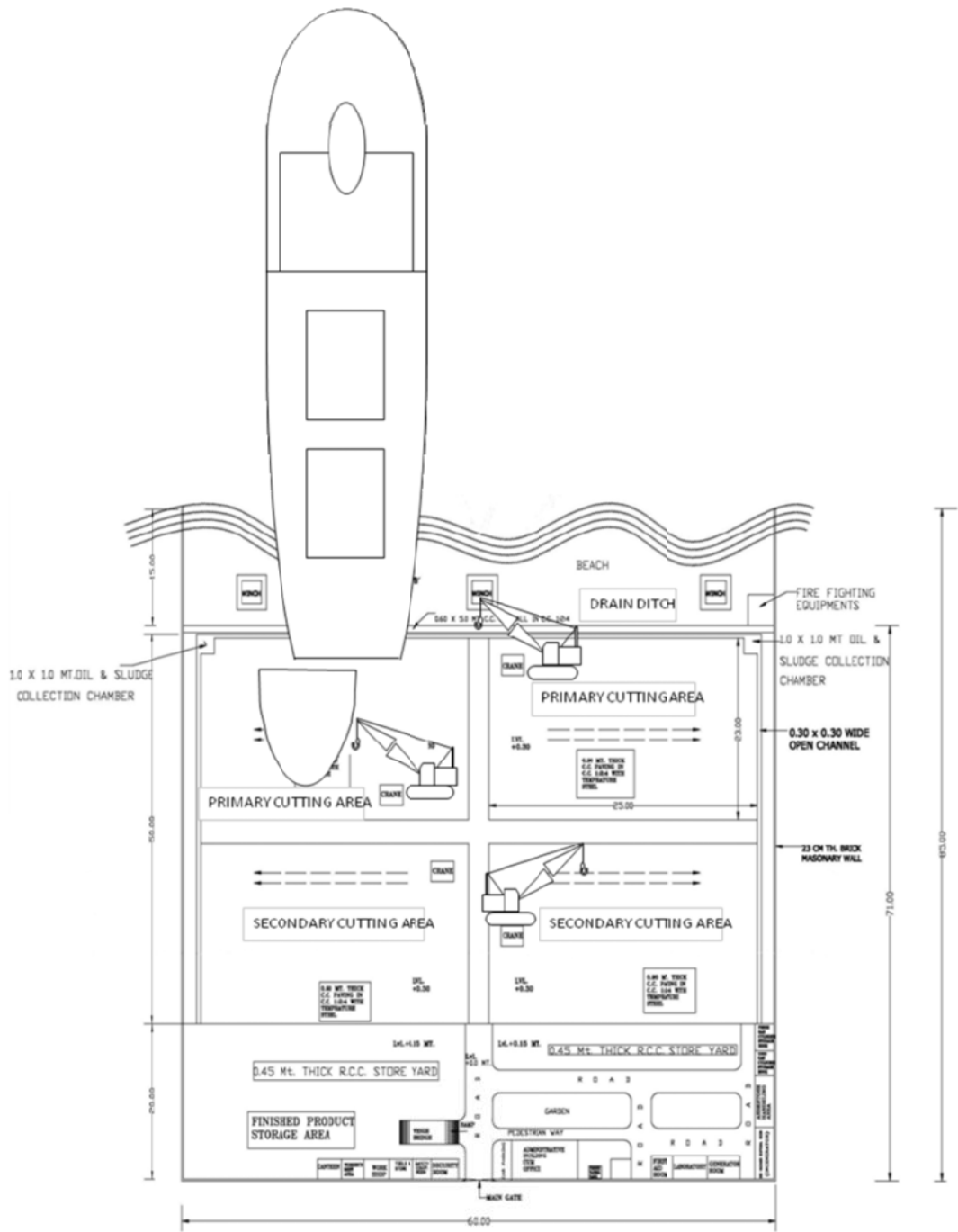
① 提供与拆船厂的分包商服务相关的所有信息。

场地地图

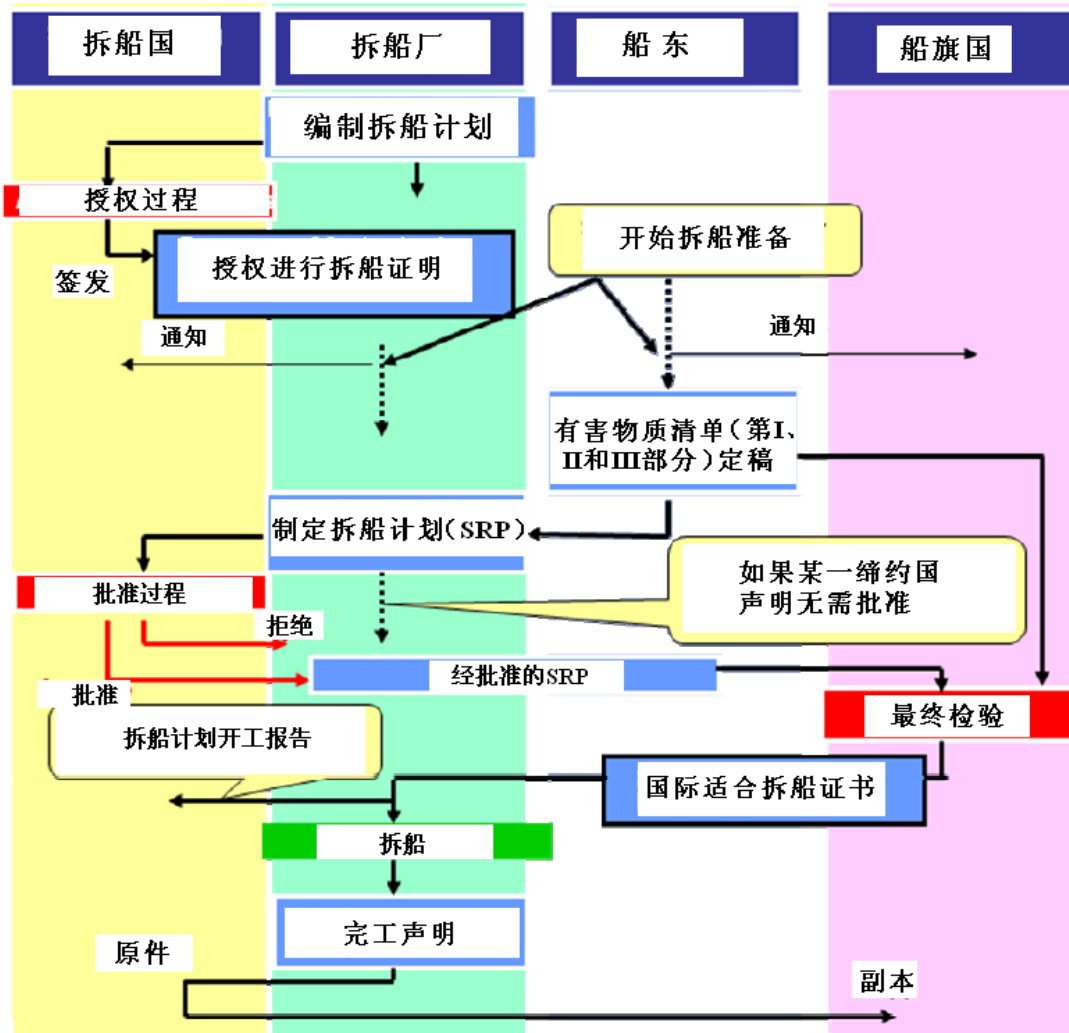
拆船厂平面（示例）

拆船厂平面图应包括在拆船厂信息中。





附录 3
拆船过程（从准备直至完工）



各利益相关方职责			
本公约附则第 16 条 -对拆船厂的授权 本公约附则第 9 条 - 批准 SRP 本公约附则第 25 条 -向船旗国发送声明副本	本公约附则第 18 条 -制订 SRFP 本公约附则第 9 条 - 制订船舶特定的 SRP 本公约附则第 24 条 - 将意向通知其主管当局 - 向其主管当局报告拆船计划开工时间 本公约附则第 25 条 - 签发完工声明并向其主管当局报告	本公约附则第 5 条 - 船上携带有害物质清单 - 最终确定有害物质清单包括第 II 和 III 部分 第 8 条 - 向拆船厂提供信息	本公约附则第 10 条 - 验证有害物质清单、SRP 和 DASR

附录 4 国际劳工组织相关文件 (ILO)

基本 ILO 公约

- 《1999 年最恶劣形式的童工劳工公约》 (第 182 号)
- 《1973 年最低年龄公约》 (第 138 号)
- 《1958 年 (就业和职业) 歧视公约》 (第 111 号)
- 《1957 年废除强迫劳动公约》 (第 105 号)
- 《1951 年同酬公约》 (第 100 号)
- 《1949 年组织权利和集体谈判权利公约》 (第 98 号)
- 《1948 年结社自由和保护组织权利公约》 (第 87 号)
- 《1930 年强迫劳动公约》 (第 29 号)

有关职业安全 and 健康及工作条件的公约

- 《2006 年促进职业安全 and 健康框架公约》 (第 187 号)
- 《1993 年防止重大工业事故公约》 (第 174 号)
- 《1990 年夜间工作公约》 (第 171 号)
- 《1990 年化学品公约》 (第 170 号)
- 《1986 年石棉公约》 (第 162 号)
- 《1985 年职业健康服务机构公约》 (第 161 号)
- 《1981 年职业安全 and 健康公约 2002 年议定书》 (第 155 号)
- 《1981 年职业安全 and 健康公约》 (第 155 号)
- 《1981 年集体谈判公约》 (第 154 号)
- 《1979 年职业安全 and 健康 (船坞工作) 公约》 (第 152 号)
- 《1977 年工作环境 (空气污染、噪声和振动) 公约》 (第 148 号)
- 《1974 年职业癌症公约》 (第 139 号)
- 《1971 年苯公约》 (第 136 号)
- 《1971 年工人代表公约》 (第 135 号)
- 《1967 年最大负重量公约》 (第 127 号)
- 《1964 年工伤津贴公约》 (第 121 号)
- 《1963 年机器防护公约》 (第 119 号)
- 《1960 年辐射防护公约》 (第 115 号)

ILO 操作规则

《2005 年港口安全 and 健康》 ISBN 92-2-115287-1

内容概要: 安全 and 健康管理; 工作安全体系; 港口基础设施、工厂和设备; 起重设备和可卸部件; 起重设备和可卸部件的安全使用; 海上操作; 健康; 个人福利设施; 应急布置; 起重设备和可卸部件检测。

《2004 年拆船安全 and 健康: 亚洲国家和土耳其指南》 ISBN 92-2-115289-8 (印刷版), ISBN 92-2-115671-0 (网络版)

内容概要: 一般职责、责任和权力及框架; 职业安全 and 健康管理; 职业健康服务; 作业规划; 预防和保护措施; 有害物质管理; 防止物理、生物、人机工程和心里危害的措施; 工具、机器和设备安全要求; 能力和培训; 个人防护设备和防护服; 意外和应急部署; 特殊保护; 福利。

《2003 年非铁金属行业安全和健康》 ISBN 92-2-111640-9

内容概要：一般预防和保护原则；特定于非铁金属生产过程的预防和保护；回收非铁金属；对有害物质、电场和磁场、光辐射、热噪声和振动的职业接触极限。

《2001 年工作场所中的环境因素》 ISBN 92-2-111628-X

内容概要：一般义务、职责、责任和权力；一般预防和控制原则；有害物质；电离辐射；电场和磁场；光辐射；热和冷；噪声；振动；职业接触极限。

《1996 年工作场所中酒精和药物相关问题管理》 ISBN 92-2-109455-3

内容概要：制定工作场所中酒精和药物规定；通过好的雇佣制度来减少酒精和药物相关问题的措施；对工作场所中酒精、合法和非法药物的限制；通过信息、教育和培训程序进行预防。

《1996 年海上和在港船上事故预防》 ISBN 92-2-109450-2

内容概要：船上紧急情况 and 应急设备；安全进入船舶的通道；在船舶附近安全移动；进入和在围蔽或密闭处所工作；人工抬起和搬运；工具和材料；焊接、火焰切割和其他热作；在高空和舷外作业；涉及有害和刺激性物质和放射物的作业；对电线和纤维绳的保养；在机械处所工作。

《1996 年对职业事故和疾病的记录和通知》 ISBN 92-2-109451-0

内容概要：对职业事故、职业疾病和危险事故的记录、通知和调查及相关的统计数据。

《1993 年工作中化学品使用安全》 ISBN 92-2-108006-4

内容概要：分类体系；标签和标记；化学品安全数据表；操作控制措施；工作系统和实践；个人防护；工作场所中的监控；医疗和健康监督；事故、职业疾病和其他意外事件的调查和报告。

《1988 年向发展中国家转移技术时的安全、健康和工作条件》 ISBN 92-2-106122-1

内容概要：附录 A：职业安全和健康检查表，以对工厂或生产过程的设计和进行操作进行危险控制。

《1984 年石棉使用安全》 ISBN 92-2-103872-6

内容概要：接触极限；工作场所中的监控；一般预防方法；个人防护；房产和工厂的清扫；包装、运输和储存；石棉废料的处理；对工人健康的监督；在港口和集装箱码头搬运石棉纤维；建造、拆除和更改作业；不同国家的接触极限。

《1983 年钢铁行业职业安全和健康》 ISBN 92-2-103471-2

内容概要：工作站、工作场所、行车道和设置的基本要求；维护、修理和拆除；电、工具、机器防护和气体系统；运输和搬运；对健康有害的物质和介质；工作服和个人防护设备；医疗服务和监督、安全和健康组织、卫生和福利。

《1974 年船舶建造和船舶维修安全和健康》 ISBN 92-2-101199-2

内容概要：工作场所、其方法和设备；搭脚手架和台子；梯、台阶、通道和坡道；起重设备；绳、链和附件；手动工具、便携式电工工具；涉及有害和刺激性物质和放射物的作业；焊接、火焰切割和其他热作；在密闭处所和危险空气下作业；水运工人；工作服和个人防护设备；医疗服务和监督、安全和健康组织、卫生和福利。

其他指南

《ILO-OSH 2001 年职业安全与健康管理体系指南》 ISBN 92-2-111634-4

内容概要：组织中的职业安全与健康管理体系；方针；组织；计划和实施；评估；改进措施。

附录 5

联合国环境规划署（UNEP）和其他机构相关文件和参考资料

文件

《1989 年控制危险废物越境转移及其处置巴塞尔公约》

《2001 年斯德哥尔摩持久性有机污染物（POP）公约》

《1987 年关于消耗臭氧层物质的蒙特利尔议定书》

参考资料^①

《船舶完全或部分拆除时环境无害化管理技术指南》

<http://www.basel.int/Portals/4/Basel%20Convention/docs/meetings/sbc/workdoc/techships-e.pdf>

《发展中国家有害废料管理培训资源包》

<http://www.basel.int/pub/pub.html>

《经更新的对含有持久性有机污染物（POP）、由其构成或经其污染的废料的环境无害化管理一般技术指南》

<http://www.basel.int/Portals/4/Basel%20Convention/docs/pub/techguid/tg-POPs.pdf>

《经更新的对含有多氯联苯（PCB）、聚氯三联苯（PCT）或多溴化联(二)苯（PBB）、由其构成或经其污染的废料的环境无害化管理一般技术指南》

<http://www.basel.int/Portals/4/Basel%20Convention/docs/pub/techguid/tg-PCBs.pdf>

《由元素汞构成的废料和包含汞或经汞污染的废料的环境无害化管理技术指南》

<http://www.basel.int/Implementation/TechnicalMatters/DevelopmentofTechnicalGuidelines/AdoptedTechnicalGuidelines/tabid/2376/Default.aspx>

《巴塞尔公约原为石油和来源于石油的废油技术指南》

<http://www.basel.int/Portals/4/Basel%20Convention/docs/meetings/sbc/workdoc/old%20docs/tech-y8.pdf>

《废铅酸电池环境无害化管理技术指南》

<http://www.basel.int/Portals/4/Basel%20Convention/docs/pub/techguid/tech-wasteacid.pdf>

《巴塞尔公约废油提炼或其他废油重用技术指南》

<http://www.basel.int/Portals/4/Basel%20Convention/docs/meetings/sbc/workdoc/old%20docs/tech-r9.pdf>

《金属和金属化合物环境无害化回收/再利用技术指南》

<http://www.basel.int/Portals/4/Basel%20Convention/docs/pub/techguid/r4-e.pdf>

《生物医学和卫生保健废料环境无害化管理技术指南》

<http://www.basel.int/Portals/4/Basel%20Convention/docs/pub/techguid/tech-biomedical.pdf>

《巴塞尔公约特制的垃圾填埋场技术指南》

<http://www.basel.int/Portals/4/Basel%20Convention/docs/meetings/sbc/workdoc/old%20docs/tech-d5.pdf>

《巴塞尔公约陆地焚烧炉技术指南》

<http://www.basel.int/Portals/4/Basel%20Convention/docs/meetings/sbc/workdoc/old%20docs/tech-d10.pdf>

^① 可登陆以下网址获得完整的巴塞尔公约技术指南：

<http://www.basel.int/Implementation/TechnicalMatters/DevelopmentofTechnicalGuidelines/AdoptedTechnicalGuidelines/tabid/2376/Default.aspx>.

《巴塞尔公约有害废料—物理化学处理—生物处理技术指南》

<http://www.basel.int/Portals/4/Basel%20Convention/docs/meetings/sbc/workdoc/old%20docs/tech-d8d9.pdf>

《联合国危险物品运输建议书》

<http://www.unece.org/trans/danger/publi/unrec/English/Recommend.pdf>

《联合国化学品分类和标记全球协调系统（GHS）》

http://www.unece.org/trans/danger/publi/ghs/ghs_rev03/03files_e.html

附录 6

拆船厂应准备搬运的船上发现的物质

(包括在有害物质清单 (IHM) 第 III 部分中)

煤油
石油溶剂
润滑油
液压油
防粘剂
燃料添加剂
发动机冷却剂添加剂
防冻液
锅炉和给水处理和试验试剂
脱离子剂再生化学品
蒸发器定量和除锈酸
涂料稳定剂/锈稳定剂
溶剂/稀释剂
涂料
化学制冷剂
电池电解液
酒精/甲基化酒精
乙炔
丙烷
丁烷
氧气
二氧化碳
全氟化碳 (PFC)
甲烷
氢化氟烃 (HFC)
一氧化二氮 (N₂O)
六氟化硫 (SF₆)
燃料舱: 如燃油
油脂
燃料气体
电池 (包括铅酸蓄电池)
农药/杀虫剂喷雾剂
灭火器
化学清洁剂 (包括电气设备清洁剂、除积碳器)
清洁剂/漂白剂 (潜在液体)
各种药品
消防服和个人防护设备
含有有害物质的备件

环保会 MEPC.211(63)决议
(2012年3月2日通过)

2012年拆船厂授权导则

海上环境保护委员会，

忆及国际海事组织公约第38(a)条关于防止和控制海洋污染的国际公约赋予海上环境保护委员会的职能，

还忆及2009年5月举行的国际安全与环境无害化拆船会议通过的《2009年香港国际安全与环境无害化拆船公约》（香港公约），以及六份会议决议，

注意到香港公约附则第16.1条要求缔约国应参照本组织制定的指南，对适用本公约的船舶进行拆除，或按香港公约正文第3.4条视作类似的船舶进行拆除的拆船厂予以授权，

还注意到香港公约附则第15.3条要求各缔约国应建立机制确保拆船厂符合本公约要求，包括建立和有效使用各项检查、监控和执行规定，该机制可包括审核计划，由主管当局或缔约国认可的组织参照本组织制定的指南实施，

牢记国际安全与环境无害化拆船会议在其决议4中提请本组织将制定全球统一和有效实施及执行公约相关要求的指南作为一项紧急事宜，

在其63届会议上**审议了**拆船工作组制定的2012年拆船厂授权导则草案，

1. **通过**《2012年拆船厂授权导则》，其文本载于本决议附件；
2. **提请**各国政府尽快或在香港公约对其适用时应用本导则；和
3. **要求**本委员会对本导则保持审议。

附件
2012年拆船厂授权导则

目录

1 引言

1.1 本导则的目的

1.2 本导则的方法

2 定义

3 确定负责授权的主管当局

4 授权申请

4.1 通则

5 签发授权进行拆船证明（DASR）的必要文件

5.1 通则

5.2 管理有害物质

5.3 其他要求

6 文件验证

7 现场检查

8 DASR 的签发、修正、中止、撤销和换新

8.1 通则

8.2 确保建立和有效使用各项检查、监控和执行规定的机制

8.3 签发

8.4 修正

8.5 中止

8.6 撤销

8.7 换新

9 有效期

10 资料的送交

10.1 主管当局认可的组织

10.2 违章事件和制裁

1 引言

1.1 本导则的目的

本导则为缔约国按《2009年香港国际安全与环境无害化拆船公约》（以下简称“本公约”）的要求建立拆船厂授权机制提供建议。

本导则应主要由主管当局和主管当局认可的组织予以使用。本导则还可能对拆船厂为授权过程做准备有用。

1.2 本导则的方法

本公约正文第6条和附则第16条要求参照本组织制定的指南对适用本公约的船舶进行拆除，或按本公约正文第3.4条视作类似的船舶进行拆除的拆船厂予以授权。

本导则为建立拆船厂授权机制提供指导，包括下列方面：必要文件、文件验证、现场检查、审核计划、与签发、修正、中止、撤销和换新授权进行拆船证明（DASR）有关的具体程序性活动、DASR的有效期、资料的送交和对拆船厂活动的监控。

2 定义

本导则所用术语与本公约中定义的术语含义相同。就本导则而言，适用以下附加定义。

2.1 主管当局认可的组织系指经主管当局按本公约附则第16.2条和第16.3条指定的，代表主管当局执行相关任务的组织。

2.2 确定系指主管当局决定是否签发、修正、中止、撤销或换新DASR的过程。

3. 确定负责授权的主管当局

根据本公约要求，缔约国应指定一个或多个主管当局负责对其管辖范围内的拆船厂进行授权。主管当局应确定一个单一联络点作为主管当局、主管机关和拆船厂之间的中心通信伙伴。主管当局可委托其认可的组织对拆船厂进行授权（第16.2条）。缔约国应确定委托主管当局认可的组织进行拆船厂授权的程度，并将其授权给这些组织的具体责任和授权条件通知本组织，以分发至各缔约国。对主管当局认可的组织的授权程度因各缔约国决定而不同。在任何情况下，主管当局都应对授权书完全负责（第16.3条）。此后本导则中的“主管当局”应解释为“主管当局”或“主管当局认可的组织”，取决于各缔约国对该组织授权的程度。

在承担主管当局委托的职责时，主管当局认可的组织应与主管当局相协调。

主管当局应确保其认可的组织参照本组织制定的指南具备从事授权任务的相关资质和专业知识。

如果主管当局认可的组织被委托进行拆船厂授权，则应在该组织和主管当局之间建立一套信息流跟踪系统。

主管当局应对其认可的组织建立评估、控制和审核系统。

4. 授权申请

4.1 通则

拆船厂应向主管当局提交拆船授权申请。正式申请应附上一份填写完整的拆船厂计划（SRFP）。拆船厂和主管当局可在正式申请提交前进行初步讨论。

主管当局应注意到在地区和/或国家法律和规则中规定的本公约范围之外的任何要求和义务，并适用于在其管辖范围内作业的拆船厂。

本公约或本导则不妨碍缔约国以可能顾及技术发展，先进操作、规范和标准的技术标准、操作规则和/或导则对本公约的要求进行补充，以进一步降低对职业健康和环境造成的风险和其他任何与拆船有关的不利影响，也不妨碍在进行拆船厂授权过程中使用这些补充要求。

拆船厂应提交一份正式申请并确保其填写完整。拆船厂有责任评估其作业产生的影响并论证应如何管理拆船作业，以符合本公约和相关国家和/或地区法律的要求。

如果申请不完整，主管当局可要求附件文件和/或退回申请。拆船厂可在申请中利用或附上其他资料来源，并如适合时，鼓励使用现有资料。

5. 签发授权进行拆船证明（DASR）的必要文件

5.1 通则

《安全与环境无害化拆船导则》（“拆船厂导则”）中所述和第 18 条要求的 SRFP 应用作签发 DASR 的主要文件。

适用的国际或国内法律要求的其他任何文件和/或证书，包括与拆船活动相关的文件和/或证书，应与申请一同提交。

主管当局应确保拆船厂具备一个管理系统并在文件中有所描述，同时具备旨在保护人员健康和环境免受任何不可接受的风险的相关程序和技术。主管当局应检查 SRFP 是否包括本公约附则第 18 条规定的政策、计划、系统和其他因素。

5.2 管理有害物质

主管当局应检查拆船厂是否已建立、执行并维护了对有害物质和废料的环境无害化管理程序。

主管当局应检查拆船厂是否具备程序确保在经过适当培训和配备装备的工人在切割之前对有害物质清单中列明的所有有害物质在最大可能的范围内予以识别、标记、包装和拆除，然后存放并由特许车辆运送至废料管理厂。

主管当局应检查拆船厂是否已建立程序在签发 DASR 之前将所有有害物质和废料送至经授权的废料管理和处置场地。证明这些场地符合国家规则^①的文件也应经主管当局检查。主管当局应确保拆船厂已建立程序管理所有拆船活动产生的废料，这些废料应与可回收材料和设备分隔放置并予以标记，在不会对工人、人员健康或环境带来风险的条件存放。

5.3 其他要求

拆船厂应采取所有必要措施以满足适用的国际和国家法律要求。

拆船厂应确保计划中的和进行的活动尊重拆船厂所在地和作业地适用的国家法律和规则中关于土地使用所规定的限制。

主管当局可要求对拆船厂进行环境影响研究。在这种情况下应考虑下列指导。

可进行研究以评估拆船厂造成的潜在环境影响作为确定和优先考虑拆船厂环境因素的依据。如果计划一个新的拆船厂，研究可提供确定该地点是否适合拆船活动的依据。如果实际项目包括一个已经用作拆船或类似活动的场地，则研究可包括对该地点的环境评估。建议在计划阶段尽早开展研究。

研究可特别强调拆船厂是否对包括但不限于下列因素有不利影响，且这些影响是否在适用的国际和/或国内法律规定的可接受的限制范围内：

- 特别区域的动植物；
- 水文地质；
- 地表和地下水；
- 土壤结构；
- 历史、文化、社会和经济价值；和
- 空气质量。

研究可特别关注释放造成的重大环境影响，确定并量化可能向任何媒介释放的污染物质及其影响。着重注意大规模释放和更有害污染物的释放，这些释放可能造成最重大的影响。

^① 如果这些规则依据适用的国际协议，该协议也应予以参考。

相反，任何不可能造成任何严重影响的低级别释放无需进行评估。但是，应考虑到其他能用相同方式造成污染的物质。

研究可特别注意：

1. 原料的消耗和性质：

可考虑选择使用更少的资源或使用不太可能带来有害或污染风险的物质；

2. 废料问题：

可考虑年度物料流，物料流由进厂拟拆除的船舶以及产生并流出拆船厂的废料组成。这可包括拆船厂可接收和存放的废料类别，取决于拆船厂计划拆除的船舶，对每一类别：

- 拆船厂可接收的最大数量；
- 对每种废料的_{最大}储存容量；和
- 拆船活动过程中造成的环境危害和可能减轻对环境造成负面影响的措施。

3. 事故：

可考虑由可能发生的事故带来的环境危害及其相关风险，包括为降低风险和危害而采取的措施的可行性和对事故的响应；和

4. 场地恢复：

可考虑拆船作业是否会有污染场地的风险，包括提前计划报废以及在关闭后恢复场地。

在某些情况下需要判断不同环境影响的相对严重性。进行比较时，某些基本参数可有助于得出结论。例如，当其他所有因素，诸如直接严重性相同时，长期不可逆的影响比短期可逆影响更严重。

6. 文件验证

主管当局应对申请，包括其文件进行评估和验证。应在合理的时间段内完成评估和验证，如可能应在3个月内。

文件经审议和评估之后，评估和验证的过程应包括进行一次第7节中规定的现场检查。

如果申请被拒，主管当局应通知拆船厂拒绝的原因。

7. 现场检查

现场检查应在拆船厂进行。主管当局负责计划和执行现场检查。现场检查可涉及或使用当地或国家劳动监察机构的指导和报告。

现场检查的主要目的是检查文件与拆船厂实际布置和作业的一致性。

首次现场检查应提前告知拆船厂以确保可能遇到所有相关人员。

现场检查之前、之中和之后，应由拆船厂提供所有必要的资料。

应考虑安全问题并在整个现场检查过程中采取足够的预防措施，包括与人员保护有关的措施。

检查应关注所建立布置的功能性，重点是安全和环境保护以及对包括有害废料和碎片在内的物质的处理。检查应涵盖拆船厂包括分包商在内的全体工作人员以最大产能作业的情况。

现场检查应验证具有SRFP且得到完全执行。应特别验证下列因素：

1. SRFP对拆船厂所有人员的可用性；

2. 通过采访所有类别人员和监督演习的方式评估管理层、适任人员和根据被指派的任务和职责划分的工人，包括诸如急救人员和消防员在内的具有特殊职责人员对SRFP的了解；和

3. 通过对下列作业程序的执行验证对SRFP目标的实施：

- 船舶准备过程；

- 监控进入安全和热作安全条件；
- 拆解过程；
- 热作过程；
- 有害物质和废料管理（保护措施和拆除、运送、存放和处理）；和
- 应急部署。

现场检查应为下列活动确定例行程序：

1. 制订和使用拆船计划；
2. 按照有关要求和要求的证书接受船舶；
3. 报告和后续事件；和
4. 根据本公约规则的要求以安全和环境无害化的方式进行作业。

现场检查应验证申请中所述的拆船厂的可用性、规模，限制和一般机构设置。任何为便于拆船过程而建立的布置应在检查报告中予以描述，与拆船厂作业有关的任何限制也应在报告中描述。

应对所有使用建立的程序、方法、布置和设施拆除、存放、加工（焚烧、再利用和特定处理），运送和处理有害物质和废料的场地进行检查。检查应验证拆船厂是否设计并建造以管理申请中包括的任何有害物质和废料。

如果拆船厂以分包的形式通过一个或多个承包商从事与本公约要求相关的任何活动，应对承包商进行相同的验证就如同拆船厂自身从事活动一样。拆船厂负责向主管当局提供要求的资料以验证上述承包商，作为对拆船厂总体评估的一部分。

现场检查还应包括一次实际测试以评估对与应急部署和响应相关的措施的执行。这可包括对拆船厂进行一次不予通告的完整评估或在应急部署和响应计划中规定的类似程序。

主管当局应具有向拆船厂提供详细资料和授权过程分析的程序。这种程序可包括主管当局提供给拆船厂的书面报告，内容包括检查数据和对结果的评估。

DASR的附件（本公约附则的附录5）可用作计划现场检查的指导。

如果拆船厂在建或未完全作业，应尽实际可行进行现场检查，主管当局可根据某些要求和条件视情况签发DASR。在此情况下，在拆船厂完全作业之后应进行一次附加的后续现场检查。根据后续现场检查的结果，主管当局可中止、修正或撤销DASR。

8. DASR的签发、修正、中止、撤销和换新

8.1 通则

如本公约附则第16.5条规定，缔约国应确定签发、撤销、中止、修正和换新授权书的期限。

8.2 确保建立和有效使用各项检查、监控和执行规定的机制

按本公约附则第15.3条规定，各缔约国应建立机制确保建立和有效使用各项检查、监控和执行规定，包括进入权和采样权。该机制可包括审核计划，由主管当局或主管当局认可的组织实施。如果缔约国建立的审核计划依据国家法律和规则，缔约国应在任何审核前提供审核计划的相关资料，包括但不限于下列内容：

- 审核频率：应在DASR有效期的中期至少进行一次审核；和
- 审核过程：包括由拆船厂提交一份内容包括拆船活动总结和对拆船厂代表或管理者的采访以及现场检查的书面报告。

在必要时，主管当局应建立签发DASR之后在拆船厂进行后续现场检查的程序。

8.3 签发

如果文件验证过程和现场检验证明合格，主管当局应向拆船厂签发一份DASR。应在收到所有要求的文件并且成功完成现场检查之后签发DASR。

DASR的附件（本公约附则的附录5）必须永久附于DASR之后。附件所要求的大多数资料可在拆船厂导则中所述的SRFP中获得。

DASR应随时保存在拆船厂。

8.4 修正

主管当局可适时修正DASR。修正程序可由主管当局或拆船厂启动。主管当局可在修正DASR之前要求进行一次现场检查以验证是否符合本公约要求。拆船厂应向主管当局提供相关文件并对SRFP进行更新。

鼓励对DASR进行修正的情况包括但不限于下列情况：

1. 拆船厂申请修正DASR以扩大授权范围；例如，在对拆船厂进行了投资并增加了应在DASR中反映的新产能之后；
2. 由于主管当局方面有令人信服的需求而引发对DASR的修正；例如，有新的国内规则生效；
3. 主管当局在事故后进行调查而引发对DASR的修正；
4. 由于拆船厂的作业与SRFP的要求不符，从而影响DASR的内容，由此引发对DASR的修正；和
5. 由于拆船厂可拆除、存放和加工的有害物质发生变化而引发对DASR的修正。

8.5 中止

如主管当局有资料证明拆船厂不再满足DASR的要求和条件，可中止DASR或要求拆船厂采取纠正措施。主管当局可暂时或无限期中止DASR，取决于拆船厂之后的符合程度。在中止期间，拆船厂不可授权进行拆船活动，除非主管当局规定拆船厂可继续某些不会对保护人员健康和环境造成负面影响的活动。

如作为审核的一部分而进行的现场检查受到拆船厂无正当理由的限制，主管当局可中止DASR。

8.6 撤销

如主管当局有资料证明拆船厂不再满足DASR的要求和条件，可撤销DASR。如果拆船厂严重或反复不符合要求并且中止DASR并未呈现出足够的补救措施，主管当局一般应对此保留撤销。只有当拆船厂向主管当局提交新的申请证明拆船厂完全符合本公约的要求和相关导则要求之后，主管当局可恢复对拆船厂的授权。

拆船厂任何影响授权条件的措施或改变将促使进行新的检查。如该检查显示授权条件不再具备，则应撤销DASR。

8.7 换新

主管当局在收到拆船厂书面申请后可对DASR进行换新。拆船厂应以上述第6节中与拆船厂初次授权申请相关的修订文件作为对申请的支持。主管当局可决定在换新DASR之前进行一次现场检查。

9. 有效期

签发DASR的有效期应由缔约国确定，但不超过5年。

如果拆船厂变更所有权，则新的所有者应在合理的时间段内，如有可能，不超过30天通知主管当局以便其对DASR进行相应的修正。新的所有者应书面确认将完全符合所有要求，包括SRFP和本公约。新的所有者还应提供主管当局要求的任何支持文件。如果拆船厂的作业发生改变从而影响了授权条件，主管当局可相应修正、中止或撤销DASR并通知新的所有者。

10. 资料的送交

10.1 主管当局认可的组织

缔约国应将其授权给主管当局认可的组织的责任和授权条件通知本组织，以分发至各缔约国。在任何情况下，主管当局都应对所签发的授权书完全负责（第16.3条）。

可要求主管当局认可的组织保留一份具备执行缔约国要求任务的足够专业知识的验船师清单。

各缔约国应向本组织送交，并由本组织分发一份经授权按本公约规定在管理拆船控制有关事宜方面代表该缔约国行事的主管当局认可的组织和指定的验船师的清单，以及主管当局认可的组织或指定的验船师的具体职责和授权条件（正文第12.3条）。

10.2 违章事件和制裁

如果发生指控的违章事件，管辖该拆船厂的缔约国应将所采取的任何行动迅速通知报告所指控的违章事件的缔约国以及本组织。

如果缔约国在收到信息后一年内未采取任何行动，其应将未采取行动的原因通知报告所指控的违章事件的缔约国以及本组织。

如某一缔约国收到另一缔约国的调查请求连同有关拆船厂正在、已经或将要违反本公约任何规定进行操作的充分证据，该缔约国应对在其管辖范围内操作的该拆船厂进行调查，并形成报告。任何此类调查报告，包括已采取或将采取行动的相关信息(如有时)，应送交请求调查的缔约国，并送交本组织以采取适当的行动。

当发生本公约正文第9条规定的所指控的违章事件时，拆船厂应立即通知主管当局。

ANNEX 4

RESOLUTION MEPC.210(63)

Adopted on 2 March 2012

2012 GUIDELINES FOR SAFE AND ENVIRONMENTALLY SOUND SHIP RECYCLING

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee conferred upon it by the international conventions for the prevention and control of marine pollution,

RECALLING ALSO that the International Conference on the Safe and Environmentally Sound Recycling of Ships held in May 2009 adopted the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009 (the Hong Kong Convention) together with six Conference resolutions,

NOTING that regulations 17.1 and 19 of the annex to the Hong Kong Convention require that Ship Recycling Facilities shall establish management systems, procedures and techniques which do not pose health risks to the workers or to the population in the vicinity of the Ship Recycling Facility and which will prevent, reduce, minimize and to the extent practicable eliminate adverse effects on the environment caused by Ship Recycling, taking into account guidelines developed by the Organization,

NOTING ALSO that regulation 18 of the annex to the Hong Kong Convention requires that Ship Recycling Facilities shall prepare a Ship Recycling Facility Plan, addressing worker safety and training; protection of human health and the environment; roles and responsibilities of personnel; emergency preparedness and response; and monitoring, reporting and record-keeping systems, taking into account the guidelines developed by the Organization,

NOTING FURTHER that regulations 20.2 and 22 of the annex to the Hong Kong Convention require that Ship Recycling Facilities shall ensure that all Hazardous Materials are identified, labelled, packaged and removed to the maximum extent possible prior to cutting, and shall also ensure that all workers at the Ship Recycling Facility have been provided with appropriate training and familiarization prior to performing any Ship Recycling operation, taking into account the guidelines developed by the Organization,

BEARING IN MIND that the International Conference on the Safe and Environmentally Sound Recycling of Ships, in its resolution 4, invited the Organization to develop Guidelines for global, uniform and effective implementation and enforcement of the relevant requirements of the Convention as a matter of urgency,

HAVING CONSIDERED, at its sixty-third session, the draft 2012 Guidelines for safe and environmentally sound ship recycling developed by the Working Group on Ship Recycling,

1. ADOPTS the 2012 Guidelines for safe and environmentally sound ship recycling, as set out in the annex to this resolution;

2. INVITES Governments to bring the Guidelines to the attention of ship recycling facilities and to encourage their application as soon as possible; and to apply them when the Hong Kong Convention becomes applicable to them; and
3. REQUESTS the Committee to keep the Guidelines under review.

ANNEX

2012 GUIDELINES FOR SAFE AND ENVIRONMENTALLY SOUND SHIP RECYCLING

TABLE OF CONTENTS

1	INTRODUCTION
1.1	Objectives of the guidelines
1.2	Approach of the guidelines
2	DEFINITIONS
3	SHIP RECYCLING FACILITY PLAN (SRFP)
3.1	Facility management
3.1.1	Company information
3.1.2	Training programme
3.1.3	Worker management
3.1.4	Records management
3.2	Facility operation
3.2.1	Facility information
3.2.2	Permits, licences and certification
3.2.3	Acceptability of ships
3.2.4	Ship Recycling Plan (SRP) development
3.2.5	Vessel arrival management
3.2.6	Ship recycling methodology
3.2.7	Reporting upon completion
3.3	Worker safety and health compliance approach
3.3.1	Worker health and safety
3.3.2	Key safety and health personnel
3.3.3	Job hazard assessment
3.3.4	Prevention of adverse effects to human health
3.3.4.1	Safe-for-entry procedures
3.3.4.1.1	Safe-for-entry criteria
3.3.4.1.2	Competent person for Safe-for-entry determination
3.3.4.1.3	Safe-for-entry inspection and testing procedures
3.3.4.1.4	Oxygen
3.3.4.1.5	Flammable atmospheres
3.3.4.1.6	Toxic, corrosive, irritant or fumigated atmospheres and residues
3.3.4.1.7	Safe-for-entry determination by a Competent person
3.3.4.1.8	Safe-for-entry certificate, warning signs and labels
3.3.4.1.9	Safe-for-entry operational measures

- 3.3.4.2 Safe-for-hot-work procedures
 - 3.3.4.2.1 Safe-for-hot-work criteria
 - 3.3.4.2.2 Competent person for Safe-for-hot-work determination
 - 3.3.4.2.3 Safe-for-hot-work inspection, testing and determination
 - 3.3.4.2.4 Safe-for-hot-work certificate, warning signs and labels
 - 3.3.4.2.5 Safe-for-hot-work operational measures
 - 3.3.4.3 Welding, cutting, grinding and heating
 - 3.3.4.4 Drums, containers and pressure vessels
 - 3.3.4.5 Prevention of falling from heights and accidents caused by falling objects
 - 3.3.4.6 Gear and equipment for rigging and materials handling
 - 3.3.4.7 Housekeeping and illumination
 - 3.3.4.8 Maintenance and decontamination of tools and equipment
 - 3.3.4.9 Health and sanitation
 - 3.3.4.10 Personal protective equipment
 - 3.3.4.11 Worker exposure and medical monitoring
 - 3.3.5 Emergency preparedness and response plan (EPRP)
 - 3.3.6 Fire and explosion prevention, detection and response
- 3.4 Environmental compliance approach
- 3.4.1 Environmental monitoring
 - 3.4.2 Management of Hazardous Materials
 - 3.4.2.1 Potentially containing Hazardous Materials
 - 3.4.2.2 Additional sampling and analysis
 - 3.4.2.3 Identification, marking and labelling and potential on-board locations
 - 3.4.2.4 Removal, handling and remediation
 - 3.4.2.5 Storage and labelling after removal
 - 3.4.2.6 Treatment, transportation and disposal
 - 3.4.3 Environmentally sound management of Hazardous Materials
 - 3.4.3.1 Asbestos and materials containing asbestos
 - 3.4.3.2 PCBs and materials containing PCBs
 - 3.4.3.3 Ozone-depleting substances (ODSs)
 - 3.4.3.4 Paints and coatings
 - 3.4.3.4.1 Anti-fouling compounds and systems (organotin compounds including tributyltin (TBT))
 - 3.4.3.4.2 Toxic and highly flammable paints
 - 3.4.3.5 Hazardous liquids, residues and sediments (such as oils, bilge and ballast water)
 - 3.4.3.6 Heavy metals (lead, mercury, cadmium and hexavalent chromium)
 - 3.4.3.7 Other Hazardous Materials
 - 3.4.4 Prevention of adverse effects to the environment
 - 3.4.4.1 Spill prevention, control and countermeasures
 - 3.4.4.2 Storm-water pollution prevention
 - 3.4.4.3 Debris prevention and control
 - 3.4.4.4 Incident and spills reporting procedures

APPENDIX 1	Recommended format of the Ship Recycling Facility Plan
APPENDIX 2	Example format of Facility information in SRFP
APPENDIX 3	Ship recycling process from preparation to completion
APPENDIX 4	Relevant instruments of the International Labour Organization (ILO)
APPENDIX 5	Relevant instruments and reference materials of the United Nations Environment Programme (UNEP) and others
APPENDIX 6	Materials found on board ships that the ship recycling facility should be prepared to handle (included in Part III of the Inventory of Hazardous Materials)

1 INTRODUCTION

1.1 Objectives of the guidelines

These guidelines provide stakeholders, particularly Ship Recycling Facilities, with recommendations for the safe and environmentally sound recycling of ships and implementation of the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009 (hereafter "the Convention").

It should be noted that article 6 and regulations 9 and 17 to 25 of the annex to the Convention provide requirements for Ship Recycling Facilities and require these guidelines to be taken into account.

These guidelines should be used primarily by Ship Recycling Facilities, but other stakeholders such as the Competent Authority(ies) and the organizations recognized by it may also find them useful in implementing the Convention.

1.2 Approach of the guidelines

Article 6 of the Convention requires the authorization of Ship Recycling Facilities that recycle ships to which the Convention applies or ships treated similarly pursuant to article 3.4 of the Convention. Regulation 18 specifies that such authorized Ship Recycling Facilities shall develop a comprehensive Ship Recycling Facility Plan (SRFP) that, among others, should cover worker safety and training, protection of human health and the environment, roles and responsibilities of personnel, emergency preparedness and response and systems for monitoring, reporting and record-keeping.

These guidelines describe the recommended content of the SRFP, and information is provided where appropriate to illustrate the performance standards anticipated by specific regulations of the Convention.

2 DEFINITIONS

The terms used in these guidelines have the same meaning as those defined in the Convention. The following additional definitions apply to these guidelines only.

2.1 "Adjacent space" means those spaces bordering a space in all directions, including all points of contact, corners, diagonals, decks, tank tops and bulkheads.

2.2 "Dangerous atmosphere" means an atmosphere that may expose workers to the risk of death, incapacitation, impairment of ability to self-rescue (i.e. to escape unaided from a space), injury or acute illness.

2.3 "Enclosed space" means a space that has any of the following characteristics:

- .1 limited openings for entry and exit;
- .2 inadequate ventilation; and/or
- .3 is not designed for continuous worker occupancy.

Enclosed spaces include, but are not limited to, cargo spaces, double bottoms, fuel tanks, ballast tanks, cargo pump-rooms, cargo compressor rooms, cofferdams, void spaces, duct keels, inter-barrier spaces, boilers, engine crankcases, engine scavenge air receivers, sewage tanks and adjacent connected spaces.

2.4 "Entry" means the action by which a person passes through an opening into a space. Entry includes ensuing work activities in that space and is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into the space.

2.5 "Hot work" means any activity requiring the use of electric arc or gas welding equipment, cutting burner equipment or other forms of flame, as well as heating or spark-generating tools, regardless of where it is carried out on board a ship.

2.6 "Space" means a permanent or temporary three-dimensional structure or compartment on a ship such as, but not limited to, cargo tanks or holds; pump or engine rooms; storage lockers; tanks containing flammable or combustible liquids, gases, or solids; other rooms; crawl spaces; tunnels (i.e. shaft alleys); or access ways. The atmosphere within a space is the entire volume within its bounds.

3 SHIP RECYCLING FACILITY PLAN (SRFP)

The Ship Recycling Facility Plan (SRFP) shall be adopted by the board or appropriate governing body of the Recycling Company. The SRFP is the main document that the Competent Authority(ies), or organization recognized by it, will rely on in authorizing a Ship Recycling Facility. Site inspections are to be utilized to verify that Facility operations conform to the description in the SRFP. It is therefore critical that the SRFP should fully describe the operations and procedures that are in place at the Ship Recycling Facility to ensure compliance with the Convention.

The SRFP should demonstrate knowledge and understanding of all applicable statutory and regulatory requirements and a strong commitment to worker health and safety and protection of the environment. The SRFP should also describe the operational processes and procedures involved in ship recycling at the Ship Recycling Facility, demonstrating how the requirements of the Convention will be met. The recommended format for the SRFP is included in appendix 1.

3.1 Facility management

The SRFP should provide information regarding the organizational structure and management policies of the Recycling Company, an overview of the Ship Recycling Facility, and methodologies related to ship recycling. The SRFP should provide sufficient detail to demonstrate a thorough understanding of production processes and project management associated with ship recycling, and should demonstrate that the Ship Recycling Facility uses valid and practical solutions to the technical problems inherent in ship recycling.

The SRFP should anticipate alterations to recycling operational processes as a result of the discovery of previously unknown factors or items during ship recycling. Procedures should be established for identifying and dealing with previously unknown features. In addition, the decision-making process should lead to an approach that will ensure protection of the safety and health of workers and the environment.

3.1.1 Company information

The SRFP should provide detailed information on:

- .1 the operator of the Ship Recycling Facility, including the organizational structure and a detailed summary of the operator's experience relevant to ship recycling;
- .2 the name of the land or Facility owner, if different to the operator;
- .3 the roles, responsibilities and qualifications of management personnel;
- .4 the roles and responsibilities of the key personnel at the Ship Recycling Facility (key personnel should have the appropriate skills and experience for the intended job functions. The Ship Recycling Facility should have a dedicated environmental, safety and health manager and a person trained in first aid or medical care);
- .5 the Ship Recycling Facility's environmental, occupational safety and health management systems, including application of any formally recognized international standards for an environmental management system (e.g. ISO14001) and occupational safety and health management systems (e.g. OHSAS18001), and any certification awarded, as applicable;
- .6 the policy statement on the Facility's commitment to protection of the environment and occupational safety and health, including the objectives set by the Facility for the minimization and ultimate elimination of adverse effects on human health and the environment caused by ship recycling;
- .7 the methodologies used for ensuring compliance with the applicable statutory and regulatory requirements; and
- .8 the system by which the objectives and goals set out in the policy of the Recycling Company and the continuous improvement of the performance of the Facility are to be achieved.

The Ship Recycling Facility's environmental and occupational safety and health management programme, policies and objectives should be communicated to and understood by all personnel working at the Facility.

3.1.2 Training programme

Regulation 22 of the Convention specifies that the Ship Recycling Facility shall ensure that training programmes are provided. The SRFP should provide detailed information on the general workforce and job functions and on training procedures to ensure the appropriate level of worker safety and environmental protection. The training programmes should cover all workers and members of the Ship Recycling Facility, including contractor personnel and employees (regulation 22.3.1), and should identify the type and frequency of training. The training programme shall be reviewed periodically and modified as necessary (regulation 22.3.5).

The training programme should enable workers to safely undertake all operations that they are tasked to do and ensure that all workers at the Ship Recycling Facility have been provided with the appropriate training prior to performing any ship recycling operation.

The programme should include appropriate training for tasks and operations performed by the employees including, but not limited to, the following:

- .1 awareness and communication of information about Hazardous Materials;
- .2 job hazard awareness, including handling and management of Hazardous Materials;
- .3 personal protective equipment;
- .4 fire protection and prevention;
- .5 emergency response and evacuation;
- .6 safety and health training;
- .7 environmental awareness; and
- .8 first-aid awareness.

3.1.3 Worker management

The SRFP should include specific information on worker responsibilities, including qualifications, training and monitoring responsibilities.

3.1.4 Records management

The SRFP should outline the policies and procedures for retaining vital records associated with Facility operations and, specifically, the recycling of each ship. The retention of records should include, but not be limited to, laboratory analytical results, manifests, shipping documents, truck receipts, waste shipment records, records of training and exercises/drills, worker accidents, injuries and medical or health records such as occupational health examinations carried out and occupational diseases contracted, and a description of any national requirements for records management and retention. If national requirements do not specify a time period, it is recommended that records should be kept for five years.

3.2 Facility operation

The SRFP should demonstrate an understanding of the regulations, production processes, project management and other requirements associated with performing recycling operations in accordance with applicable laws and regulations, and demonstrate how the Ship Recycling Facility plans to prevent adverse effects to human health and the environment (regulation 19).

3.2.1 Facility information

The SRFP should provide a clear and concise description of the physical location of the Facility, including acreage and Facility access routes. A detailed Ship Recycling Facility drawing or map should be included, with information regarding the area where recycling will occur. The SRFP should include a clear and concise description of the pertinent details of the Ship Recycling Facility, such as Facility layout, water depth, accessibility, maintenance and dredging.

The SRFP should include a clear and concise description of the total estimated ship recycling capacity, the production throughput/capacity of recyclables including steel and engineering features for material segregation and processing. Temporary and permanent buildings such as offices, workers' complex, drinking water supply, sanitation, medical and first-aid facilities, gas storage and Hazardous Materials storage and processing facilities should be identified, as should the floor construction, other structures, roadways and emergency access routes.

The SRFP should include a clear and concise description of the pertinent details of the principle operational equipment in use at the Ship Recycling Facility. It is recommended that this should include the quantity, capacity and type of such equipment and other pertinent information such as test certificates, safe working loads and qualifications of operators, in relation to worker safety and protection of the environment.

An example of Facility information is given in appendix 2, which also covers the guidance contained in section 3.2.2 ("Permits, licences and certification").

3.2.2 Permits, licences and certification

The SRFP should document the procedures in place to ensure that the Ship Recycling Facility is operated and maintained in a manner that complies with all applicable laws and regulations.

The SRFP should include information on site-specific permits, licences, and/or certificates that are in effect or obtained prior to the start of ship recycling, including any lease or authorization from a landowner, port or other entity granting authorization to use the Facility for ship recycling purposes.

The SRFP should include procedures to ensure the appropriate level of certification and/or verification in order that all subcontractors (including those involved in handling, transport, treatment, storage and disposal) hold valid permits, registrations and/or certificates, as applicable.

The use of subcontractors for any part of the process of working with or managing Hazardous Materials in the Ship Recycling Facility does not relieve the Ship Recycling Facility of its responsibilities. In all matters covered by these guidelines, the Ship Recycling Facility should ensure and maintain records to document safe and environmentally sound management by subcontractors.

3.2.3 Acceptability of ships

The Convention contains requirements for the acceptance of ships for recycling. The SRFP should describe the processes and procedures to be implemented before the ship arrives at the Ship Recycling Facility for recycling.

When preparing to receive a ship for recycling, the first step shall be to notify the Competent Authority(ies) of the intent (see regulation 24.2). When the ship destined to be recycled has acquired the International Ready for Recycling Certificate, the Ship Recycling Facility shall report to its Competent Authority(ies) the planned start date of the ship recycling, using the reporting format in appendix 6 of the Convention. The procedures to be followed by stakeholders from the recycling preparation phase to the completion of recycling, as required by the Convention, are illustrated in appendix 3 of these guidelines.

3.2.4 Ship Recycling Plan (SRP) development

Under regulation 9 of the Convention, a ship-specific Ship Recycling Plan (SRP) shall be developed by the Ship Recycling Facility before any recycling of a ship can take place. The operational processes that are indicated in the SRFP can be used to prepare the SRP. The Convention requires that the SRP should be approved, in accordance with regulation 9, prior to issuance of an International Ready for Recycling Certificate. The SRFP should describe the process for developing a SRP, taking into account the *Guidelines for the Development of the Ship Recycling Plan (SRP)*.

3.2.5 Vessel arrival management

The SRFP should describe the procedures to be implemented to secure vessels upon arrival at the Ship Recycling Facility, including provisions for mooring, heavy and/or severe weather contingencies, afloat monitoring, stability during recycling and flooding and/or sinking prevention methods. Provisions may be different depending on the ship recycling method.

3.2.6 Ship recycling methodology

The SRFP should provide a comprehensive description of the Ship Recycling Facility's ship recycling methodology, covering the entire process of recycling a vessel including management of Hazardous Materials and wastes and a description of the methodology and procedures for identifying and segregating materials. The SRFP should also include a detailed description of how recycled materials, reusable items and wastes are handled and/or disposed of in a safe and environmentally sound manner.

The SRFP should include procedures for conducting assessments of the hazards associated with the safe and environmentally sound recycling of ships and should identify the subsequent process for minimizing and eliminating any such hazards.

Where materials or wastes are removed from the Ship Recycling Facility for further processing and/or disposal, the SRFP should provide details of the procedures that will be used to ensure that they are transferred only to a facility that is authorized to deal with their treatment and/or disposal in an environmentally sound manner.

3.2.7 Reporting upon completion

Regulation 25 of the Convention contains requirements for reporting upon completion. The SRFP should describe the procedures in place for such reporting, including how the Ship Recycling Facility will document and report any incidents and accidents.

3.3 Worker safety and health compliance approach

3.3.1 Worker health and safety

In this section of the SRFP, the Ship Recycling Facility should provide a comprehensive description of the Facility's plans and procedures for protecting worker health and safety and should reflect applicable requirements of the Convention (particularly regulations 19 and 21 to 23) and national legislation. The Ship Recycling Facility should also take into account, as appropriate, guidelines developed by international organizations. A reference list of these guidelines is provided in appendix 4. The SRFP should identify and demonstrate the Ship Recycling Facility's knowledge and understanding of applicable worker safety and occupational health processes, procedures, laws, regulations and guidance. Further, the SRFP should demonstrate that the safety and health programme supports the activities necessary for environmental compliance and for recycling and disposal at the Ship Recycling Facility.

3.3.2 Key safety and health personnel

The SRFP should identify one or more key personnel who possess the level of training and experience necessary to effectively ensure that safe conditions are maintained during operations at the Ship Recycling Facility, including one or more Competent persons for the performance of specific work. Depending upon the size of the Ship Recycling Facility and the number of workers, the SRFP could include a hierarchy of safety and health management staff, including an overall manager, supervisory staff and general workers.

3.3.3 Job hazard assessment

The SRFP should include the procedures to be implemented to conduct a job-hazard assessment to determine the proper approach to maximizing worker safety. Responsibility for job hazard assessments should be assigned to a Competent person for the specific hazards of each job. It is recommended that the assessments should be conducted by a team of personnel including the Competent person, a representative of management and workers with the appropriate level of expertise.

3.3.4 Prevention of adverse effects to human health

Regulation 19 of the Convention specifies that the Ship Recycling Facility shall establish and utilize procedures to prevent explosions by ensuring that Safe-for-hot-work and Safe-for-entry conditions are established and maintained throughout the ship recycling process; to prevent other accidents that cause or have the potential to cause damage to human health; and to prevent spills of cargo residues and other materials which may cause harm to human health and/or the environment. Since these are among the more critical aspects for the safe operation of Ship Recycling Facilities, it is important that the SRFP clearly demonstrates that it has procedures in place to prevent workplace accidents and injuries. The guidelines below outline the key considerations that should be included in the SRFP.

3.3.4.1 Safe-for-entry procedures

Throughout the entire recycling process, the Ship Recycling Facility should ensure that, prior to entry and during work, enclosed spaces and other areas where the atmosphere is dangerous are monitored to ensure that they remain Safe-for-entry and safe for continued activity. The Ship Recycling Facility should ensure that shipboard spaces are not entered until a Safe-for-entry certificate has been issued by a Competent person. A Competent person should visually inspect and test each space on the ship to determine the areas which are safe for entry before issuing a certificate and before recycling activities are commenced.

Safe-for-entry certification, inspection and testing should be conducted in all spaces that have the potential to pose harm to human health as a result of the space's oxygen content, flammability or atmospheric toxicity, with particular attention paid to enclosed spaces and to spaces and adjacent spaces where hot work has been or will be performed during the course of the daily recycling work.

Designation as "Safe-for-entry" is not sufficient for hot work, as additional criteria should be met to address safety issues related to hot work.

3.3.4.1.1 Safe-for-entry criteria

For entry purposes, steady readings of all the following should be obtained:

- .1 the oxygen content of the atmosphere is 21 per cent by volume, measured using an oxygen content meter (Note: National requirements may determine a safe atmosphere range);
- .2 where the preliminary assessment has determined that there is potential for flammable gases or vapours, the concentration of those gases or vapours is not higher than 1 per cent of their lower flammable limit (LFL), measured using a suitably sensitive combustible gas indicator; and
- .3 the concentration of any toxic vapours and gases is not higher than 50 per cent of their occupational exposure limit (OEL)¹.

If these conditions cannot be met, the space should be ventilated further and retested after a suitable interval.

3.3.4.1.2 Competent person for Safe-for-entry determination

Regulation 1 of the Convention defines "Competent person". The Competent Authority should define the appropriate criteria for designation of a Competent person. However, the Competent person(s) for Safe-for-entry and/or Safe-for-hot-work determination should be able to determine oxygen content, concentration of flammable vapours and gases and the presence of toxic, corrosive, irritant or fumigated atmospheres and residues. The Competent person should possess sufficient knowledge and practical experience to make an informed assessment based on the structure, location and designation of spaces where work is done. The Competent person should possess the ability to inspect, test and evaluate spaces to determine the need for further testing. The Competent person should also monitor the maintenance of appropriate conditions in spaces.

3.3.4.1.3 Safe-for-entry inspection and testing procedures

Designation as "Safe-for-entry" is not sufficient for hot work, as additional criteria must be met to address safety issues related to hot work. Testing should be carried out by a Competent person using appropriate and properly certified and calibrated equipment, including, but not limited to, an oxygen content meter, combustible gas indicator, toxicity meter and gas or vapour detection equipment.

3.3.4.1.4 Oxygen

The Ship Recycling Facility should ensure that spaces are tested by a Competent person to determine the atmosphere's oxygen content prior to initial entry into the space by workers, and also that the space is periodically monitored and recorded for as long as it is occupied. Spaces that warrant particular consideration include the following:

- spaces that have been sealed;

¹ It should be noted that the term occupational exposure limit (OEL) includes the permissible exposure limit (PEL), maximum allowable concentration (MAC) and threshold limit value (TLV), or any other internationally recognized terms.

- spaces and adjacent spaces that contain or have recently contained combustible or flammable liquids or gases;
- spaces and adjacent spaces that contain or have recently contained liquids, gases or solids that are toxic, corrosive, or irritant;
- spaces and adjacent spaces that have been fumigated; and
- spaces containing materials or residues of materials that create an oxygen-deficient atmosphere.

A worker should only enter a space where the oxygen content, by volume, has the value noted in 3.3.4.1.1. In such a case, the space should be labelled "Safe-for-entry". If an oxygen-deficient or oxygen-enriched atmosphere is found, ventilation should be provided at volumes and flow rates sufficient to ensure that the oxygen content is maintained at the value noted in 3.3.4.1.1. The label may be reattached when the oxygen content returns to the value noted in 3.3.4.1.1, and after it has been tested and inspected by the Competent person.

3.3.4.1.5 Flammable atmospheres

The Ship Recycling Facility should ensure that spaces and adjacent spaces that contain or have contained combustible or flammable liquids or gases are visually inspected and tested by the Competent person prior to entry by workers, and that they are periodically monitored and the results recorded throughout the time that the spaces are occupied.

If the concentration of flammable vapours or gases in the space to be entered is equal to or greater than 1 per cent of the lower flammable limit, then no one should enter the space and the label "Safe-for-entry" should be removed. Ventilation should be provided at volumes and flow rates sufficient to ensure that the concentration of flammable vapours is maintained below 1 per cent of the lower flammable limit. The label may be reattached when the concentration of flammable vapours falls below 1 per cent of the lower flammable limit and after it has been tested and inspected by the Competent person.

3.3.4.1.6 Toxic, corrosive, irritant or fumigated atmospheres and residues

The Ship Recycling Facility should ensure that spaces or adjacent spaces that contain or have contained liquids, gases or solids that are toxic, corrosive or irritant are visually inspected and tested by a Competent person prior to initial entry by workers.

If a space contains an air concentration of a material which exceeds 50 per cent of their OEL, then no one should enter the space and it should not be labelled "Safe-for-entry". Ventilation should be provided at volumes and flow rates sufficient to ensure that air concentrations are maintained below 50 per cent of their OEL. The label may be reattached when the concentration of contaminants is maintained below 50 per cent of their OEL and after it has been tested and inspected by the Competent person.

3.3.4.1.7 Safe-for-entry determination by a Competent person

A Competent person should visually inspect and test each space certified as "Safe-for-entry" as often as necessary to ensure that atmospheric conditions within that space are maintained within the conditions established by the certificate. However, at a minimum, the space should be inspected and tested at least once in an eight-hour shift period. The results of these tests should be recorded on the Safe-for-entry certificate.

When a change occurs that could alter conditions within a tested enclosed space or other dangerous atmosphere, work in the affected space or area should be stopped. Work may not be resumed until the affected space or area is visually inspected and retested by the Competent person and found to comply with the certification. It is recommended that the space should be ventilated and the atmospheric conditions returned to the acceptable limits after a space has been found to exceed limits.

If the Competent person has initially determined that a space is safe for an employee to enter and they subsequently find that the conditions within the tested space fail to meet the requirements, work should be stopped until the conditions in the tested space are corrected to comply with the certification requirements. If it is safe to do so, the Competent person may be asked to investigate the reason for the space's non-compliance and to ensure that the remedial action to be taken will prevent a reoccurrence.

3.3.4.1.8 Safe-for-entry certificate, warning signs and labels

Any determination of a space as "Safe-for-entry" should be accompanied by a certificate which, at a minimum, should clearly indicate the following information:

- name and title of the Competent person performing the test(s) and inspection(s);
- signature of the above person;
- name of vessel and location;
- the areas of the ship that are Safe-for-entry;
- date and time of the inspection;
- location of inspected spaces;
- tests performed;
- type of equipment used in testing;
- test results;
- period of retesting of the spaces;
- results of periodic retesting undertaken;
- conditions when the Competent person should be recalled or conditions that void the certificate;
- safety designation(s) ("Safe-for-entry", "Not Safe-for-entry");
- validity period and expiration date of the certificate, recommended to be a maximum of 24 hours, with periodic retesting intervals not exceeding eight hours;
- type of ventilation; and
- any additional relevant information or instructions.

Safe-for-entry certificates should be posted at every access point between ashore and the ship. A record of inspection of atmospheric tests should be appended to the certificate.

The certificate and/or the spaces themselves should be clearly marked and presented in a manner that can be seen and understood by all workers in the working language of the yard and, if possible, with pictorial representations.

If an entire work area has been tested and labelled with the proper signage (for example, as being "Safe-for-entry") at all points of access to the work area, an individual tank or other space located within the work area need not be labelled separately.

The certificate, updates and any other records should be kept on file for a period of at least three months from the completion date of the specific job for which they were generated.

If a space at any time ceases to meet the Safe-for-entry criteria, the label "Safe-for-entry" should be removed.

3.3.4.1.9 Safe-for-entry operational measures

In addition to ensuring certification as "Safe-for-entry", the following operational measures should also be observed:

- no person may open or enter an enclosed space unless authorized by the Competent person of the Ship Recycling Facility and unless the appropriate safety procedures have been followed;
- a permit for entry has been issued for those intended to enter the space by the same individual(s) who is/are responsible for maintaining the certificate on behalf of the Ship Recycling Facility, confirming that all certification processes and operational measures for safe entry have been completed and are in effect;
- the space is properly illuminated;
- there is appropriate access and egress to the space and the working area in the enclosed space is suitable for the work that is being considered, specifically for heavy, large or complex lifting operations;
- a suitable system of communication between all parties for use during entry is agreed upon, tested and used;
- the space is adequately isolated from gases, liquids or other identified hazardous substances that could inadvertently be released into the space in which work is being undertaken;
- a fully-trained supervisor, who may be in charge of one or more work teams, has oversight of the area and frequently monitors the conditions to which the workers are exposed;
- the style of ventilation equipment is such that no ignition sources are introduced into a hazardous space;
- the ventilation provided for the space is adequate for the work to be undertaken and for any diurnal variation in environmental conditions that may be experienced in hot or humid regions;
- the ventilation system is designed to prevent the persistence of gas pockets within tanks/spaces – owing either to the complex structure of the tank/space or to the fact that the gas pockets are heavier than air vapours in the tank – which may be achieved by suction/evacuation style ventilation rather than blower ventilation;

- in the event of ventilation system failure, some means of alert is provided so that any persons in the space can leave immediately;
- appropriate rescue and fire control plans are in place;
- appropriate personal protective equipment (PPE), protective clothing and safety equipment (including harnesses and lifelines) are provided to the workers, and used during entry to and work in the designated spaces; and
- adequate and functioning rescue and resuscitation equipment has been provided and is positioned ready for use at the entrance of the space.

If the fire alarm is activated, the space should be evacuated until the all-clear for re-entry is given by the Competent person.

3.3.4.2 Safe-for-hot-work procedures

The Ship Recycling Facility should ensure that no hot work commences on a ship unless the area is deemed "Safe-for-hot-work".

Safe-for-hot-work certification, inspection and testing apply to all of the following:

- enclosed spaces and all other spaces enclosed by bulkheads and decks (including cargo holds, tanks, quarters, and machinery and boiler spaces) that potentially contain dangerous atmospheres;
- within, on, or immediately adjacent to spaces that contain or have contained combustible or flammable liquids or gases;
- within, on, or immediately adjacent to fuel tanks that contain or have last contained fuel;
- on pipelines, heating coils, pump fittings or other accessories connected to spaces that contain or have last contained fuel; and
- bilges, cargo holds, engine room spaces and boiler spaces not containing dangerous atmospheres.

The Ship Recycling Facility should ensure that no hot work commences in any of these spaces until Safe-for-hot-work certification has been issued by a Competent person; these inspections and tests should be entered on the record of inspection and testing and posted in a conspicuous place on board. A Competent person should visually inspect and test each space on the ship to determine the areas which are deemed "Safe-for-hot-work" before a certificate is issued and before recycling activities commence.

3.3.4.2.1 Safe-for-hot-work criteria

A space that is "Safe-for-hot-work" is one that meets all the Safe-for-entry criteria and also the following criteria:

- any residues or materials in the space are not capable of producing an oxygen-enriched or oxygen-deficient environment, and are not capable of generating flammable or explosive vapours;

- all adjacent spaces have been cleaned, rendered inert or sufficiently treated to prevent the risk of explosion, the release of noxious or toxic fumes or gases and the spread of fire; and
- work in adjacent spaces is not affected by the hot work, such as tank entry, lifting operations or deconstruction by hand.

3.3.4.2.2 Competent person for Safe-for-hot-work determination

A Competent person for matters related to Safe-for-hot-work determination should meet the criteria identified in 3.3.4.1 and possess the additional knowledge and skills required to handle hot work activities.

3.3.4.2.3 Safe-for-hot-work inspection, testing and determination

Each space should be certified by a Competent person as "Safe-for-hot-work" as often as necessary to ensure that conditions within that space are maintained as established by the certificate. The frequency with which a space should be monitored to determine whether conditions are being maintained is a function of the following, but should in any event not exceed an eight-hour shift period:

- temperature: any changes in temperature in the space could result in a change in its atmospheric conditions, and hotter days can cause residues to produce more vapours, resulting in a greater risk of flammable or explosive conditions;
- work in the space: activity in the space can change its atmospheric conditions; gas leaks from a hose or torch or manual tank cleaning by scraping or using hand-held high-pressure spray devices can stir up residues, which can result in a greater risk of flammable or explosive conditions;
- period of elapsed time: if a sufficient period of time (not to exceed 24 hours) has elapsed since Safe-for-hot-work certificate was issued, the condition of the space should be retested prior to entry and commencement of work;
- unattended spaces: a tank or space that has been certified as "Safe-for-hot-work" then subsequently left unattended for a sufficient period of time should be retested prior to entry and commencement of work;
- work break: tanks or spaces should be checked for equipment left behind when workers take a break or leave at the end of the shift, and the condition of the tank or space should be retested prior to entry and resumption of work; and
- ballasting or trimming: changing the position of the ballast or moving or trimming the ship in any way can produce a change in the atmosphere of the spaces; the condition of the spaces should be retested prior to entry and resumption of work.

3.3.4.2.4 Safe-for-hot-work certificate, warning signs and labels

Any determination of a space as "Safe-for-hot-work" should be accompanied by a certificate which, at a minimum, should include the information identified in section 3.3.4.1.8 ("Safe-for-entry certificate, warning signs and labels"). Warning signs and labels should be posted in the manner described in section 3.3.4.1.8 for Safe-for-entry determination, clearly indicating that the space is "Safe-for-hot-work".

3.3.4.2.5 Safe-for-hot-work operational measures

In addition to the measures identified in section 3.3.4.1.9 ("Safe-for-entry operational measures"), the following should also be applied in order to achieve certification as "Safe-for-hot-work":

- each area where hot work is to be performed should be carefully prepared and isolated before hot work commences;
- all trash, debris, oil residues or other materials that could generate flammable or explosive vapours should be removed from the space prior to commencing hot work. The space and adjacent spaces should be kept free of any trash, debris, oil residues or other materials that could result in a risk of flammable or explosive conditions;
- drums and similar small containers which have contained flammable substances should, before they are cut, be either filled with water or thoroughly cleaned of such substances;
- deck tanks should be appropriately cleaned, gas freed and certified as Safe-for-entry and tested for hot work as described in the general sections (see sections 3.3.4.1 and 3.3.4.2). A suitable supply of fresh air should be maintained, given that oxygen from the atmosphere may be removed in the combustion process. The tanks should be isolated and tested in accordance with the guidance given in these guidelines. Particular attention should be paid to access and egress and to the unique challenges presented by these spaces regarding tank rescue in an emergency situation;
- fixed cargo or fuel tanks should be cleaned and ventilated before any work commences and after having been passed as "Safe-for-entry" and "Safe-for-hot-work". Cleaning should be sufficient to remove any hazardous liquids, light solids and clinkage to allow the tank to be gas freed. Complex structures may require additional preparation before being certified as "Safe-for-hot-work". The need for localized manual cleaning should be considered. Ventilation should allow an adequate flow of air to all parts of the space to prevent a build-up of gases either from the hot work or from the tank coatings;
- ventilation should be provided at volumes and flow rates sufficient to ensure that the concentration of flammable vapours is maintained below 1 per cent of the lower flammable limit;
- general mechanical ventilation should be of sufficient capacity and so arranged as to produce sufficient air changes to maintain safe levels of welding fumes and smoke; and
- the Ship Recycling Facility's fire safety procedures should be followed.

3.3.4.3 Welding, cutting, grinding and heating

The SRFP should include procedures for ventilation, personnel monitoring for heavy-metals exposure, protection of personnel, training, respiratory protection, torch cutting, permits and inspections (including hot-work certification). The SRFP should include procedures for transporting, moving, securing, storing and using hoses and torches.

3.3.4.4 Drums, containers and pressure vessels

The SRFP should include procedures for handling, transporting and storing pressure vessels containing flammable gases, such as acetylene (C₂H₂), propane gas (C₃H₈) or oxygen (O₂) for welding, heating and cutting works, in order to avoid any human injuries, caused by external forces, shock or heat to such vessels.

Procedures for removing pressure vessels containing carbon dioxide (CO₂), nitrogen (N₂) and other ozone-depleting substances used in fire-fighting and refrigeration systems should also be included.

Procedures for transporting and storing drums and containers containing hazardous liquids, using appropriate PPEs, should also be described in the SRFP.

3.3.4.5 Prevention of falling from heights and accidents caused by falling objects

The SRFP should include procedures for using personal flotation devices, guarding deck openings, deck edges and platforms, utilizing personal fall arrest systems and guard rails and ensuring safe access to ships to prevent slip-and-fall accidents and the dropping and scattering of objects.

3.3.4.6 Gear and equipment for rigging and materials handling

The SRFP should include procedures for testing and inspecting ropes, chains, slings, hooks, chain-falls and hoisting and hauling equipment. It should further include a description of operations using cranes, machines, mobile equipment and aerial and man-lift systems and a list of qualifications required for the operators.

3.3.4.7 Housekeeping and illumination

The SRFP should include procedures for work areas, such as aisles, passageways and temporary deck openings.

3.3.4.8 Maintenance and decontamination of tools and equipment

The SRFP should include procedures for inspection and maintenance of equipment, regulatory requirements for third-party inspections and decontamination procedures. These activities and the result of the inspections should be recorded.

The Ship Recycling Facility should ensure that the quantity and the deployment of tools and equipment are suitable for the corresponding recycling activities, especially when a number of ships are to be recycled at the same time.

3.3.4.9 Health and sanitation

The SRFP should include a description of washing facilities, showers, eating and recreation areas, toilet facilities and changing rooms. It is recommended that appropriate changing rooms and sanitary and washing facilities should be provided by the Ship Recycling Facility to control exposure and avoid the spread of Hazardous Materials. Sanitary and washing facilities should be conveniently accessible and situated so that they are not at risk of contamination from the workplace. Separate and appropriate changing rooms and sanitary and washing facilities should be provided for exclusive use by workers handling asbestos. It is also recommended that the Ship Recycling Facility should designate separate and uncontaminated areas for workers to use for eating, drinking and other breaks.

3.3.4.10 Personal protective equipment

The SRFP should include information on procedures and equipment used for the protection of employees from various risks associated with ship recycling.

Respiratory protection and hearing conservation programmes should be developed for all employees who could be exposed to excessive levels. The SRFP should describe how the programmes are in compliance with national regulations. In the absence of domestic law, the Ship Recycling Facility should utilize best industry practices to provide effective respiratory protection and hearing conservation programmes.

3.3.4.11 Worker exposure and medical monitoring

The SRFP should include procedures to be used for monitoring exposure and for medical surveillance.

3.3.5 Emergency preparedness and response plan (EPRP)

Regulations 18.5 and 21 of the Convention specify that Ship Recycling Facilities shall establish and maintain an emergency preparedness and response plan (EPRP). While the EPRP could be incorporated into the SRFP, it is highly recommended that the EPRP should be a separate, self-contained document. By having it as a self-contained document, the information contained within is more readily available and easily accessible, and the Ship Recycling Facility may want to distribute copies to several locations at the site. It is also helpful to have a summary page at the front of the document for quick access, showing 24-hour contact information (including telephone numbers) for the appropriate contact personnel (such as management personnel and emergency response personnel).

The SRFP should identify the locations where the EPRP will be readily available, and should contain a brief summary of the EPRP, so that the appropriate entities (such as those that are authorizing facilities) or other relevant stakeholders can easily confirm that it exists. The EPRP should take into consideration a wide variety of potential scenarios, including, but not limited to, human injuries, environmental accidents, extreme acts of nature and the activities of the surrounding community (such as an emergency at a nearby chemical processing plant).

The EPRP should, at a minimum, include the Facility's response to:

- fire or explosion or ingress of water on the ship being recycled or awaiting recycling, within the perimeter of the Facility, or in an adjacent facility;
- accidents to workers within the Facility;
- spillages of Hazardous Materials; and
- probable acts of nature in the area concerned, such as earthquakes or flooding.

The location, physical and environmental characteristics of the Ship Recycling Facility and the size and nature of activities associated with each ship recycling operation should be taken into consideration during preparation of the EPRP. The EPRP should do the following:

- ensure that the necessary equipment – including fire hydrants, extinguishers, first-aid facilities, clean-up equipment, breathing apparatus, alarms and signals and details of training arrangements that are commensurate with the possible

emergency situations likely to occur at the Ship Recycling Facility – and emergency procedures are in place, and that drills are being held on a regular basis;

- provide for the information and internal communication and coordination necessary to protect all people in the event of an emergency at the Ship Recycling Facility;
- provide information to and ensure communication with the relevant Competent Authority(ies) or organization recognized by it, the surrounding community and the emergency response services;
- provide for first-aid and medical assistance, fire-fighting, evacuation of all people from the Ship Recycling Facility (including emergency escape route and muster station) and pollution prevention measures such as the response to spills of Hazardous Materials (including the safe handling of spilled or emitted materials and the procedure for cleaning contaminated areas);
- provide visible indications of location of first aid stations, fire control stations and evacuation routes;
- further ensure the provision of relevant information and training to all workers at the Ship Recycling Facility, at all levels and according to their competence, including regular exercises in emergency prevention, preparedness and response procedures; and
- include procedures for recording of an emergency incident and investigation and corrective actions following an emergency incident.

3.3.6 Fire and explosion prevention, detection and response

The Ship Recycling Facility should have systems in place for preventing fires and explosions and for fire-fighting, by controlling any outbreak of fire quickly and efficiently and by quickly and safely evacuating all personnel at the Facility. The SRFP should provide for the following:

- sufficient and secure storage areas for flammable liquids, solids, and gases;
- procedures for the prohibition of smoking through "no smoking" notices;
- precautions to be implemented in spaces where flammable gases, vapours or dust can cause danger (no naked light or flame or hot work should be permitted unless the space has been tested and deemed safe by a Competent person); and
- procedures for the proper storage of combustible materials, greasy or oily wastes and scrap wood or plastics.

The SRFP should also include procedures for regular inspections of spaces where there are risks of fire and explosion. This includes the vicinity of heating appliances, electrical installations, conductors, stores of flammable and combustible materials and areas where operations involving hot welding, cutting, grinding and heating are conducted. The appropriate precautions to reduce the risk of fire and explosions from welding, flame cutting and other hot work should be identified.

The SRFP should include procedures for the provision and selection of fire-extinguishing equipment according to the provisions of applicable international and national laws and regulations, and should record the results of the initial hazard identification and risk assessment of the Ship Recycling Facility operations. Equipment deployment should take account of the following: any restrictions to access or egress to spaces inside the ship; the quantity and characteristics of hazardous, flammable and explosive substances handled in ship recycling operations; site transport and storage facilities; and first-stage fire-fighting demands (such as hand-held or trolley-mounted portable fire extinguishers).

The SRFP should identify the locations of the fire-extinguishing equipment, ensuring that they are readily available, easily visible and in accessible areas. Adequate water supply should be provided in places where the danger of fire exists (in accordance with national laws and regulations).

The SRFP should include procedures for the provision, proper operation, maintenance and regular inspection of all fire-extinguishing equipment by a Competent person. Access to fire-extinguishing equipment, such as hydrants, portable extinguishers, and connections for hoses, should be kept clear at all times.

The SRFP should describe procedures for providing suitable training, instruction and information to all supervisors and workers (including details of the frequency of such training) about the hazards of fires, appropriate precautions to be taken and use of fire-extinguishing equipment, so that adequately trained personnel are readily available during all working periods. Records of training and drills/exercises should be maintained, including such information as type of training/drill, role of person trained, equipment used, duration, location, date and time.

The SRFP should include procedures for the installation of sufficient, suitable and effective warning signals (such as sight and sound signals) in case of fire. There should be an effective evacuation plan so that all personnel are evacuated speedily and safely. The SRFP should include procedures for posting notices in conspicuous places indicating, if applicable, the nearest fire alarm, the telephone number and address of the nearest emergency services and the nearest first-aid station.

3.4 Environmental compliance approach

The SRFP should provide a description of the Ship Recycling Facility's plan and procedures for protecting the environment. The SRFP should demonstrate that the Ship Recycling Facility understands the environmental risks associated with ship recycling, understands and is implementing the environmental requirements imposed by applicable international and national laws and regulations, is capable of managing and disposing of all the materials in the ship in an environmentally sound manner, and is implementing controls to protect the environment, including with respect to handling and disposing of Hazardous Materials. The SRFP should reflect applicable requirements of the Convention (particularly regulations 20 to 22).

The SRFP should describe dedicated infrastructure for the treatment and disposal of Hazardous Materials generated from ship recycling operations pursuant to national laws and regulations. The Ship Recycling Facility should also take account of guidelines developed by international organizations as appropriate. A reference list of such guidelines is provided in appendix 5.

3.4.1 Environmental monitoring

The SRFP should describe the environmental monitoring programme aimed at preventing possible negative impacts to the environment during ship recycling.

Possible negative impacts during ship recycling may be divided into four main categories:

- releases of Hazardous Materials to ground and sediments;
- releases of Hazardous Materials to water;
- emissions of Hazardous Materials to air; and
- noise/vibrations.

The monitoring programme, if included in the SRFP, should be Facility-specific, taking into account the Facility's characteristics, such as the use of dry dock, jetty/piers and/or recycling plots on land-sea interface, and should identify chemical, biological and physical changes in the environment surrounding the Ship Recycling Facility.

The monitoring programme, if included in the SRFP, should utilize well-established standards for the sampling and analysis of relevant environmental parameters.

3.4.2 Management of Hazardous Materials

Prior to recycling, the IHM shall, in addition to the properly maintained and updated Part I, incorporate Part II for operationally generated wastes and Part III for stores (regulation 5.4).

Ships destined to be recycled shall conduct operations in the period prior to entering the Ship Recycling Facility in a manner that minimizes the amount of cargo residues, fuel oil and wastes remaining on board (regulation 8.2).

The following Hazardous Materials, at the very least, should be addressed in the SRFP:

- (a) Hazardous materials contained in the ship's structure and equipment (IHM, Part I):
 - Asbestos
 - Polychlorinated biphenyls (PCBs)
 - Ozone-depleting substances (ODSs)
 - Anti-fouling compounds and systems
 - Cadmium and cadmium compounds
 - Hexavalent chromium and hexavalent chromium compounds
 - Lead and lead compounds
 - Mercury and mercury compounds
 - Polybrominated biphenyls (PBBs)
 - Polybrominated diphenyl ethers (PBDEs)
 - Polychlorinated naphthalenes (PCNs)
 - Radioactive substances
 - Certain short-chain chlorinated paraffins

- (b) Operationally generated wastes (IHM, Part II):
- Waste oil (sludge)
 - Bilge and/or waste water generated by the after-treatment systems fitted on machineries
 - Oily liquid cargo residues
 - Ballast water
 - Raw sewage
 - Treated sewage
 - Non-oily liquid cargo residues
 - Dry cargo residues
 - Medical/infectious waste
 - Incinerator ash
 - Garbage
 - Fuel tank residues
 - Oily solid cargo tank residues
 - Oily or chemical contaminated rags
 - Dry tank residues
 - Cargo residues
- (c) Stores including regular consumable goods (IHM, Part III). A list of these is shown in appendix 6 to these guidelines.

Regular consumable goods potentially containing Hazardous Materials comprise goods which are not integral to a ship and are unlikely to be dismantled or treated at a Ship Recycling Facility.

The Ship Recycling Facility's approach for properly managing each of the Hazardous Materials found on board a ship should be described in its SRFP.

The SRFP should describe the Ship Recycling Facility's process, control procedures and abatement methodologies used for the removal, labelling, storage, segregation, transport, treatment and disposal of all such Hazardous Materials, which should be developed in accordance with national requirements, as applicable.

It is important to describe the sequence of removal of Hazardous Materials as part of the ship recycling activities.

It is recommended that the following aspects of proper management of Hazardous Materials should be clearly addressed for each of the potentially Hazardous Materials identified above:

- identification, marking and labelling and potential on-board locations;
- recycling approach;
- removal, handling and remediation;
- storage and labelling; and
- treatment, transportation and disposal.

The Facility's approach to the safe and environmentally sound removal and treatment of any non-hazardous wastes on board should be described in the SRFP. The SRFP should describe the Facility's processes, control procedures and capabilities for removing and treating all such non-hazardous wastes, taking into account applicable IMO guidance, including but not limited to the *Comprehensive Manual on Port Reception Facilities*.

3.4.2.1 Potentially containing Hazardous Materials

The prerequisite for classification as "potentially containing Hazardous Materials" (PCHM) is "a comprehensible justification such as the impossibility of conducting sampling without compromising the safety of the ship and its operational efficiency" (paragraph 4.2.3 of the *2011 Guidelines for the Development of the Inventory of Hazardous Materials*, hereafter "the Inventory Guidelines").

The SRFP should describe how PCHMs will be treated; either:

- they will be removed, stored and treated as Hazardous Materials in accordance with the requirements of the Convention; or
- sampling and analysis will be conducted and PCHMs will be treated accordingly, based on the findings of sampling and analysis.

The basis of such a decision on how to treat PCHMs should be transparent and consistent as far as practicable. This information will need to be fully described in the Ship Recycling Plan.

3.4.2.2 Additional sampling and analysis

If, during the recycling process or in preparation for it, the Ship Recycling Facility deems it necessary, sampling, analysis and/or visual inspection should be conducted, possibly with the cooperation of the shipowner, to enable the identification of Hazardous Materials. A sampling plan should be developed describing the sampling locations, number of samples to be taken, the name of the sampler (including subcontractors) and the type of analysis to be performed.

When conducting the sampling of any possible Hazardous Materials, the samplers should be protected from exposure by the worker-safety measures required for the Hazardous Materials in question. Analysis of the samples should be performed by an accredited laboratory.

It is recommended that, in conducting additional sampling, the Ship Recycling Facility should follow the relevant part on sampling and analysis of the Inventory Guidelines.

After the sampling and analysis results are known, the Ship Recycling Facility should manage the materials appropriately according to whether they have been found to be hazardous.

3.4.2.3 Identification, marking and labelling and potential onboard locations

The Ship Recycling Facility should utilize the information in the IHM for the purposes of identifying the type, location and quantity of any Hazardous Materials and for marking and/or labelling. Asbestos, PCBs, other Hazardous Materials and ship tanks – such as crude oil tank (COT), fuel oil tank (FOT), lubricating oil tank (LOT), fresh water tank (FWT) and water ballast tank (WBT) – should be clearly marked in an easily identifiable manner.

It is recommended that the Ship Recycling Facility should ensure that it is fully aware of all the potential locations of Hazardous Materials on board ships. Examples of typical locations for many of the Hazardous Materials are provided in section 2.2 ("Indicative List") of appendix 5 ("Example of the Development Process for Part I of the Inventory for Existing Ships") of the Inventory Guidelines.

3.4.2.4 Removal, handling and remediation

The SRFP should describe how to safely remove, handle and/or clean the Hazardous Materials that have been identified on the ship, taking account of their potential adverse effects on human health and/or the environment.

Removal of Hazardous Materials should only be conducted by appropriately trained personnel following the worker-safety measures required for the Hazardous Materials in question.

Whenever in use, the space where the removal work is occurring should be isolated from other work spaces and should be clearly marked to inform all persons of the hazards in the area.

After the removal of highly toxic, explosive or reactive Hazardous Materials, decontamination or remediation of the space should be performed by trained personnel.

Methods and procedures for the removal, handling and remediation of Hazardous Materials should be established to ensure safe and environmentally sound operations in accordance with the applicable national requirements.

Pursuant to section 2.2 of the Supplement to the Document of Authorization to conduct Ship Recycling (DASR) (appendix 5 of the Convention), the SRFP should indicate the responsible personnel authorized to carry out removal of Hazardous Materials, with the certificate number or other relevant information, for each of the Hazardous Materials identified.

In the normal handling of all hazardous materials due attention should be paid to relevant occupational exposure limits.

3.4.2.5 Storage and labelling after removal

The SRFP should describe how all wastes generated from recycling activity will be kept separate from recyclable materials and equipment, labelled for clear identification and stored in appropriate conditions either temporarily or for a longer term. The SRFP should describe how the Ship Recycling Facility will avoid waste being mixed or contaminated in a way that interferes with subsequent handling, storage, treatment, recycling or disposal.

3.4.2.6 Treatment, transportation and disposal

The SRFP should demonstrate how the Ship Recycling Facility will ensure environmentally sound management of all Hazardous Materials and wastes removed from a ship at the Ship Recycling Facility. If treatment or disposal is taking place at the Ship Recycling Facility, the SRFP should describe how the materials will be managed in an environmentally sound manner and in compliance with applicable national requirements.

In situations where the Hazardous Materials and wastes are sent off site, the SRFP should describe procedures to ensure that they are transferred only to a facility authorized to deal with their safe and environmentally sound treatment and disposal.

The SRFP should identify all off-site management and disposal facilities, describe how the materials will be managed at those facilities and identify all authorizations, permits, certificates, approvals and licences required by national and other agencies authorizing the facilities to manage the wastes. The SRFP should include procedures for tracking Hazardous Materials and wastes as they are transported from the Ship Recycling Facility to their ultimate destination, and for managing and storing documentation, including that of subcontractors.

The final waste-management facilities should adhere to national standards and requirements which should take into account applicable international standards and requirements.

3.4.3 Environmentally sound management of Hazardous Materials

3.4.3.1 Asbestos and materials containing asbestos

The Ship Recycling Facility should identify the location and quantity of asbestos and materials containing asbestos by actively utilizing the IHM. Identification, marking and labelling should be conducted by the Ship Recycling Facility before asbestos and materials containing asbestos are removed.

Indicative lists of shipboard locations for asbestos are provided in the Inventory Guidelines (section 2.2.2.1 of appendix 5), and can be used as supporting material if additional assessment and sampling are required.

In order to safely remove asbestos and materials containing asbestos, the following protective measures should be taken, and the SRFP should describe how they are implemented by the Ship Recycling Facility:

- .1 workers should be present who are trained and authorized in the removal of asbestos and materials containing asbestos in accordance with applicable national requirements;
- .2 the removal of the asbestos and materials containing asbestos should be conducted under the monitoring and management of the Competent person;
- .3 the number of workers exposed to asbestos should be limited to the necessary minimum;
- .4 the area in which the removal of asbestos and materials containing asbestos is to be conducted should be isolated from the other work areas, and entry should be allowed only to appropriately trained personnel. The area should be clearly posted with a caution that asbestos removal work is occurring;
- .5 if the removal work includes cutting, boring, grinding or otherwise disturbing friable asbestos and materials containing asbestos which may scatter into the environment, appropriate protection should be provided, so as not to release the asbestos in the air, by isolating the area in the room or space where the removal will occur; a common approach is as follows:
 - seal the room or space with plastic sheets;
 - the plastic sheets should be of sufficient strength;

- where the machines, equipment, pipes or spaces cannot be isolated or sealed (for example, a complex and narrow area under a floor plate in the engine room), partial protection may be provided with plastic sheets;
 - the isolated area should be maintained under negative pressure where possible; and
 - practices for dealing with materials containing asbestos under a partial pressure chamber system and the use of wet methods should be encouraged as far as possible;
- .6 materials containing friable asbestos in areas such as walls and ceilings should be carefully removed, and water or an appropriate wetting agent should be applied prior to the removal of materials containing asbestos in order to prevent the asbestos from scattering into the atmosphere;
- .7 personal protection equipment (PPE) for workers, including respiratory protection and special protective clothing for asbestos, should be provided;
- .8 after removal of asbestos, the area should be cleaned in the following manner:
- equipment and tools should be washed/cleaned and then removed from the area;
 - the asbestos and materials containing asbestos should be packed and sealed in plastic containers prior to being removed from the area;
 - the plastic sheets used for isolating the area should be moistened with water and handled carefully to prevent the asbestos from scattering;
 - an efficient vacuum cleaner should be used for cleaning the area, such as one equipped with a high efficiency particulate air (HEPA) filter; and
 - the airborne asbestos in the air and/or space should be checked before removing the plastic isolation sheets and allowing other work to continue in the area;
- .9 workers removing asbestos should properly prepare for entry into a contaminated area, and should be decontaminated before leaving the contaminated area, as follows:
- workers should not be allowed to wear street clothes in the isolated area or under their PPE;
 - after completing work in the isolated area, workers should shower to remove asbestos, and then enter a separate clean area to put on their clothes; and
 - work clothes should not be laundered at home; they should be bagged, labelled and laundered at an appropriate location at the Facility or off site;

- .10 containers used for packing and transporting the removed asbestos materials should be properly labelled and sufficiently strong and resilient as to minimize the possibility of accidental damage or breakage during transport, which could result in the uncontained release of asbestos fibres into the atmosphere; and
- .11 asbestos should not be reused or recycled, and its management and final disposal should comply with national requirements.

3.4.3.2 PCBs and materials containing PCBs

The Ship Recycling Facility should identify the location and quantity of the Hazardous Materials and wastes containing PCBs (polychlorinated biphenyls) by actively utilizing the IHM.

Indicative lists of shipboard locations for PCBs are provided in the Inventory Guidelines (section 2.2.2.2 of appendix 5), and can be used as supporting material if additional assessment and sampling are required. PCBs may be contained in the equipment and materials in both solid and liquid forms as shown on the IHM. Since PCB sampling and analytical procedures can be expensive and time consuming, it may be more economical to presume that the materials do contain PCBs and remove and manage them accordingly.

In order to safely remove PCBs and materials containing PCBs, the following protective measures should be taken and the SRFP should describe how they are implemented by the Ship Recycling Facility:

- .1 workers should be specifically trained and authorized in the removal of PCBs;
- .2 personal protection equipment (PPE) for workers, including respiratory protection and dermal protection, should be provided;
- .3 removal of Hazardous Materials and wastes containing PCBs should be carefully performed to avoid spills, volatilization or scattering, in the following manner:
 - spill prevention measures should be taken when draining or removing liquid-filled equipment, including booms, drip pans, liners and/or absorbent materials placed around the system or piece of equipment; and
 - most solid materials containing PCBs can be removed by using manual, chemical or mechanical means such as blasting, scraping, cutting, stripping or gouging;
- .4 thermal or "hot" methods of removal or recycling should not be used if the presence of PCB is known or suspected (for example, electric cable insulation, hydraulic oil, transformer oil and paints containing PCBs should not be burned);

- .5 equipment used to remove PCB-containing materials should be decontaminated appropriately after use (a common decontamination process for equipment would be to rinse with non-polar organic solvent such as kerosene or diesel, then wash with soap and water and rinse with clean water); any water or other liquid used should be appropriately managed as waste;
- .6 removed PCBs and materials containing PCBs should be appropriately stored in properly labelled, leak-proof containers that are made for transport and are sealed (liquids) or covered (solids);
- .7 a separate storage area should be set up for PCB wastes, in accordance with the following points:
 - Hazardous Materials and wastes containing PCBs should not be stored or kept with other Hazardous Materials and wastes;
 - the storage area should be clearly marked on the exterior with warnings that it contains PCBs;
 - the storage area should provide protection from rain; and
 - containers should be regularly inspected for leaks and damage;
- .8 containers or vehicles used for packing and transporting the removed PCB materials should be properly labelled and the possibility of accidental release during transport should be minimized; and
- .9 PCBs should not be reused or recycled and their management and final disposal should comply with national requirements.

3.4.3.3 Ozone-depleting substances (ODSs)

The Ship Recycling Facility should identify the location and quantity of ozone-depleting substances (ODSs) prior to removal by actively utilizing the IHM.

The indicative list for ODSs in the Inventory Guidelines (section 2.2.2.3 of appendix 5) can be used as the supporting material if an additional survey and sampling are required.

The SRFP should describe how the Ship Recycling Facility implements the following protective measures to safely remove and manage ODSs:

- .1 extraction of ODSs from the system should be done by persons who are trained and authorized for handling such materials;
- .2 ODSs on board in containers, equipment and piping systems should not be released into the atmosphere;
- .3 management or destruction of ODSs should comply with national requirements; and
- .4 ODSs used as blowing agents and trapped in insulation foam in refrigerated areas should not be released into the atmosphere and environmentally sound management should be observed while dismantling and disposing of the foam waste.

3.4.3.4 Paints and coatings

The SRFP should describe procedures for properly managing any paints and coatings that are highly flammable or that may release toxins during cutting.

3.4.3.4.1 Anti-fouling compounds and systems (organotin compounds including tributyltin (TBT))

The Convention applies to all anti-fouling compounds and systems regulated under annex 1 of the International Convention on the Control of Harmful Anti-Fouling Systems on Ships (hereafter "the Anti-Fouling Convention"). Since the only systems currently regulated by the Anti-Fouling Convention are organotin compounds, these guidelines address the proper management of organotins only. However, similar considerations should be applied to future anti-fouling compounds that become subject to the Anti-Fouling Convention.

Organotin compounds include tributyltin (TBT), triphenyltin (TPT) and tributyltin oxide (TBTO). Organotin compounds have been commonly used as anti-fouling paint on the bottom of ships. Some ships applied the organotin compounds with a coating forming a barrier to stop such compounds from leaching into sea. Therefore, the Ship Recycling Facility should check the IHM carefully, and might inspect the hull paint.

Organotin paint should not be released into the sea or soil during the ship recycling process. If it is possible that organotin paint might be removed as a result of work (whether it is intentionally removed, or the collateral effect of some other effort, such as dragging), the work should be conducted in an environmentally sound manner to ensure that any organotin paint removed is not released into the sea.

Organotin paint may be removed using techniques such as blasting, chemical stripping or mechanical removal. However, special attention should be given to preventing scattering of the paint chips in the air or adjacent areas.

Blasted paints should be collected, stored and disposed of in an environmentally sound manner in accordance with national requirements.

3.4.3.4.2 Toxic and highly flammable paints

The removal of paints prior to cutting during ship recycling may not be necessary unless the process leads to the release of toxic compounds or the paint is highly flammable. Prior to cutting painted surfaces, the Ship Recycling Facility should check the flammability and toxicity of the paint or coating. If it is toxic or flammable, it is suggested that, prior to hot cutting, a sufficiently wide band of paint is mechanically or chemically removed (for example, through blasting, scraping or stripping) from along the cut line. Appropriate PPE should be worn, and a containment system for paint particles should be used (especially for blasting operations).

If removal is not possible or feasible, cutting can proceed in a controlled manner provided that the workers are well protected with PPEs specifically designed for breathing and eye protection.

3.4.3.5 Hazardous liquids, residues and sediments (such as oils, bilge and ballast water)

The Ship Recycling Facility should identify the location and volume of hazardous liquids remaining on board by actively utilizing the IHM. Identification, marking and labelling of the

tanks and other areas should be conducted by the Ship Recycling Facility before the liquids are removed.

The residual oil storage tank should be protected against leakage, overflow, fire and other potential accidents.

Hazardous liquids, residues and sediments in stores, tanks, machines, equipment and piping should be removed under safe and environmentally sound conditions.

Ballast water should be handled in accordance with relevant national requirements.

3.4.3.6 Heavy metals (lead, mercury, cadmium and hexavalent chromium)

As indicated in the Inventory Guidelines, heavy metals are found in batteries, galvanized materials, level switches, gyro compasses, thermometers, coatings, etc. Radioactive substances may be found in level indicators and smoke detectors.

Equipment and other instruments containing heavy metals should be removed carefully to ensure that they do not break and to avoid contamination of the environment. Reusable equipment and instruments should be stored properly. Broken equipment and instruments should be delivered to the appropriate companies for repair, recycling or disposal in accordance with national requirements.

Anodes fitted to the ship's hull as sacrificial metal should be removed in the course of block cutting and should be managed properly.

3.4.3.7 Other Hazardous Materials

Other Hazardous Materials not listed above and which are not part of the ship's structure – those materials listed in the IHM, Parts II and III – should be removed under safe conditions.

To the maximum extent possible, these materials should be removed prior to cutting according to the provisions of national laws and regulations. After the materials have been removed from ships, safe and environmentally sound methods should be used for storing and processing them; for example, electric cable insulation containing chlorinated compounds should not be burned.

3.4.4 Prevention of adverse effects to the environment

3.4.4.1 Spill prevention, control and countermeasures

The purpose of developing and implementing a programme for spill prevention, control and countermeasures is to minimize the risk of spills and leaks that could adversely impact the environment. The SRFP should include a programme that defines the Ship Recycling Facility's procedures for spill prevention, response and countermeasures. The programme should define proactive approaches to spill prevention and procedures to be implemented in the event of spills.

At a minimum, the programme should demonstrate that the Ship Recycling Facility has adequate containment and spill clean-up equipment and procedures, by identifying the following:

- containment and diversionary structures in place to prevent discharged Hazardous Materials from contaminating soil and water;
- Facility drainage areas;
- location of spill response equipment;
- environmental protection measures to be implemented during transfer and offloading of fuels;
- location of other oils and bilges;
- fuel storage locations;
- inspection and record-keeping procedures;
- security measures;
- personnel training programmes;
- spill prevention and reporting procedures; and
- the history of incidents at the Ship Recycling Facility.

As part of the procedures for spill prevention, response and countermeasures, the SRFP should identify the designated in-house and subcontracted personnel who will be responsible for managing the programme and for responding to spills or similar emergencies, as well as the local authorities (such as the fire department) that may have jurisdiction at the Ship Recycling Facility. This SRFP should include 24-hour contact information. The SRFP should include both a narrative and graphic description of the Facility layout, including the location of any water bodies or other routes of migration, the storage location of oil or other Hazardous Materials, procedures for fuel transfer from ship to shore, procedures to be implemented in the event of a spill and the types and locations of emergency-response equipment (such as absorbent materials, personal protective equipment and first-aid equipment).

By identifying the potential sources of spills or leaks, the Ship Recycling Facility can then identify proactive measures to be implemented in order to minimize the risk associated with Facility activities. It is helpful for the Ship Recycling Facility to review the potential sources for spills and leaks and to determine the types of failures associated with them in order to determine the most appropriate and effective prevention measures. For example, drums should not be left open unless being filled, should be within a secondary containment or beamed structure and should not be exposed to rainfall that could corrode them over time.

The programme for spill prevention, control and countermeasures can be used as a tool by the Ship Recycling Facility to communicate practices on preventing and responding to spills and leaks, as a resource during emergency response and as a repository for information on storage, inspection and testing. It is important to maintain records on maintenance, inspections and employee training. Periodic review of the programme for spill prevention, control and countermeasures is also an effective tool for determining which procedures are fulfilling their intended function and for identifying weaknesses in the programme.

3.4.4.2 Storm-water pollution prevention

Storm-water run-off from industrial facilities has the potential to adversely affect the environment. Improper storage and handling of Hazardous Materials and wastes could increase the risk of environmental degradation through contact with water. The SRFP should include a programme that defines measures to be implemented and maintained to minimize the potential for storm-water contamination at the Ship Recycling Facility.

A programme for the prevention of storm-water pollution should include the identification of all potential pollutant sources at the Ship Recycling Facility that could come into contact with storm water, with the nearby receiving waters and with storm water-conveyance systems. A site map should be developed that depicts such information.

Following compilation of the relevant site information, an assessment should be conducted in order to determine the appropriate control measures. Control measures should be implemented to reduce the threat of storm-water pollution, to control erosion and sediment and to protect nearby natural resources. Control measures can include best management practices, maintenance and inspection programmes, employee training and reporting.

As an example, a potential pollutant source at a Ship Recycling Facility is the storage of drums, tanks or other containers for the offloading of fuel from a ship. The activity of transferring and storing the fuel includes multiple potential pollutant sources, such as spills and leaks during transfer to the water or the ground, leaking drums or containers or run-off from the drum storage area. Control measures to minimize the risk to the environment from storm-water contamination could include storing drums and other containers under semi-permanent or permanent coverings, controlling spills or run-off from drum storage areas with appropriately sized secondary containment, conducting routine inspections of drum storage areas and establishing appropriate clean-up procedures in the event of spills or leaks.

The development of preventive measures is the most effective way to minimize the discharge of pollutants via storm water. It is important to maintain records on maintenance, inspections and employee training. Periodic review of the storm-water management programme is also an effective tool for determining which best management practices are fulfilling their intended function and for identifying weaknesses in the programme.

3.4.4.3 Debris prevention and control

The introduction of debris into the marine environment by ship recycling activities has the potential to adversely affect the environment. The SRFP should include a programme that defines measures to be implemented and maintained to minimize the potential for debris deposition into the water, including the maintenance of areas from which debris might be transported into the marine environment by wind, storm drains, tides or run-off. Control measures should be implemented to reduce the likelihood of debris deposition.

3.4.4.4 Incident and spills reporting procedures

The SRFP should describe the procedures for reporting incidents and spills, including at a minimum the following information:

- how duties and responsibilities are assigned to the Ship Recycling Facility's responsible team, department or persons and their reporting responsibilities in the event of an incident;

- how the reporting procedures relate to the emergency preparedness and response plan (EPRP);
- communication link to the local community for any necessary assistance; and
- procedures for providing information to the public and for carrying out post-incident surveys and releasing post-incident reports.

APPENDIX 1

RECOMMENDED FORMAT OF THE SHIP RECYCLING FACILITY PLAN

SHIP RECYCLING FACILITY PLAN

1 Facility management

- 1.1 Company information
- 1.2 Training programme
- 1.3 Worker management
- 1.4 Records management

2 Facility operation

- 2.1 Facility information
- 2.2 Permits, licences and certification
- 2.3 Acceptability of ships
- 2.4 Ship Recycling Plan (SRP) development
- 2.5 Vessel arrival management
- 2.6 Ship recycling methodology
- 2.7 Reporting upon completion

3 Worker safety and health compliance approach

- 3.1 Worker health and safety
- 3.2 Key safety and health personnel
- 3.3 Job hazard assessment
- 3.4 Prevention of adverse effects to human health
 - 3.4.1 Safe-for-entry procedures
 - 3.4.1.1 Safe-for-entry criteria
 - 3.4.1.2 Competent person for Safe-for-entry determination
 - 3.4.1.3 Safe-for-entry inspection and testing procedures
 - 3.4.1.4 Oxygen
 - 3.4.1.5 Flammable atmospheres
 - 3.4.1.6 Toxic, corrosive, irritant or fumigated atmospheres and residues
 - 3.4.1.7 Safe-for-entry determination by a Competent person
 - 3.4.1.8 Safe-for-entry certificate, warning signs and labels
 - 3.4.1.9 Safe-for-entry operational measures
 - 3.4.2 Safe-for-hot-work procedures
 - 3.4.2.1 Safe-for-hot-work criteria
 - 3.4.2.2 Competent person for Safe-for-hot-work determination
 - 3.4.2.3 Safe-for-hot-work inspection, testing and determination
 - 3.4.2.4 Safe-for-hot-work certificate, warning signs and labels
 - 3.4.2.5 Safe-for-hot-work operational measures
 - 3.4.3 Welding, cutting, grinding and heating
 - 3.4.4 Drums, containers and pressure vessels
 - 3.4.5 Prevention of falling from heights and accidents caused by falling objects
 - 3.4.6 Gear and equipment for rigging and materials handling
 - 3.4.7 Houskeeping and illumination

- 3.4.8 Maintenance and decontamination of tools and equipment
- 3.4.9 Health and sanitation
- 3.4.10 Personal protective equipment
- 3.4.11 Worker exposure and medical monitoring
- 3.5 Emergency preparedness and response plan
- 3.6 Fire and explosion prevention, detection and response

4 Environmental compliance approach

- 4.1 Environmental monitoring
- 4.2 Management of Hazardous Materials
 - 4.2.1 Potentially containing Hazardous Materials
 - 4.2.2 Additional sampling and analysis
 - 4.2.3 Identification, marking and labelling and potential on-board locations
 - 4.2.4 Removal, handling and remediation
 - 4.2.5 Storage and labelling after removal
 - 4.2.6 Treatment, transportation and disposal
- 4.3 Environmentally sound management of Hazardous Materials
 - 4.3.1 Asbestos and materials containing asbestors
 - 4.3.2 PCBs and materials containing PCBs
 - 4.3.3 Ozone-depleting substances (ODSs)
 - 4.3.4 Paints and coatings
 - 4.3.4.1 Anti-fouling compounds and systems (organotin compounds including tributyltin (TBT))
 - 4.3.4.2 Toxic and highly flammable paints
 - 4.3.5 Hazardous liquids, residues and sediments (such as oils, bilge, and ballast water)
 - 4.3.6 Heavy metals (lead, mercury, cadmium and hexavalent chromium)
 - 4.3.7 Other Hazardous Materials
- 4.4 Prevention of adverse effects to the environment
 - 4.4.1 Spill prevention, control and countermeasures
 - 4.4.2 Storm-water pollution prevention
 - 4.4.3 Debris prevention and control
 - 4.4.4 Incident and spills reporting procedures

Plan Attachments

Facility Map
Organizational Flow Chart
Permits, Licences and Certification
Resumes

APPENDIX 2

EXAMPLE FORMAT OF FACILITY INFORMATION IN SRFP

(relating to sections 3.2.1 (Facility information) and 3.2.2 (Permits, licences and certification))

Facility name and contact information			
Facility name			
Registered address			
Facility address			
Representative and communication address			
Number of employees			
Tel. No.		Fax No.	
E-mail address		URL	
Working language			

Capacity of Facility	
Maximum capacity of ship to be recycled	DWT GT LDT Length Breadth Width Depth
Types of ship to be accepted	
Annual recycling capacity (in LDT)	

Waste management capacity	
Asbestos	removal storage process
Ozone-depleting substances	removal storage process
Polychlorinated biphenyls (PCB)	removal storage process
Anti-fouling compounds and system	removal storage process

Cadmium and Cadmium Compounds	removal storage process
Hexavalent Chromium and Hexavalent Chromium Compounds	removal storage process
Lead and Lead Compounds	removal storage process
Mercury and Mercury Compounds	removal storage treatment process
Polybrominated Biphenyl (PBBs)	removal storage treatment process
Polybrominated Diphenyl Ethers (PBDEs)	removal storage treatment process
Polychlorinated Naphthalenes (more than 3 chlorine atoms)	removal storage treatment process
Radioactive substances	removal storage treatment process
Certain Shortchain Chlorinated Paraffins (Alkanes, C10-C13, chloro)	removal storage treatment process
Hazardous liquids, residues and sediments	removal storage treatment process
Paints and coatings that are highly flammable and/or lead to toxic release	removal storage treatment process
Other Hazardous Materials not listed above and that are not a part of the ship structure (specify)	removal storage treatment process

Facility equipment and other information			
Area of Facility (m ²) [*]		Area of pavement (m ²)	
Description of ship recycling facility (layout, waterdepth, accessibility, etc.)			

Heavy lifting machines	e.g. Jib crane: 60 tons
	Mobile crane: 35 tons×1, 27 tons×1
	Hydraulic backhoe: SH400, ZX330, SK220, ZX200 With Shear, Magnet
	Hydraulic shear: 600 tons×1
	Weight bridge: 50 tons
Boat	e.g. Gross tonnage: 5 tons, Power: 240 PS
Shear	e.g. Capacity: 600 tons
O ₂ supply	e.g. Liquid O ₂ supply system: 10 m ³
Gas supply	e.g. LPG bottles
Compressed air	
Fire extinguisher	e.g. Portable fire extinguisher
Waste oil treatment	e.g. Oil water separation tank Tank capacity: abt. 20 tons
Wastes storage	e.g. Container for asbestos: 2
Incinerator	e.g. none
Electric power supply	e.g. Substation

Location	
Division and classification of the location	e.g. urbanization control area
Peripheral environment	e.g. factories: former quarry, two marinas in the vicinity Housing: private houses at the entrance and 200 m from entrance

Facility certificate and licence (if applicable specify: certifying authority; date of expiry; number of certificate; etc.)²	

Workers' certificates/licences	
Certificate/licence	Name
1) Manager of asbestos handling	Mr. Yxxxx ***** 1 person
2) Manager of PCB handling	Mr. Yxxxx ***** 1 person
3) Designated chemicals handling	None
4) Asbestos handling class	Mr. *****
	Mr. *****
	Mr. ***** 3 persons
5) Gas cutting	Mr. *****
	Mr. *****
	Mr. ***** 3 persons
6) Welding	Mr. ***** 1 person

² List here any applicable certificates, for example relevant to waste treatment, waste transportation, or other, such as certificates relevant to management systems of environmental performance, and/or occupational health and safety.

7) Zinc handling	Mr. ***** 1 person
8) Lifting	Mr. *****
	Mr. *****
	Mr. ***** 3 persons
9) Heavy lift machines	Mr. *****
	Mr. ***** 2 persons
10) Seafarer	Mr. ***** 1 person
11) Diver	None
12) Removal of Hazardous Materials (Material A)	Mr. ***** 2 persons
	(Material B) Mr. ***** 2 persons

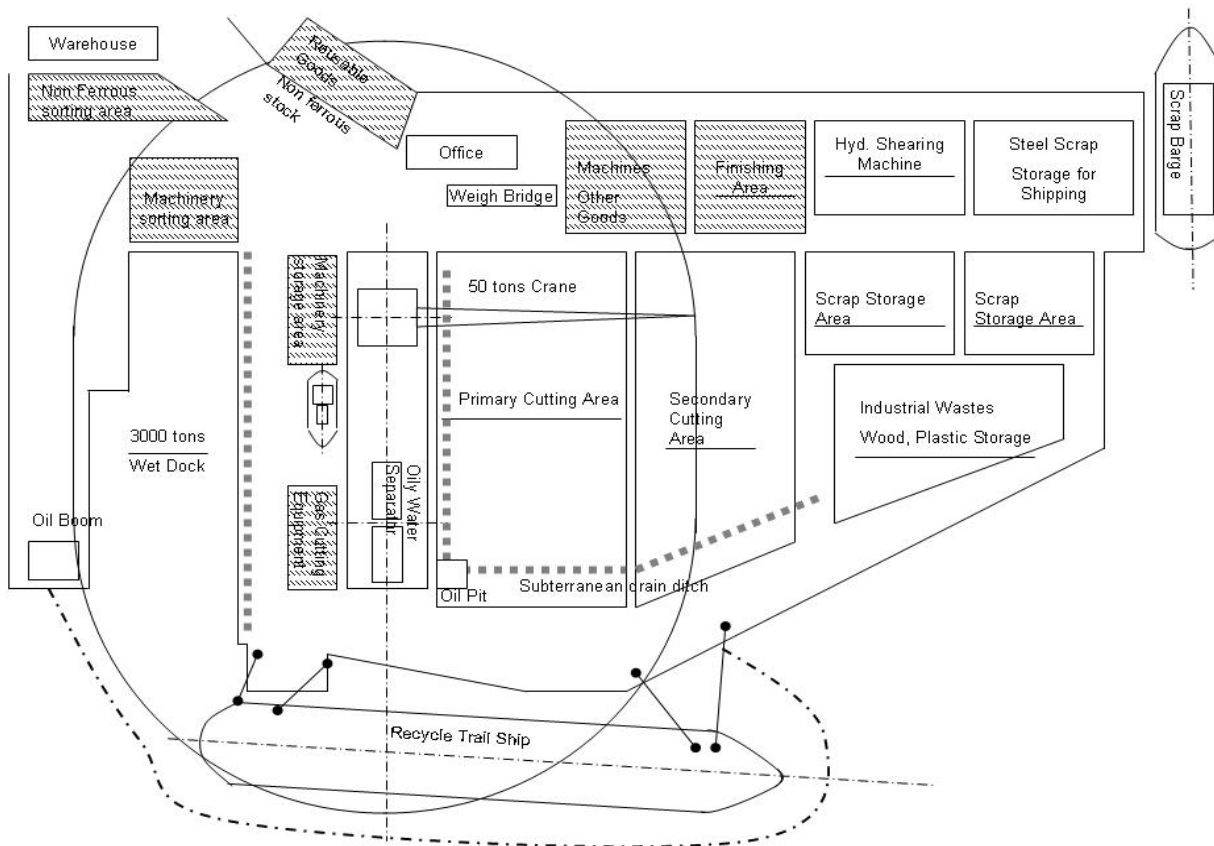
Subcontractor information³			
Subcontractor name			
Registered address			
Representative and communication address			
Field of services			
Licences for services			
Number of employees			
Tel. No.		Fax No.	
E-mail address		URL	

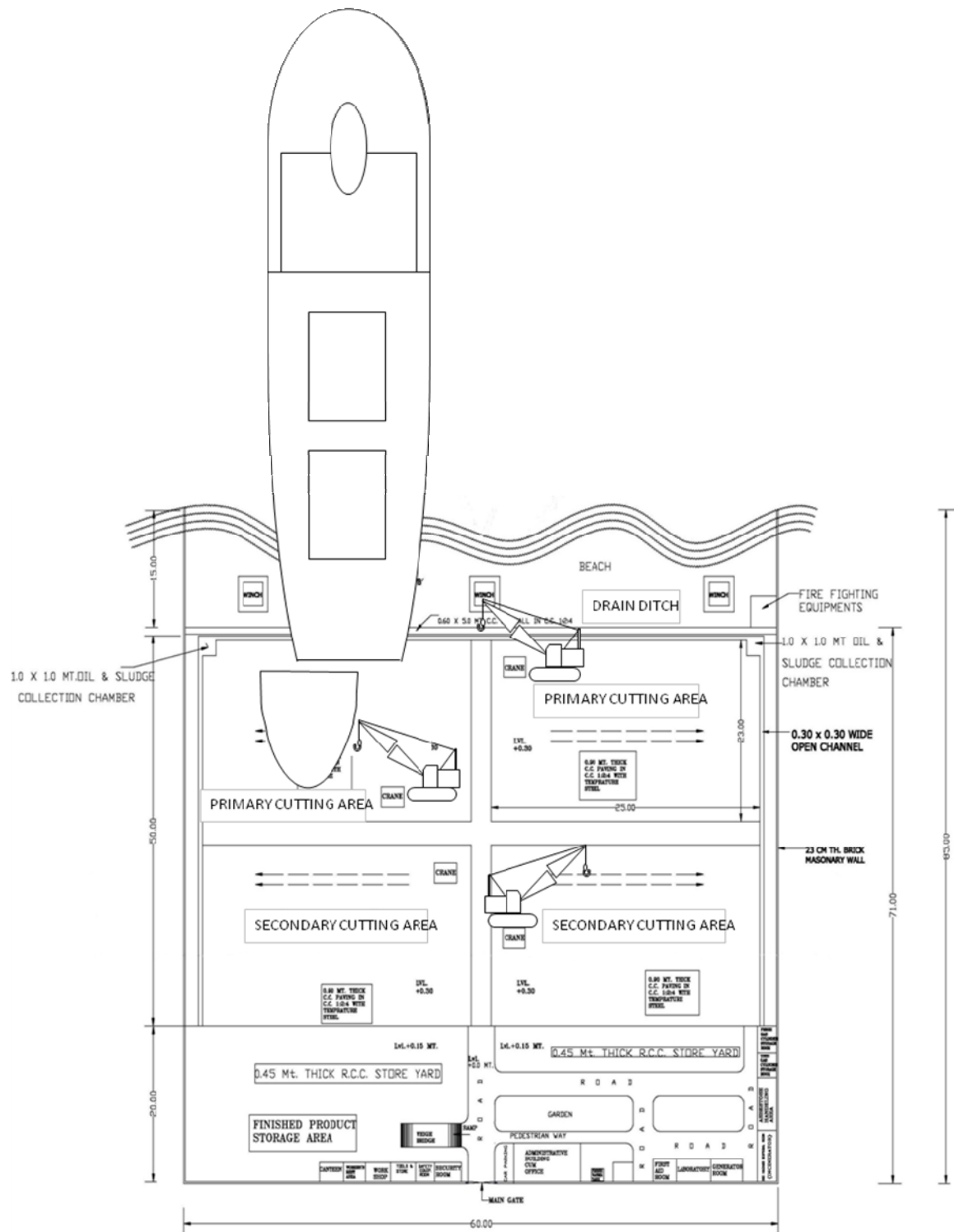
³ Supply all pertinent information relevant to the services of the subcontractor to the ship recycling facility.

Location Map

Yard plan (examples)

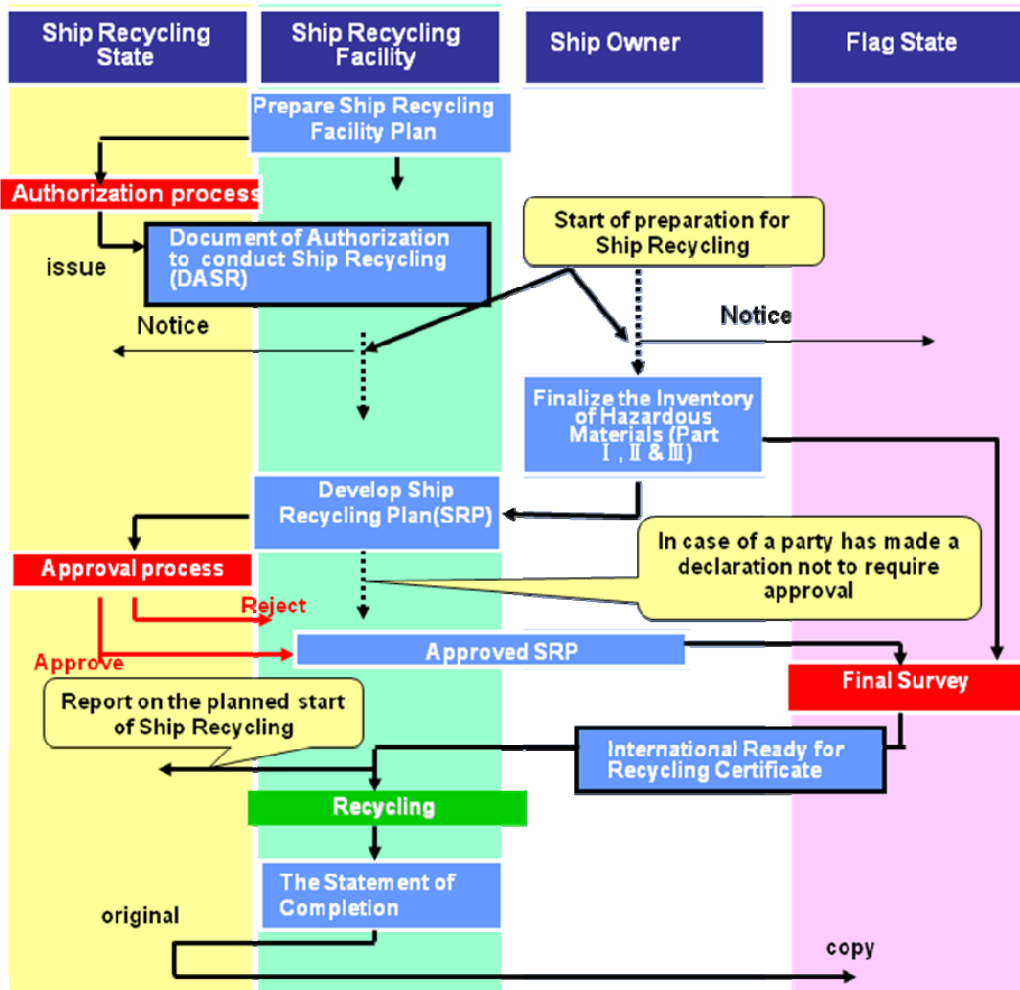
Yard plan should be included in Facility information.





APPENDIX 3

SHIP RECYCLING PROCESS FROM PREPARATION TO COMPLETION



Responsibility of Stakeholders			
<p>Regulation 16 -Authorize the Ship Recycling Facilities Regulation 9 -Approve SRP Regulation 25 -Send a copy of the Statement to the flag State</p>	<p>Regulation 18 -Prepare an SRF Regulation 9 -Develop a ship-specific SRP Regulation 24 -Notify its Competent Authority of the intent -Report to its Competent Authority the planned start of Ship Recycling Regulation 25 - Issue a statement of Completion and report to its Competent Authority</p>	<p>Regulation 5 -Have on board an Inventory of Hazardous Materials -Finalize Inventory of Hazardous Materials including Parts II & III Regulation 8 -Provide the information with the SRF</p>	<p>Regulation 10 -Verify Inventory of Hazardous Materials, SRP and DASR</p>

APPENDIX 4

RELEVANT INSTRUMENTS OF THE INTERNATIONAL LABOUR ORGANIZATION (ILO)

Fundamental ILO Conventions

Worst Forms of Child Labour Convention, 1999 (No. 182)
Minimum Age Convention, 1973 (No. 138)
Discrimination (Employment and Occupation) Convention, 1958 (No. 111)
Abolition of Forced Labour Convention, 1957 (No. 105)
Equal Remuneration Convention, 1951 (No. 100)
Right to Organise and Collective Bargaining Convention, 1949 (No. 98)
Freedom of Association and Protection of the Right to Organise Convention, 1948 (No. 87)
Forced Labour Convention, 1930 (No. 29)

Conventions on occupational safety and health and working conditions

Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187)
Prevention of Major Industrial Accidents Convention, 1993 (No. 174)
Night Work Convention, 1990 (No. 171)
Chemicals Convention, 1990 (No. 170)
Asbestos Convention, 1986 (No. 162)
Occupational Health Services Convention, 1985 (No. 161)
Protocol of 2002 to the Occupational Safety and Health Convention, 1981 (No. 155)
Occupational Safety and Health Convention, 1981 (No. 155)
Collective Bargaining Convention, 1981 (No. 154)
Occupational Safety and Health (Dock Work) Convention, 1979 (No. 152)
Working Environment (Air Pollution, Noise and Vibration) Convention, 1977 (No. 148)
Occupational Cancer Convention, 1974 (No. 139)
Benzene Convention, 1971 (No. 136)
Workers' Representatives Convention, 1971 (No. 135)
Maximum Weight Convention, 1967 (No. 127)
Employment Injury Benefits Convention, 1964 (No. 121)
Guarding of Machinery Convention, 1963 (No. 119)
Radiation Protection Convention, 1960 (No. 115)

ILO codes of practice

Safety and health in ports, 2005. ISBN 92-2-115287-1.

Contents overview: management of safety and health; safe systems of work; port infrastructure, plant and equipment; lifting appliances and loose gear; safe use of lifting appliances and loose gear; operations afloat; health; personal welfare facilities; emergency arrangements; testing of lifting appliances and loose gear.

Safety and health in shipbreaking: Guidelines for Asian countries and Turkey, 2004. ISBN 92-2-115289-8 (print version), ISBN 92-2-115671-0 (web version).

Contents overview: general responsibilities, duties and rights, and framework; Occupational safety and health management; occupational health services; operational planning; preventive and protective measures; management of hazardous substances; measures against physical, biological, ergonomic and psychosocial hazards; safety requirements for tools, machines and equipment; competence and training; personal protective equipment and protective clothing; contingency and emergency preparedness; special protection; welfare.

Safety and health in the non-ferrous metal industries, 2003. ISBN 92-2-111640-9.

Contents overview: general principles of prevention and protection; prevention and protection specific to non-ferrous metals production processes; recycling non-ferrous metals; occupational exposure limits for hazardous substances, electric and magnetic fields, optical radiation, heat noise and vibration.

Ambient factors in the workplace, 2001. ISBN 92-2-111628-X

Contents overview: general obligations, responsibilities, duties and rights; general principles of prevention and control; hazardous substances; ionising radiation; electric and magnetic fields; optical radiation; heat and cold; noise; vibration; occupational exposure limits.

Management of alcohol- and drug-related issues in the workplace, 1996. ISBN 92-2-109455-3.

Contents overview: development of an alcohol and drug policy for the work place; measures to reduce alcohol- and drug-related problems through good employment practices; restrictions on alcohol, legal and illegal drugs in the workplace; prevention through information, education and training programmes.

Accident prevention on board ship at sea and in port, 1996. ISBN 92-2-109450-2

Contents overview: shipboard emergencies and emergency equipment; safe access to ship; safe movement about the ship; entering and working in enclosed or confined spaces; manual lifting and carrying; tools and materials; welding, flame-cutting and other hot work; working aloft and over side; working with dangerous and irritating substances and radiations; upkeep of wire and fibre ropes; working in machinery spaces.

Recording and notification of occupational accidents and diseases, 1996. ISBN 92-2-109451-0.

Contents overview: recording, notification and investigation of occupational accidents, occupational diseases and dangerous occurrences, and related statistics.

Safety in the use of chemicals at work, 1993. ISBN 92-2-108006-4.

Contents overview: classification systems; labelling and marking; chemical safety data sheets; operational control measures; work systems and practices; personal protection; monitoring in the workplace; medical and health surveillance; investigation and reporting of accidents, occupational diseases and other incidents.

Safety, health and working conditions in the transfer of technology to developing countries, 1988. ISBN 92-2-106122-1

Contents overview: appendix A: Occupational safety and health check-list for hazard control in the design and operation of a plant or process.

Safety in the use of asbestos, 1984. ISBN 92-2-103872-6.

Contents overview: exposure limits; monitoring in the workplace; general preventive methods; personal protection; cleaning of premises and plant; packaging, transport and storage; disposal of asbestos waste; supervision of the health of workers; handling of asbestos fibre in ports and container terminals; construction, demolition and alteration work; exposure limits in various countries.

Occupational safety and health in the iron and steel industry, 1983. ISBN 92-2-103471-2

Contents overview: basic requirements for work stations, workplaces, traffic lanes and installations; maintenance, repair and demolition; electricity, tools, machine guarding and gas systems; transport and handling; substances and agents harmful to health; working clothes and personal protective equipment; medical services and supervision, safety and health organization, hygiene and welfare.

Safety and health in shipbuilding and ship repair, 1974. ISBN 92-2-101199-2.

Contents overview: workplaces, their approaches and equipment; scaffolding and staging; ladders, stairs, gangways and ramps; lifting appliances; ropes chains and accessories; hand tools, portable power-driven tools; work with dangerous and irritating substances and radiations; welding, flame cutting and other hot work; work in confined spaces and dangerous atmospheres; transport of workers by water; working clothes and personal protective equipment; medical services and supervision, safety and health organization, hygiene and welfare.

Other guidelines

Guidelines on occupational safety and health management systems, ILO-OSH 2001. ISBN 92-2-111634-4.

Contents overview: the occupational safety and health management system in the organisation; policy; organizing; planning and implementation; evaluation; action for improvement.

APPENDIX 5

RELEVANT INSTRUMENTS AND REFERENCE MATERIALS OF THE UNITED NATIONS ENVIRONMENT PROGRAMME (UNEP) AND OTHERS

Instruments

Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, 1989

Stockholm Convention on Persistent Organic Pollutants (POPs), 2001

Montreal Protocol on Substances that Deplete the Ozone Layer, 1987

Reference Materials⁴

Technical Guidelines for the Environmentally Sound Management of the Full and Partial Dismantling of Ships

<http://www.basel.int/Portals/4/Basel%20Convention/docs/meetings/sbc/workdoc/techships-e.pdf>

Training Resource Pack for Hazardous Waste Management in Developing Countries

<http://www.basel.int/pub/pub.html>

Updated General Technical Guidelines for the Environmentally Sound Management of Wastes Consisting of, Containing or Contaminated with Persistent Organic Pollutants (POPs)

<http://www.basel.int/Portals/4/Basel%20Convention/docs/pub/techguid/tg-POPs.pdf>

Updated Technical Guidelines for the Environmentally Sound Management of Wastes Consisting of, Containing or Contaminated with Polychlorinated Biphenyls (PCBs), Polychlorinated Terphenyls (PCTs) or Polybrominated Biphenyls (PBBs)

<http://www.basel.int/Portals/4/Basel%20Convention/docs/pub/techguid/tg-PCBs.pdf>

Technical Guidelines for the Environmentally Sound Management of Wastes Consisting of Elemental Mercury and Wastes Containing or Contaminated with Mercury

<http://www.basel.int/Implementation/TechnicalMatters/DevelopmentofTechnicalGuidelines/AdoptedTechnicalGuidelines/tabid/2376/Default.aspx>

Basel Convention Technical Guidelines on Waste Oils from Petroleum Origins and Sources

<http://www.basel.int/Portals/4/Basel%20Convention/docs/meetings/sbc/workdoc/old%20docs/tech-y8.pdf>

Technical Guidelines for the Environmentally Sound Management of Waste Lead-acid Batteries

<http://www.basel.int/Portals/4/Basel%20Convention/docs/pub/techguid/tech-wasteacid.pdf>

Basel Convention Technical Guidelines on Used Oil Re-refining or Other Re-uses of Previously Used Oil

<http://www.basel.int/Portals/4/Basel%20Convention/docs/meetings/sbc/workdoc/old%20docs/tech-r9.pdf>

⁴ A full set of the Basel Convention Technical Guidelines can be accessed at: <http://www.basel.int/Implementation/TechnicalMatters/DevelopmentofTechnicalGuidelines/AdoptedTechnicalGuidelines/tabid/2376/Default.aspx>.

Technical Guidelines on the Environmentally Sound Recycling/Reclamation of Metals and Metal Compounds

<http://www.basel.int/Portals/4/Basel%20Convention/docs/pub/techguid/r4-e.pdf>

Technical Guidelines on the Environmentally Sound Management of Biomedical and Healthcare Wastes

<http://www.basel.int/Portals/4/Basel%20Convention/docs/pub/techguid/tech-biomedical.pdf>

Basel Convention Technical Guidelines on Specially Engineered Landfill

<http://www.basel.int/Portals/4/Basel%20Convention/docs/meetings/sbc/workdoc/old%20docs/tech-d5.pdf>

Basel Convention Technical Guidelines on Incineration on Land

<http://www.basel.int/Portals/4/Basel%20Convention/docs/meetings/sbc/workdoc/old%20docs/tech-d10.pdf>

Basel Convention Technical Guidelines on Hazardous Waste – Physico-Chemical Treatment — Biological Treatment

<http://www.basel.int/Portals/4/Basel%20Convention/docs/meetings/sbc/workdoc/old%20docs/tech-d8d9.pdf>

United Nations Recommendations on the Transport of Dangerous Goods

<http://www.unece.org/trans/danger/publi/unrec/English/Recommend.pdf>

United Nations Globally Harmonized System for the Classification and Labelling of Chemicals (GHS)

http://www.unece.org/trans/danger/publi/ghs/ghs_rev03/03files_e.html

APPENDIX 6

MATERIALS FOUND ON BOARD SHIPS THAT THE SHIP RECYCLING FACILITY SHOULD BE PREPARED TO HANDLE (INCLUDED IN PART III OF THE INVENTORY OF HAZARDOUS MATERIALS)

Kerosene
White spirit
Lubricating oil
Hydraulic oil
Anti-seize compounds
Fuel additive
Engine coolant additives
Antifreeze fluids
Boiler and feed water treatment and test reagents
Deionizer-regenerating chemicals
Evaporator dosing and descaling acids
Paint stabilizers/rust stabilizers
Solvents/thinners
Paints
Chemical refrigerants
Battery electrolyte
Alcohol/methylated spirits
Acetylene
Propane
Butane
Oxygen
Carbon dioxide
Perfluorocarbons (PFCs)
Methane
Hydrofluorocarbons (HFCs)
Nitrous oxide (N₂O)
Sulfur hexafluoride (SF₆)
Bunkers, e.g. fuel oil
Grease
Fuel gas
Batteries (including lead-acid batteries)
Pesticides/insecticide sprays
Extinguishers
Chemical cleaner (including electrical equipment cleaner, carbon remover)
Detergent/bleacher (potentially a liquid)
Miscellaneous medicines
Fire-fighting clothing and personal protective equipment
Spare parts containing Hazardous Materials

ANNEX 5

RESOLUTION MEPC.211(63)

Adopted on 2 March 2012

2012 GUIDELINES FOR THE AUTHORIZATION OF SHIP RECYCLING FACILITIES

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee conferred upon it by the international conventions for the prevention and control of marine pollution,

RECALLING ALSO that the International Conference on the Safe and Environmentally Sound Recycling of Ships held in May 2009 adopted the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009 (the Hong Kong Convention) together with six Conference resolutions,

NOTING that regulation 16.1 of the annex to the Hong Kong Convention requires that Ship Recycling Facilities which recycle ships to which the Convention applies, or ships treated similarly pursuant to article 3.4 of the Hong Kong Convention, shall be authorized by a Party taking into account the guidelines developed by the Organization,

NOTING ALSO that regulation 15.3 of the annex to the Hong Kong Convention requires that each Party shall establish a mechanism for ensuring that Ship Recycling Facilities comply with the requirements of the Convention including the establishment and effective use of inspection, monitoring and enforcement provisions, and that such a mechanism may include an audit scheme to be carried out by the Competent Authority(ies) or an organization recognized by the Party, taking into account guidelines developed by the Organization,

BEARING IN MIND that the International Conference on the Safe and Environmentally Sound Recycling of Ships, in its resolution 4, invited the Organization to develop Guidelines for global, uniform and effective implementation and enforcement of the relevant requirements of the Convention as a matter of urgency,

HAVING CONSIDERED, at its sixty-third session, the draft 2012 Guidelines for the authorization of ship recycling facilities, developed by the Working Group on Ship Recycling,

1. ADOPTS the 2012 Guidelines for the authorization of ship recycling facilities, as set out in the Annex to this resolution;
2. INVITES Governments to apply the Guidelines as soon as possible, or when the Hong Kong Convention becomes applicable to them; and
3. REQUESTS the Committee to keep the Guidelines under review.

ANNEX

2012 GUIDELINES FOR THE AUTHORIZATION OF SHIP RECYCLING FACILITIES

TABLE OF CONTENTS

1	INTRODUCTION
1.1	Objectives of the guidelines
1.2	Approach of the guidelines
2	DEFINITIONS
3	IDENTIFICATION OF COMPETENT AUTHORITY(IES) RESPONSIBLE FOR AUTHORIZATION
4	APPLICATION FOR AUTHORIZATION
4.1	General
5	NECESSARY DOCUMENTATION FOR ISSUING THE DOCUMENT OF AUTHORIZATION TO CONDUCT SHIP RECYCLING (DASR)
5.1	General
5.2	Management of Hazardous Materials
5.3	Other requirements
6	VERIFICATION OF DOCUMENTATION
7	SITE INSPECTION
8	ISSUANCE, AMENDMENT, SUSPENSION, WITHDRAWAL AND RENEWAL OF DASR
8.1	General
8.2	Mechanism for ensuring the establishment and effective use of inspection, monitoring and enforcement provisions
8.3	Issuance
8.4	Amendment
8.5	Suspension
8.6	Withdrawal
8.7	Renewal
9	VALIDITY
10	COMMUNICATION OF INFORMATION
10.1	Organizations recognized by the Competent Authority(ies)
10.2	Violations and sanctions

1 INTRODUCTION

1.1 Objectives of the guidelines

These guidelines provide recommendations for Parties on establishing mechanisms for authorizing Ship Recycling Facilities in accordance with the requirements of the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009 (hereafter referred to as "the Convention").

These guidelines should be used primarily by the Competent Authority(ies) and the organizations recognized by the Competent Authority(ies). The guidelines may also be useful for Ship Recycling Facilities in preparing for the authorization process.

1.2 Approach of the guidelines

Article 6 and regulation 16 of the Convention require Ship Recycling Facilities that recycle ships to which the Convention applies, or ships treated similarly pursuant to article 3.4 of the Convention, to be authorized taking into account the guidelines developed by the Organization.

The present guidelines provide guidance on establishing a scheme for authorizing Ship Recycling Facilities, covering the following areas: necessary documentation; verification of documentation; site inspection; audit scheme; specific procedural action relating to issuing, amending, suspending, withdrawing and renewing the Document of Authorization to conduct Ship Recycling (DASR); validity of the DASR; communication of information; and monitoring of the activities of the Ship Recycling Facility.

2 DEFINITIONS

The terms used in these guidelines have the same meaning as those defined in the Convention. For the purposes of these guidelines, the following additional definitions apply.

2.1 "Organization recognized by the Competent Authority(ies)" means an organization designated by the Competent Authority(ies) in accordance with regulation 16.2 and regulation 16.3 of the Annex to the Convention to undertake relevant tasks on behalf of the Competent Authority(ies).

2.2 "Determination" means the process by which the Competent Authority(ies) decides whether to issue, amend, suspend, withdraw or renew a DASR.

3 IDENTIFICATION OF COMPETENT AUTHORITY(IES) RESPONSIBLE FOR AUTHORIZATION

According to the Convention, the Party shall designate one or more Competent Authorities as responsible for authorizing Ship Recycling Facilities within its jurisdiction. The Competent Authority(ies) should identify a single contact point to act as central communicating partner between the Competent Authority(ies), Administrations and Ship Recycling Facilities. The Competent Authority(ies) may entrust the authorization of Ship Recycling Facilities to organizations recognized by it (regulation 16.2). The Party should determine the extent to which it delegates the authorization of the Ship Recycling Facility to organizations recognized by the Competent Authority(ies), and notify the Organization of the specific responsibilities and conditions of the authority delegated to such organizations, for circulation to Parties (regulation 16.3). The extent to which authority is delegated to the organization recognized by the Competent Authority(ies) therefore varies according to each Party's decision. In every case, the Competent Authority retains full responsibility for the authorization (regulation 16.3).

Hereafter in these guidelines, the term "Competent Authority(ies)" should be interpreted as "Competent Authority(ies)" or "organization recognized by the Competent Authority(ies)", depending upon the extent to which authority is delegated to such organizations in each Party.

Organizations recognized by the Competent Authority(ies) should work in harmony with the Competent Authority(ies) while undertaking the responsibilities that it has entrusted to them.

The Competent Authority(ies) should ensure that the organization recognized by it has the appropriate qualifications and expertise to conduct the tasks delegated to it, taking into account guidance to be developed by the Organization.

Where the organization recognized by the Competent Authority(ies) is delegated to authorize Ship Recycling Facilities, a system for tracking the flow of information between the organization and the Competent Authority(ies) should be established.

The Competent Authority(ies) should establish systems for evaluating, controlling and auditing the organization recognized by it.

4 APPLICATION FOR AUTHORIZATION

4.1 General

The Ship Recycling Facility should submit an application for authorization to conduct ship recycling to the Competent Authority(ies). The formal application should be accompanied by a completed Ship Recycling Facility Plan (SRFP). The Ship Recycling Facility and Competent Authority(ies) may hold preliminary discussions before the formal application is submitted.

The Competent Authority(ies) should be aware of any requirements and obligations outside the scope of the Convention that have been established under regional and/or national law and regulations and are applicable to Ship Recycling Facilities operating under its jurisdiction.

Nothing in the Convention or these guidelines precludes a Party from supplementing the requirements of the Convention with technical standards, codes of practice and/or guidelines that might take account of technological developments, advanced practice, norms and standards, in order to further reduce risks to occupational health and safety and to the environment and any other adverse effects related to ship recycling, or from using such supplementary requirements during the process of authorizing a Ship Recycling Facility.

The Ship Recycling Facility should submit a formal application, ensuring that it is complete. The onus is on the Ship Recycling Facility to assess the effects of its operations and to demonstrate how ship recycling operations should be managed so as to meet the requirements of the Convention and of relevant national and/or regional legislation.

The Competent Authority(ies) may ask for additional documentation and/or return the application if it is not complete. The Ship Recycling Facility may draw upon or attach other sources of information in its application, and indeed is encouraged to make use of existing information where appropriate.

5 NECESSARY DOCUMENTATION FOR ISSUING THE DOCUMENT OF AUTHORIZATION TO CONDUCT SHIP RECYCLING (DASR)

5.1 General

The SRFP, described in the *Guidelines for Safe and Environmentally Sound Ship Recycling* ("Facility Guidelines") and as required by regulation 18, shall be used as the main document in issuing the DASR.

Any other documentation and/or certification required under applicable international or national legislation, including those related to ship recycling activity, should be submitted with the application.

The Competent Authority(ies) should ensure that the Ship Recycling Facility has a management system in place and described in its documentation, together with the appropriate procedures and techniques, aimed at protecting human health and the environment without posing any unacceptable risks. The Competent Authority(ies) should check that the SRFP includes the policy, plans, systems and other factors set out in regulation 18 of the annex to the Convention.

5.2 Management of Hazardous Materials

The Competent Authority(ies) should check that the Ship Recycling Facility has established, implemented and maintained procedures for environmentally sound management of Hazardous Materials and wastes.

The Competent Authority(ies) should check that the Ship Recycling Facility has procedures in place to ensure that all Hazardous Materials detailed in the Inventory of Hazardous Materials are, to the maximum extent possible prior to cutting, identified, labelled, packaged and removed by properly trained and equipped workers, then stored and transported to waste management facilities by licensed vehicles.

The Competent Authority(ies) should check that the Ship Recycling Facility has established procedures to send all Hazardous Materials and wastes to authorized waste management and disposal sites before issuing a DASR. Documentation demonstrating these sites' compliance with national regulations⁵ should also be checked by the Competent Authority.

The Competent Authority(ies) should ensure that the Ship Recycling Facility has established procedures for managing all wastes generated by recycling activity, which should be kept separate from recyclable materials and equipment and labelled and stored under conditions that do not pose a risk to workers, human health or the environment.

5.3 Other requirements

The Ship Recycling Facility should undertake all necessary steps to fulfil the requirements of applicable international and national legislation.

The Ship Recycling Facility should ensure that planned and conducted activities respect the limits set out in applicable national laws and regulations on land use where the Ship Recycling Facility is located and is operating.

⁵ Where such regulations are based on applicable international agreements, these should also be referenced.

The Competent Authority(ies) may require an environmental impact study from Ship Recycling Facilities. In this case, the following guidance is to be considered.

A study may be conducted to assess the potential environmental impacts from the Ship Recycling Facility as a basis for identifying and prioritizing the Facility's environmental aspects. If a new Ship Recycling Facility is planned, the study may provide the basis to determine whether the location is appropriate and suitable for ship recycling activities. If the actual project involves a site already used for ship recycling or similar activities, the study may include an assessment of the environmental conditions of the location. It is advisable to conduct the study during the planning stage and to initiate it as early as possible.

The study may address in particular whether the Ship Recycling Facility has adverse effects on factors including, but not limited to, the following, and whether these effects are within acceptable limits as defined by applicable international and/or national legislation:

- flora and fauna of the specific area;
- hydrogeology;
- surface and ground water;
- soil structure;
- historical, cultural, social and economic values; and
- air quality.

The study may focus particularly on the significant environmental effects of releases, identifying and quantifying the possible release of polluting substances into any media and their effects. Most attention might be paid to large-scale releases and releases of the more hazardous pollutants, which are likely to have most significant effects. Conversely, any releases at levels so low that they are unlikely to have any serious effects do not need to be assessed. However, consideration may be given to other substances capable of causing pollution in the same way.

The study may pay special attention to:

- .1 Consumption and nature of raw materials:
Consideration may be given to options that use fewer resources or those that use materials that are less likely to create hazards or pollution risks;
- .2 Waste issues:
Consideration may be given to the annual material flow, consisting of incoming ships for recycling and the resultant waste leaving the Facility. This may cover the types of waste that the Facility can receive and store, depending on the ships that the Facility is planning to recycle, and for each type:
 - the maximum quantity that the Facility can receive;
 - the maximum storage capacity for each type of waste; and
 - the environmental hazards caused by waste during recycling activities and possible measures to mitigate the negative impact on the environment.

- .3 Accidents:
Consideration may be given to the environmental hazards posed by possible accidents and their associated risks, including the practicality of measures to reduce risks and hazards and to respond to accidents; and
- .4 Site restoration:
Consideration may be given as to whether there is a risk that the ship recycling operation will pollute the site, including planning in advance for decommissioning and restoring the site upon closure.

In some cases, a judgement will need to be made about the relative significance of different environmental effects. In making this comparison, certain basic parameters may help in reaching a conclusion. For example, long-term irreversible effects are worse than short-term reversible ones, if all other factors, such as immediate severity, are equal.

6 VERIFICATION OF DOCUMENTATION

The application, including its documentation, should be assessed and verified by the Competent Authority(ies). The assessment and verification should be concluded within a reasonable time frame, if possible within three months.

The assessment and verification process should include a site inspection, as described in section 7, after the documentation has been reviewed and evaluated.

If the application is rejected, the Competent Authority(ies) should inform the Ship Recycling Facility of the reason for the rejection.

7 SITE INSPECTION

Site inspections should be conducted at Ship Recycling Facilities. The Competent Authority(ies) is responsible for planning and undertaking the site inspection. The site inspection may involve, or use the guidance and reports of, local or national labour inspection services.

The main purpose of the site inspection is to check the consistency of the documentation with the actual arrangements and operations at the Ship Recycling Facility.

The first site inspection should be announced in advance to the Ship Recycling Facility, in order to ensure that it will be possible to meet all relevant persons.

In advance of, during and following the site inspection, any necessary information should be provided by the Ship Recycling Facility.

Safety issues should be considered and sufficient precautions taken throughout the site inspection, including with respect to personal protection.

The inspection should address the functionality of arrangements established, focusing on safety and environmental protection and the handling of all materials including hazardous wastes and debris. The inspection should cover situations in which the Ship Recycling Facility is operating at maximum capacity with a full body of staff, including subcontractors.

The site inspection should verify that a SRFP exists and that it is being fully implemented. In particular, the following factors should be verified:

- .1 availability of the SRFP to all personnel at the Ship Recycling Facility;
- .2 knowledge of the SRFP, as appropriate, among management, Competent persons and workers according to their designated tasks, roles and responsibilities, including those with special duties such as first-aid personnel and fire fighters, as assessed through interviews with all categories of personnel and supervision of drills if appropriate; and
- .3 implementation of the objectives of the SRFP, as demonstrated by implementation of operational procedures in:
 - ship preparation processes;
 - monitoring of Safe-for-entry and Safe-for-hot-work conditions;
 - deconstruction processes;
 - hot work processes;
 - management of Hazardous Materials and wastes (protective measures and removal, transport, storage and disposal); and
 - emergency preparedness.

The site inspection should identify procedures and routines for the following:

- .1 developing and using the Ship Recycling Plan;
- .2 accepting ships, taking into account relevant requirements and the required certificates;
- .3 reporting and following up incidents; and
- .4 conducting operations in a safe and environmentally sound manner, in accordance with the regulations of the Convention.

The site inspection should verify the availability, size, restrictions and general set-up of the Ship Recycling Facility as stated in the application. Any arrangements established for the purpose of facilitating the recycling process should be described in the inspection report, as should any limitations related to the operation of the Ship Recycling Facility.

All sites utilizing established procedures, methods, arrangements and facilities for the removal, storage, processing (incineration, reclamation and specific treatment), transport and disposal of Hazardous Materials and wastes should be inspected. The inspection should verify that the Ship Recycling Facility is designed and constructed to manage any Hazardous Materials and wastes that are included in their application.

In cases where the Ship Recycling Facility is engaging one or more contractors by means of subcontracting for any activities related to the requirements of the Convention, the contractors should be subject to the same verification as if the Ship Recycling Facility itself was undertaking the activities. The Ship Recycling Facility is responsible for providing the Competent Authority with information required to perform a verification on the aforementioned contractors, as part of the overall assessment of the Facility.

Furthermore, the site inspection should include a practical test for assessing the implementation of measures relating to emergency preparedness and response. This may involve an unannounced complete evacuation of the Ship Recycling Facility or a similar procedure described in the plans for emergency preparedness and response.

The Competent Authority(ies) should have procedures in place for providing detailed information and analysis of the authorization process to the Ship Recycling Facility. Such procedures could include a written report by the Competent Authority(ies), to be made available to the Ship Recycling Facility, containing inspection data and an evaluation of findings.

The supplement to the DASR (appendix 5 of the annex to the Convention) may be used as guidance in planning site inspections.

If the Ship Recycling Facility is under construction or not fully operational, the site inspection should be conducted as far as practicable, and the Competent Authority(ies) may issue the DASR subject to certain terms and conditions as appropriate. In such a case, an additional, follow-up site inspection should be conducted after the Ship Recycling Facility becomes fully operational. According to the results of the follow-up site inspection, the Competent Authority(ies) may suspend, amend or withdraw the DASR.

8 ISSUANCE, AMENDMENT, SUSPENSION, WITHDRAWAL AND RENEWAL OF DASR

8.1 General

As stated in regulation 16.5 of the annex to the Convention, the Party shall identify the terms on which the authorization will be issued, withdrawn, suspended, amended and renewed.

8.2 Mechanism for ensuring the establishment and effective use of inspection, monitoring and enforcement provisions

Under regulation 15.3 of the annex to the Convention, each Party shall establish a mechanism for ensuring the establishment and effective use of inspection, monitoring and enforcement provisions, including powers of entry and sampling. Such a mechanism may include an audit scheme to be carried out by the Competent Authority(ies) or an organization recognized by the Competent Authority(ies). If the Party establishes an audit scheme based on the national law and regulations, the Party should make available relevant information on the audit scheme in advance of any audit, including, but not limited to, the following:

- the frequency of the audit: at least one audit should be conducted, in the middle of the validity period of the DASR; and
- the audit process: this may include the submission by the Ship Recycling Facility of written reports containing summaries of ship recycling activities and interviews with representatives or managers of the Ship Recycling Facility and site inspections.

The Competent Authority(ies) should establish procedures for conducting follow-up site inspections at the Ship Recycling Facility as necessary, after the DASR has been issued.

8.3 Issuance

The Competent Authority(ies) should issue a DASR to the Ship Recycling Facility if the document verification process and site inspection prove satisfactory.

The DASR should not be issued until all required documentation has been received and the site inspection has been successfully completed.

The supplement to the DASR (appendix 5 of the annex to the Convention) must be permanently attached to the DASR. Most of the information required for the supplement is available in the SRFP, as described in the Facility Guidelines.

The DASR should be available at the Ship Recycling Facility at all times.

8.4 Amendment

The Competent Authority(ies) may amend the DASR as appropriate. The amendment procedure may be initiated by the Competent Authority(ies) or the Ship Recycling Facility. The Competent Authority(ies) may require a site inspection to verify compliance with the Convention before it amends the DASR. The Ship Recycling Facility should provide the Competent Authority(ies) with appropriate documentation and updates to the SRFP.

Situations which may necessitate amendment of the DASR include, but are not limited to, the following:

1. the Ship Recycling Facility applies for the DASR amendment in order to widen the scope of authorization; for example, after having invested in the Facility and added new capabilities which should be reflected in the DASR;
2. the DASR amendment is triggered by compelling needs on the part of Competent Authority(ies); for example, when new domestic regulations are put into effect;
3. the DASR amendment is triggered by investigations conducted by the Competent Authority(ies) following accidents;
4. the DASR amendment is triggered by a deviation of practice at the Ship Recycling Facility from the SRFP, which thereby affect the contents of the DASR; and
5. the DASR amendment is triggered by a change in the hazardous materials which the Ship Recycling Facility can remove, store and process.

8.5 Suspension

The Competent Authority(ies) may suspend the DASR, or require corrective action by the Ship Recycling Facility, if it has information demonstrating that the Ship Recycling Facility no longer satisfies the terms and conditions of the DASR. The Competent Authority(ies) may suspend the DASR temporarily or indefinitely, depending on the Ship Recycling Facility's subsequent level of compliance. During any period of suspension, the Ship Recycling Facility is not authorized to conduct recycling activities, except insofar as the Competent Authority(ies) has specified that the Ship Recycling Facility should continue with certain activities that do not negatively affect the protection of human health or the environment.

The Competent Authority(ies) should suspend the DASR in cases where site inspections, conducted as part of the audit, are restricted by the Ship Recycling Facility without justification.

8.6 Withdrawal

The Competent Authority(ies) may withdraw the DASR if the Competent Authority(ies) has information demonstrating that the Ship Recycling Facility no longer satisfies the terms and conditions of the DASR. The Competent Authority(ies) should generally reserve withdrawal for cases when the Ship Recycling Facility has seriously or repeatedly failed to comply and when suspending the DASR does not present an adequate remedy. The Competent Authority(ies) may reinstate the Ship Recycling Facility's authorization only after the Ship Recycling Facility has submitted a new application to the Competent Authority(ies) demonstrating that the Ship Recycling Facility is in full compliance with the Convention's requirements and related Guidelines.

Any action or modification at the Ship Recycling Facility that may affect the conditions on which the authorization was granted should prompt a new inspection. If such an inspection reveals that the conditions for authorization are no longer in place, the DASR should be withdrawn.

8.7 Renewal

The Competent Authority(ies) may renew the DASR upon written request by the Ship Recycling Facility. The Ship Recycling Facility should support any such request with revised documents, as appropriate, as stated in section 6 above in relation to the Ship Recycling Facility's initial application for authorization. The Competent Authority(ies) may, at its discretion, conduct a site inspection before it renews the DASR.

9 VALIDITY

The DASR shall be issued for a period determined by the Party not exceeding five years.

If a Ship Recycling Facility changes ownership, the new owner should – within a reasonable time frame, if possible not exceeding 30 days – notify the Competent Authority(ies) so that it can amend the DASR accordingly. The new owner should confirm in writing that it will fully comply with all requirements, including the SRFP, and the Convention. The new owner should also provide any supporting documentation requested by the Competent Authority(ies). If operations at the Ship Recycling Facility are changed in such a way as to affect the conditions on which authorization was granted, the Competent Authority(ies) may amend, suspend or withdraw the DASR and inform the new owner accordingly.

10 COMMUNICATION OF INFORMATION

10.1 Organizations recognized by the Competent Authority(ies)

The Party shall notify the Organization of the specific responsibilities and conditions of the authority delegated to the organizations recognized by the Competent Authority(ies), for circulation to Parties. In every case, the Competent Authority(ies) retains full responsibility for the authorization issued (regulation 16.3).

The organization recognized by the Competent Authority(ies) may be asked to maintain a list of surveyors with adequate expertise for conducting the tasks requested by the Party.

Each Party shall report to the Organization and the Organization shall disseminate, as appropriate, a list of the organizations recognized by the Competent Authority(ies) and nominated surveyors that are authorized to act on behalf of that Party in the administration of matters relating to the control of ship recycling in accordance with the Convention, and the specific responsibilities and conditions of the authority delegated to organizations recognized by the Competent Authority(ies) or nominated surveyors (article 12.3).

10.2 Violations and sanctions

In case of an alleged violation, the Party having jurisdiction over the Ship Recycling Facility shall promptly inform the Party that reported the alleged violation, as well as the Organization, of any action taken.

If the Party has not taken any action within one year of receiving the information, it shall inform the Party that reported the alleged violation, and the Organization, of the reasons why no action has been taken.

If a request for an investigation is received from any Party, together with sufficient evidence that a Ship Recycling Facility is operating, has operated or is about to operate in violation of any provision of the Convention, the Party under whose jurisdiction the Ship Recycling Facility is operating should investigate it and produce a report. The report of any such investigation, including information on action taken or to be taken, if any, shall be sent to the requesting Party and to the Organization for appropriate action.

The Competent Authority(ies) should be promptly informed by the Ship Recycling Facility in cases of alleged violations covered by article 9 of the Convention.
