

2014

Young Freight Forwarder of the Year Award Competition

Multimodal Transport Operations in Practice:

Radioactives and Abnormals From and to South Africa

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2 INTRODUCTION

According to Pienaar and Vogt, "Today's dynamic business environment means that many organisations have to expand, merge, contract or otherwise design their supply chain networks. The various geographically dispersed inbound and outbound activities make up business's supply chain network, the focal business is normally at the centre of this network of suppliers and customers. This network provides the arteries, or channels, though which inventory flows. The main network activities are movement, storage and transformation, which extend from the supply sources to the consumers of the final products"

In the context of international trade, the same authors go on to say, "International economic developments have a serious impact on the domestic activities of countries. A business cannot ignore competitive situations and technological innovations in other countries. Modern economics are highly interdependent and the successful ones are those that compete effectively in the international markets. In a rapidly integrating and globalising world market, therefore, efficient and effective international goods transactions are of particular importance. International logistics practice must accommodate all domestic logistics demands. In an international context, logistics mangers have to deal with more channel partners or intermediaries, longer distances, more steps in the supply chain, greater diversity, and more statutory requirements and documentation."

This paper shows how these concepts are applied by narrating the principles, processes and procedures used in accomplishing the international trade cycles of:

 Three packages of radioactive isotopes from South Africa's nuclear products production facility at Pelindaba, North West Province to the State Hospital in Windhoek, Namibia via airfreight

2. A consignment of project cargo consisting of:

1 x Unpacked transformer, Mass 346,000 kgs, Volume 246 M3,

27 x cases Machinery in breakbulk format, Mass 60,270 kgs, Volume 413.024 M3,

1 x Case containing primer IMO Class 9, UN No 3082 Mass 24 kgs, Volume 0.092 M3,

to be moved from Weiz, Austria to the Kusile Power Station, about 15 kilometres north of the existing Kendal Power Station near Witbank, Mpumalanga Province via inland waterway, ocean and road freight.

The movement of both consignments represents a multimodal cargo movement as they are accomplished under the control of a single Multimodal Transport Operator (MTO), Bidvest Panalpina Logistics (BPL).

2.1.1 Background to Bidvest Panalpina Logistics (BPL)

The company's mission is to provide world-class Supply Chain solutions that aim to transform and expand the reach of their clients' businesses globally.

Further details may be obtained from:

http://www.bpl.za.com/asp/content.asp?ipkCategoryID=20.

On a global basis BPL operates in partnership with the Panalpina Group.

2.1.2 Background to the Panalpina Group

The Panalpina Group is one of the world's leading providers of supply chain solutions.

Further details may be obtained from:

http://www.panalpina.com/www/global/en/home/AboutPanalpina.html.

3 INTERNATIONAL TRADE CYCLE – RADIOACTIVE EXPORTS TO NAMIBIA

3.1 Buyer places order on seller

The purchase order is placed by Windhoek State Hospital, Namibia on AEC Amersham in Midrand, Gauteng, South Africa

3.2 Seller confirms order

AEC Amersham confirms the order and then places a back- to –back order with NTP Radioisotopes SOC Ltd in Pelindaba.

As the transaction is to be carried out under Incoterms ® 2010 Rules DDP Windhoek State Hospital, AEC Amersham appoints the forwarding agent, Bidvest Panalpina Logistics (BPL), who is responsible for the door to door movement of the goods.

3.3 Buyer arranges finance

Windhoek State Hospital arranges payment with Windhoek Hospital through a 30 days open account facility.

The Namibian Dollar (NAD) is linked to the South African Rand (ZAR) and this transaction is denominated in ZAR, there is thus no currency risk for either seller or buyer and no forward exchange contracts are necessary

3.4 Buyer informs forwarder of order

AEC Amersham informs BPL of the export collection that needs to take place and instructs BPL to deliver the shipment to Windhoek State Hospital, Namibia.

The shipment consists of 3 pieces as follows:

Package 1

UN 2915: Radioactive material Type A package, 1-131 Solid (Sodium Iodide): 370 MBq.

Dims: 33 X 33 32 cm

Package 2

UN 2915 Radioactive material, Type A package, I- 131 Solid (Sodium Iodide): 1036 MBq

Dims: 33 X 33 32 cm

Package 3

UN 2915 Radioactive material, Type A package, Mo-99 Solid (Sodium Molybdate): 80.2 GBq

Dims: 47 X 47 48 cm

3.5 Forwarder liaises with supplier for shipment arrangements

When will goods be ready?

AEC Amersham advises BPL that the goods will be ready for collection on the 9th December 2013.

As this product has an exceedingly short half-life, it must be shipped as soon as possible.

All three packages are Type A Packages

We need to determine from the Shipper's Dangerous Goods Declarations (See Appendix 1) and 10.3.11.4.2 of the IATA DGR whether the activities of each package meet the requirements for Type A packaging.

Referring to the IATA Dangerous Goods Regulations (DGR) section 10.3.2, their respective "A2" activities are as follows:

Package 1:

Activity =
$$80.2GBq = 80.2 \times 10^9 Bq$$

A2 Limit for Mo
$$99 = 0.6 \text{ TBq} = 0.6 \text{ X}10^{12} \text{ Bq}$$

As 80.2 X 10⁹ < 0.6 X 10¹², package meets Type A criteria

Package 2:

Activity = $370 \text{ MBq} = 370 \text{ X } 10^6 \text{ Bq}$

A2 Limit for 1-131 = $0.7 \text{ TBq} = 0.7 \text{ X } 10^{12} \text{ Bq}$

As 370 X 10⁶ < 0.7 X 10¹², package meets Type A criteria

Package 3

Activity = $1036 \text{ MBq} = 1036 \text{ X } 10^6 \text{ Bq}$

A2 Limit for $1-131 = 0.7 \text{ TBq} = 0.7 \text{ X } 10^{12} \text{ Bq}$

As 1036 X 10⁶ < 0.7 X 10¹², package meets Type A criteria

Must they be shipped CAO or can they be loaded on passenger aircraft?

In light of the characteristics of each package above and in terms of 10.3, 10.5.10, and 10.6.2.4 of the IATA DGR, this shipment may be shipped on both Passenger and Cargo Aircraft.

What flight should the cargo be booked on?

The cargo is booked on SA 078, estimated time of arrival (ETA) 10 December 2013.

3.6 Origin inland

3.6.1 Shipper's Documentation

The seller takes responsibility of issuing of the Dangerous Goods Declaration and the Material Safety Data Sheet (MSDS).

Although in accordance to section 8.1.4.1.1 of the IATA DGR, the freight forwarder may complete the Dangerous Goods Declaration; in terms of BPL policy this is not permitted.

MSDSs are prepared by the manufacturer of the material.

AEC Amersham prepares a Dangerous Goods Declarations for each of the three parcels (APPENDIX 1).

3.6.2 Commercial Documentation

The commercial documentation required is the commercial invoice. (Appendix 4)

3.6.3 Packing

Packaging must be in accordance with IATA DGR section 10.5.10

3.6.4 Marking and labelling

Marking and labelling must be in accordance with IATA DGR section 10.7.1.3 and 10.7.2

(See Appendix 2 for marking and labelling.)

3.7 Inland transport requirements in South Africa

Placards to be affixed to the trucks when transporting these goods in South Africa and Namibia.

These placards to remain on each road vehicle until load has been removed completely and contaminated/ spills cleaned thoroughly.

3.8 Inland transport requirements in South Africa – Cargo Security

Parallel to meeting the requirements of the transport of Dangerous Goods Regulations, there are local and international regulations pertaining to the security of airfreight cargo in terms of Annexures 18 & 19 of the International Civil Aviation Organisation (ICAO) regulations. This makes it mandatory for all countries to certify security of airfreight cargo from time it leaves the shipper's premises until it is loaded on board the aircraft. The consignment must move as "known cargo" from the shipper until loaded on board aircraft. Known cargo is a consignment which has been checked and certified free from undeclared explosive or incendiary devices. In South Africa these matters are dealt with under Part 108 of the South African Civil Aviation Authority (SACAA) regulations, in terms of which:

- Exporters' premises (NTP Radioisotopes Pelindaba), must be certified as secure
- The transporter and vehicles carrying the goods from Pelindaba to the forwarder must be certified as secure,
- BPL warehouse must be certified as secure.
- The transporter and vehicles carrying the goods from BPL warehouse to the airline must be certified as secure,

On receipt of the cargo by the airline the AWB is stamped to confirm that the cargo is "known" because the above have been complied with (see Appendix 4).

3.9 Seller arrange insurance

As this shipment is sold under Incoterms ® 2010 Rule -DDP Windhoek State Hospital in Windhoek, maximum risks are placed on AEC Amersham (seller) and minimum obligations on Windhoek Hospital (buyer).

The following insurance options would have been considered by AEC Amersham:

3.9.1 Facultative

This is a "once –off" insurance that normally covers only a particular shipment. Under this policy the risk is negotiated separately and premium agreed upon.

3.9.2 Block Policy

Block insurance is used when there will be large numbers of consignments, each of relatively small value, usually sent by post. On this insurance the premium for the whole period (normally one year) will be paid up front based on an estimate of the number of shipments, their frequency value and countries of origin and destination.

3.9.3 "Marine" Open Policy

Agreement between a merchant (importer, exporter or freight forwarder on behalf of the client) and the insurance company to insure all goods in transit falling within the agreement for an indefinite period, until the agreement is cancelled by their party.

As AEC Amersham is a multinational company trading globally in radioactive materials, the cargo will be insured on a door to door basis under AEC Amersham's Global Open Marine Policy. As the cargo is very valuable, it will be insured on the following terms:

- Institute Cargo Clauses (AIR) (excluding sendings by Post)
- Including the following additional clauses:
- Institute War Clauses (Air Cargo) (excluding sendings by Post)

- Institute Strikes Clauses (Air Cargo) Institute Radioactive Contamination, Chemical,
 Biological, Bio-Chemical and Electromagnetic Weapons Exclusion Clause
- Institute Replacement Clause

3.9.4 Insurance Declaration Process

The value for insurance in an open marine policy is the delivered cost of the goods. It is only possible to determine the delivered cost of the goods once they have in fact being delivered. Insurance declarations can therefore only be made after the goods have been delivered. In terms of the principle of "outmost good faith" it is very important that every shipment is declared irrespective of whether it arrived intact or lost, damaged or discrepant.

In the event of goods being delivered lost, damaged or discrepant, in terms of Incoterms ® 2010 Rules DDP, the seller is at risk and therefore bears the obligation to make good the loss to the buyer and claim from the insurance.

In order to support such a claim the seller would need to have the goods surveyed at the delivery point.

3.10 Forwarder arranges export clearance.

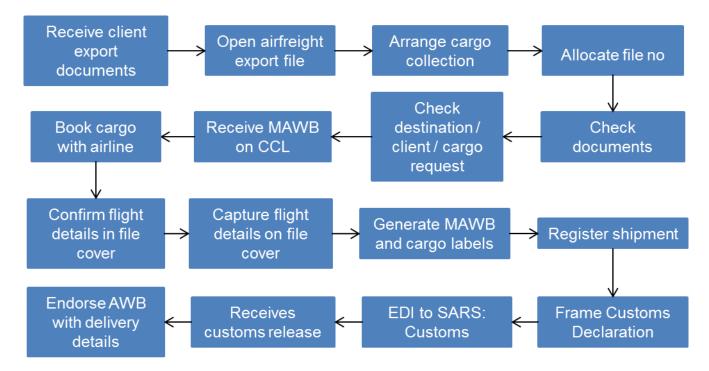
BPL, as AEC Amersham's forwarder, arranges for export clearance of the dangerous goods in question.

3.10.1 Export Clearance Documentation Requirements

The shipper documents required to carry out the South African export procedures are as follows:

- Export Shipping Instructions
- Commercial Invoice

3.10.2 Export clearance process



3.10.3 Airwaybill

As the freight forwarder, it is the responsibility of BPL to issue a Master Airway bill (MAWB) for this shipment.

The reason why the MAWB instead of a HAWB is that the dangerous goods may not be consolidated with other cargo in terms of BPL policy, although this is not specifically mentioned in the State or Operator Variations for South Africa/ South African Airways in Section 2 of the IATA Dangerous Goods Regulations (IATA DGR).

The MAWB needs to be completed in accordance with the IATA "Air Waybill Handbook".

In accordance with IATA DGR 10.8.8.1 the MAWB Handling Information section must contain the following specific details regarding the Dangerous Goods:

DANGEROUS GOODS AS PER ATTACHED SHIPPER DECLARATION

See Appendix 3 for further handling and notifications instructions inserted in terms of AEC Amersham's requirements.

3.11 Collection of Cargo and Delivery to the Airline

In terms of Part 108 regulations, if the shipment does not go directly to the airline, it needs to be stored in dedicated (Known Cargo) Dangerous Goods section of the BPL warehouse.

The consignment will also be checked against the 2014 IATA DGR DANGEROUS GOODS CHECKLIST FOR A RADIOACTIVE SHIPMENT at the BPL warehouse.

In the event that any discrepancy is found the consignment must be returned to the shipper.

In this context it should be noted that, in the Dangerous Goods Declaration for the package containing I- 131 Solid 1036MBq, the Package Instruction and Transport Index have been completed by hand. This does not constitute an unsigned alteration.

3.12 Airline Acceptance

As soon as the shipment is Customs released, the cargo is sent to the airline with the following documentation:

- Dangerous Goods Checklist as completed by BPL, if applicable,
- Customs released SAD500,
- Master Airwaybill (Appendix 3),
- Dangerous Goods Declarations (Appendix 1),
- Materials Safety Data Sheet,
- Commercial Invoices (Appendix 4).

These documents will accompany the consignment to Namibia, to be collated with the documents presented for clearance and release.

3.12.1 Dangerous Goods checklist – completion by airline

The airline will also check the cargo against the 2014 IATA DGR DANGEROUS GOODS CHECKLIST FOR A RADIOACTIVE SHIPMENT before accepting the cargo.

3.13 Forwarder arranges import clearance

The import clearance will be done in Namibia on behalf of BPL by their Namibian agent, Woker Freight Services (WFS).

Once the cargo is delivered to the airline at OR Tambo International Airport, BPL will pre alert WFS by emailing the following documents to them:

- Master Airway Bill,
- Dangerous Goods Declarations,
- Materials Safety Data Sheet,
- Commercial Invoices.

On receipt of these documents, WFS will initiate an electronic clearance of the goods. When customs cleared and released, WFS will present a copy AWB and customs release to the airline on arrival of aircraft and collect the goods.

3.14 Final Delivery

The truck that carries the dangerous goods to final destination will be placarded according to Namibian transport regulations. The goods must be accompanied by the MSDS in case the vehicle is involved in an incident.

WFS must obtain proof of delivery (POD) from Windhoek hospital and email this to BPL

3.15 Payment of Disbursements and Invoicing of Client

3.15.1 Payment of Airfreight:

As an IATA accredited agent BPL uses the IATA Cargo Accounts Settlement System

(CASS).

According to IATA, "CASS is designed to simplify the billing and settling of accounts between

airlines and freight forwarders. It operates through CASS link, an advanced global web-

enabled e-billing solution."

Source: CASS.

Under CASS the airfreight and other airline charges (Security, Fuel Surcharge, Dangerous

Goods Fee) will be debited to BPL's account with CASS for settlement at the end of the

settlement period.

Any duties and similar statutory charges payable in Namibia will be debited to WFS'

deferment account with Customs to be settled by them at the end of that month.

These charges, as well as all WFS delivery and clearing charges, will be debited back to

BPL.

BPL will collate all charges, plus the local South African cartage, storage and its revenue

charges (documentation, agency and finance fee) and invoice AEC Amersham accordingly.

3.16 Seller presents documents for payment

The process of payment will only take place on a 30 days open account bases after the cargo

has been delivered and AEC Amersham has received the POD.

Once the price to be paid becomes due, Windhoek State Hospital will arrange settlement to AEC Amersham through their bankers in accordance with the Namibian Foreign Exchange Regulations.

3.17 Completion of the International Trade Cycle

Provided there are no claims, this completes the International Trade Cycle for this shipment.

4 INTERNATIONAL TRADE CYCLE – PROJECT CARGO IMPORTS FROM AUSTRIA

4.1 Introduction

"It's prudent to consider transportation issues early and often in any project cargo move to avoid unnecessary cost and risk and as the number of raw material sources also grows globally, so does the need to incorporate the most efficient transportation methods throughout project cargo planning".

C.H. Robinson Project Logistics

Kusile is a coal-fired power station in Mpumalanga Province, South Africa. The station, which is being constructed under contracts awarded by South Africa's power utility, Eskom, will consist of six units, each rated at approximately 800 MW installed capacity, giving a total of 4800 MW. When finished it will be one of the largest coal-fired power stations in the world.

Siemens Energy Sector Department South Africa (Siemens) has been appointed to supply the power transmission equipment for Kusile Power Station (Kusile).

What follows is a narrative description of the management of the door to door movement of one of the shipments supplied by Siemens to Kusile.

4.2 Buyer places order on seller

In accordance with the Eskom Project Plan, Eskom draws down consignments of equipment at planned stages by placing an order with Siemens Energy Sector South Africa.

Siemens Energy Sector South Africa (Siemens RSA) in turn places an equivalent order with their supplier Siemens, Elingasse, Weiz in Austria. All terms and conditions on the order are in accordance with the original Eskom/ Siemens contract.

Eskom has explicit Standard Operating Procedures regarding the logistics of Super Abnormal and Abnormal cargo movement as well as South African Customs clearance procedures.

These must be complied with by BPL as freight forwarder and Customs broker appointed to this project.

4.3 Seller confirms order

Once Siemens Austria has made the relevant production arrangements, they will provide Siemens RSA with confirmation This will in turn be passed to Eskom.

In the case of orders of this magnitude, this process will take place up to 18 months prior to shipment.

4.4 Buyer arranges finance and covers exchange risk

The project is funded mainly by the Export Import Bank of the United States (Ex-Im Bank) and similar institutions. In order to provide suppliers such as Siemens with the cash flows necessary to fund their operations, Eskom draws down finance from the funding institutions as agreed milestones in the project are reached.

Eskom arranges payment to Siemens Austria 14 days from invoice date on an open account basis.

Due to the fact that the South African Rand (ZAR) is expected to weaken against major world currencies in the period between the order being placed and the payment due date, Eskom manages this risk by entering into a **forward exchange contract (FEC)** with their bankers.

Forward exchange contracts are used to secure a rate of exchange to purchase (or sell) foreign currency today for settlement at some time in future.

Since, when placing the order, it cannot be predicted with any accuracy what the actual due date for payment will be, Eskom will need to enter into an FEC with optional expiry dates.

4.5 Buyer informs forwarder of order

Siemens Energy Sector informs Bidvest Panalpina Logistics (BPL) of the incoming order for which BPL will need to execute the door to door movement of the cargo on behalf of both Siemens (as seller), up to the point where the goods have been delivered to the ship's side in terms of Siemens Incoterms ® 2010 Rules FAS Rotterdam obligations and Eskom (as buyer) from that point on.

This shipment consists of:

1 Super Abnormal, unpacked transformer: 346000kgs, 246 m3

2 x Abnormal crates totalling 11050 kgs, 114.5 m3

25 x cases machinery (break-bulk), 49220 kgs, 298.824 m3 Check

1 case with primer IMO CLASS UN No: 3082, 24 kgs, 0.1m3

The shipment will originate from Siemens, Elingasse, Weiz in Austria and delivery is required to the Kusile site. See Appendix 5 for a copy of the packing list.

Transport will take place in the following stages:

1. Road transport from Weiz to the inland waterway load port – Linz, Austria

- Inland waterway transport Austrian Danube river Linz to Passau, German Danube river – Passau to Kelheim, Main Danube channel – Kelheim to Bamberg, Main River – Bamberg to Frankfurt, Rhein River – Frankfurt to Rotterdam*)
- 3. Deep sea transport Antwerp to Richards Bay
- 4. Inland road transport Richards Bay to Kusile site
- * Note: In this instance, whilst the cargo was en route on the inland waterway system,
 Rotterdam was closed due to wind: **contingency plans** needed to be put in place to
 divert the cargo and carrying vessel to Antwerp.

4.6 Incoterms ® 2010 Rules

The shipment was to have been supplied under Incoterms ® 2010 Rules FAS Rotterdam but, in light of the diversion above, they were in fact supplied on Incoterms ® 2010 Rules FAS Antwerp.

Had this shipment been effected under a Documentary Credit it would have to have been amended had Rotterdam been specified as the load port instead of "any European Port".

4.7 Forwarder liaises with supplier for logistics and compliance arrangements

In advance of shipment taking place the following were finalised:

4.8 Transport

Super Abnormal Load Inland Transport

The dimensions ((LWH) 1200 X 410 X 500 cms) and mass (346000 kg) of the super abnormal piece make it abnormally high, wide and heavy.

This implies that all routes along which it will travel needed to have been surveyed by qualified consulting engineers in country of origin and destination to ascertain the following:

- Strength of roads and (particularly) bridges over which the load needs to be transported;
- Necessity of lifting power and/ or telephone lines;
- Where necessary, the strengthening of bridges or construction of diversions (especially in South Africa).

In order for this to be achieved, Siemens Austria provides the engineering drawing of the transformer shown in Appendix 6 to all affected parties.

Note that in South Africa, due to the almost continuous construction of power stations in Mpumalanga Province, there are two routes between Richards Bay and the power station sites in Mpumalanga which has already been extensively surveyed. They are referred to as the "A" and the "B" route respectively.

Contingency planning: Due to considerations of available facilities in the South African ports as well as weather, abnormal load arrangements and permits must initially be made to cover vessel discharge at <u>either</u> Richards Bay or Durban .

4.9 Customs – Staged Consignments Ruling

As components of a power station, all the elements included in this shipment may, by arrangement with the South African Customs Authorities (SARS Customs) be declared under the Harmonised System Tariff Heading applicable to a power station (TH8406.81) as a whole and not the Tariff Headings applicable to each individual component thereof. This arrangement is known as a Staged Consignments Ruling. For goods imported into South Africa under TH8406.81, there is no duty payable.

Such a Staged Consignments Ruling was obtained from SARS Customs by Eskom.

In order for SARS Customs to manage the Staged Consignments Ruling, each time a shipment is cleared under it, the reference number of the Staged Consignments Ruling must be quoted on all Customs Declarations.

4.9.1 Certificate of Origin

In the normal course of events, in order to take advantage of the preferential duty structure which applies to goods imported to South Africa from Europe, it would be necessary for Siemens to provide the special European Certificate of Origin, the EUR 1, for this shipment. Since the shipment will be cleared under a duty free Tariff Heading in terms of this Staged Consignments Ruling however, no EUR 1 is required.

4.10 Multimodal Logistics Arrangements

4.10.1 Preparation of the transformer: Shock sensors

A shock sensor is fitted on the transformer. A shock sensor works by sending out an alarm or signal when the unit is bumped, moved, tilted, jiggled, dropped, etc.

4.10.2 Inspection arrangements: Transformer

In terms of Eskom's Standard Operating Procedures inspections must take place at all phases of the transformer's transportation from source to Kusile site from before removal from the test bay (at Siemens works) to after placement in bay at Kusile site (including before and after any other intermediate handling (if any)).

4.10.3 Loading at supplier's premises

Super Abnormal and Abnormals

Siemens Austria has the required cranage required to load the road vehicles for transport of the transformer and the two abnormal crates to the barge loading port.

Break-bulk Cargo (Including Dangerous Goods)

Arrangements are made for this to be loaded onto road vehicles using Siemens Austria gantry cranes, mobile jib cranes and forklifts as applicable.

Loading of the vehicles is planned to ensure even weight distribution.

4.10.4 Movement from EXW to barge port

Movement of cargo by road in Europe is carried out under the provisions of the **Convention** on the Contract for the International Carriage of Goods by Road (the CMR Convention), to which Austria is a signatory.

In addition, all provisions contained in the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) must be adhered to regarding all for packing, marking, labelling, handling, loading and transportation of the Dangerous Goods package.

Assuming that all surveys of the route have been completed, the results of these surveys will be used to apply for the required Permits to Transport the Super Abnormal and Abnormal loads and to make the necessary arrangements to provide escorts for the vehicles carrying these loads.

4.10.5 Transfer of cargo from road vehicles to inland waterway barge at Linz

For the Super Abnormal and Abnormal loads, this is accomplished by special, heavy lift floating cranes arranged by BPL.

The balance of the cargo will be loaded by shoreside cranes.

4.10.6 Transport of cargo by inland waterway from Linz to Rotterdam- Antwerp

When planning this movement, the provisions of the Code Européen des Voies de la

Navigation Intérieure (CEVNI: European Code for Navigation on Inland Waterways)

must be adhered to.

The Dangerous Goods package must be loaded and stowed in accordance with the provisions of the European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN).

4.10.7 Transfer of Cargo to Deep Sea Vessel in Rotterdam/ Antwerp

The special nature of the Super Abnormal and Abnormal loads means that arrangements were made to charter a specially equipped, heavy lift vessel, "BBC Rushmore" for the carriage of this consignment.

Relevant specifications for this vessel are:

- Deadweight (summer) 9,282 mt
- Cargo hold capacity 12,391 cbm
- Cranes 2 NMF cranes situated portside:
 - o 350 mt capacity each /
 - 700 mt capacity combined

Source: http://www.bbc-chartering.com/fileadmin/ftp/fleet/BBC_Everest_type.pdf. Accessed 20 December 2013

Loading and discharge of the Super Abnormal and Abnormal loads on will be carried out using the ship's derricks (cranes).

The transfer of the balance of the cargo will be carried out by shoreside cranes.

Contingency planning needs to be in place to allow for the fact that barge and vessel arrival may not be simultaneous, in which case the shipment will be staged on the quay before being transferred to the vessel. If this is not the case then transfer is directly carried out from barge to vessel using ship's gear.

4.10.8 Transfer of Cargo from Deepsea Vessel to Road Vehicles in Richards Bay

Bulk discharge vessels are handled in Richards Bay at Berths 609, 701 and 702.

Transfer will take place as for the loading process using ship's derricks and shoreside cranes.

A Pre-Planning Meeting that is held by the Port Authorities at the harbour 24hours before the ship docks.

The meeting is attended by a Manager from Transnet Port Terminals (TPT) and a number of representatives of all affected parties to ensure all are in agreement with the arrival, offloading and dispatch procedures and sequence.

4.10.9 Transfer of Cargo from Richards Bay to Kusile site

Super Abnormal and Abnormal Load Inland Transport

The movement of abnormal loads in South Africa is carried out in accordance with the provisions of Guidelines for Granting of Exemption Permits for the Conveyance of Abnormal Loads and for Other Events on Public Roads (TRH 11, published by the Department of Transport)

Contingency transport planning needs to be effected in terms of vehicle availability: there are a number of capital projects taking place in South Africa and only a finite vehicles available for loads of this nature: if necessary, the load may need to be staged on the pier at Richards Bay. In this case concrete barricades must be arranged to protect the load.

Dangerous Goods Transport

The provisions for the transport of the Dangerous Goods package in this consignment from Richards Bay to Kusile site are exactly the same as those for the transport of the radioactives from Pelindaba to OR Tambo International Airport in the previous shipment, except that the truck placarding will be in accordance with provisions of Class 9 and not Class 7.

4.10.10 Discharge arrangements at site

When offloading the transformer at Kusile site, the offloading process is as follows:

From plinth to hydraulic machinery that lowers the trailer onto the rail system.

The trailer moves out, leaving the transformer on the rail system.

Once the transformer is secure and safe, it slowly moves on the rail system from the plinth to the final resting stage.

4.10.11 Project status reports

At each stage of the movement of the cargo BPL will be keeping Siemens and Eskom apprised of all developments.

In the unlikely event of problems, the 24/7 availability of senior representatives of all parties means that these are speedily and satisfactorily resolved.

4.11 Clearance and release of shipment

Austria

For this shipment the following documentation must be issued by Siemens Austria:

- Export Shipping Instructions
- Commercial Invoice (Appendix 7)
- Packing List (most important) Appendix 5
- Engineering Drawings of transformer (Appendix 6)
- For the Dangerous Goods:
 - Dangerous Goods Declaration in accordance with the provisions of the International Maritime Organisation (IMO) International Maritime Dangerous Goods (IMDG) Code.
 - Materials Safety Data Sheet (MSDS previously discussed under the radioactive shipment)

Once released by Austrian Customs, the release documents will then be presented for port clearance and payment of port dues in Linz and Rotterdam/ Antwerp.

Once the cargo has been released by these authorities, movement of the shipment from Linz to Rotterdam/ Antwerp may commence.

Once the cargo has been loaded on the "BBC Rushmore" the Bill of Lading (Appendix 8) will be issued to Siemens Ltd by the vessel's agent.

(Note: in this case the Bill of Lading carried the following endorsements:

PACKAGE NR 669631/1 LOADED FROM OPEN STORAGE, WET BEFORE SHIPMENT PACKAGE NR 669631/1 SHOWING TRACES OF PREVIOUS HANDLING

Had this shipment been shipped under a Documentary Credit, this Bill of Lading would not have been considered "clean" and would have caused problems for the seller in obtaining payment.)

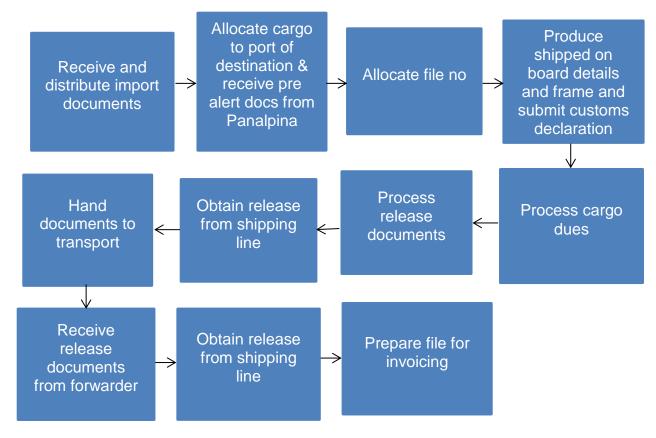
South Africa

In order to clear the consignment prior to arrival, Panalpina will email the following copy documents to BPL:

- Commercial Invoices
- Packing List
- For the Dangerous Goods:
 - Dangerous Goods Declaration
 - Materials Safety Data Sheet

BPL will obtain from Eskom the Import Clearing and Delivery Instructions and proceed as follows:

4.12 Import Surface Freight Clearance and release procedure



4.13 Insurance arrangements

In terms of their respective assumption of risk under Incoterms ® 2010 Rules FAS Rotterdam obligations, Siemens and Eskom will ensure the consignment under their respective Global Open Marine Insurance Policies:

- Institute Cargo Clauses (A). Note: this includes losses incurred as a result of any acts of or declaration of General Average.
- Institute War Clauses (Cargo)
- Institute Strikes Clauses (Cargo)
- Institute Replacement Clause

4.14 Payment of Disbursements and Invoicing of Client

4.14.1 Payment of Overseas charges, including Ocean freight

Charges up to and including arrival of the consignment in Rotterdam/ Antwerp are for the account of Siemens Austria.

From that point on, all other overseas charges (including freight from Antwerp to Richards Bay), will be debited to BPL by Panalpina.

4.14.2 Payment of South African charges

The VAT payable on the imported goods will be debited to BPL's deferment account by SARS Customs and will be due for settlement at month end.

The amount of cargo dues and landing charges will be debited to BPL's account with TPT and will also be payable at month end.

Local transport, escort and other disbursements of this nature will be paid to the providers by BPL.

All disbursements will be collated, BPL agreed fees will be added and the whole invoiced to Siemens for payment.

4.15 Seller presents documents for payment

The process of payment will take place once the cargo has been delivered and Siemens have received the POD.

This will be done on a 14 days open account bases.

Once the price to be paid becomes due, Eskom through their bankers will draw down their forward exchange contract and effect payment to Siemens in accordance with the South African Foreign Exchange Regulations.

Photographs illustrating the door to door movement of this shipment are shown in Appendix 9.

4.16 Completion of the International Trade Cycle

Provided there are no claims, this completes the International Trade Cycle for this shipment.

5 CONCLUSION

The way in which the door to door movement of the two shipments described has been handled is an eloquent demonstration of the teamwork which, when properly planned, organised, managed and controlled, makes for an extremely successful application of the systems, policies and procedures used in international supply chain operations.

The teamwork involved makes it disingenuous in the extreme for a report like this to be compiled in the first person.

APPENDICES

APPENDIX 1 Dangerous Goods Declarations

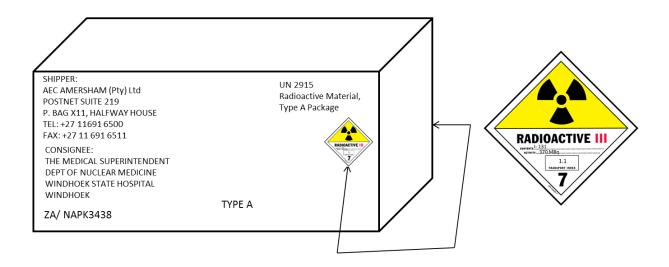
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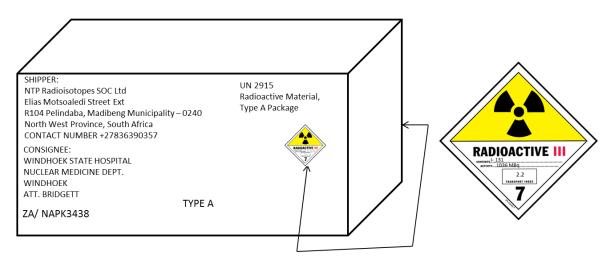
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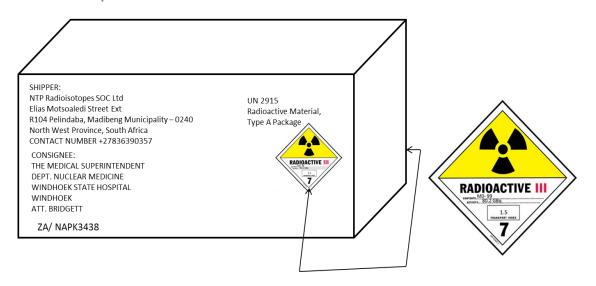
APPENDIX 2 Marking and labelling- Radioactives



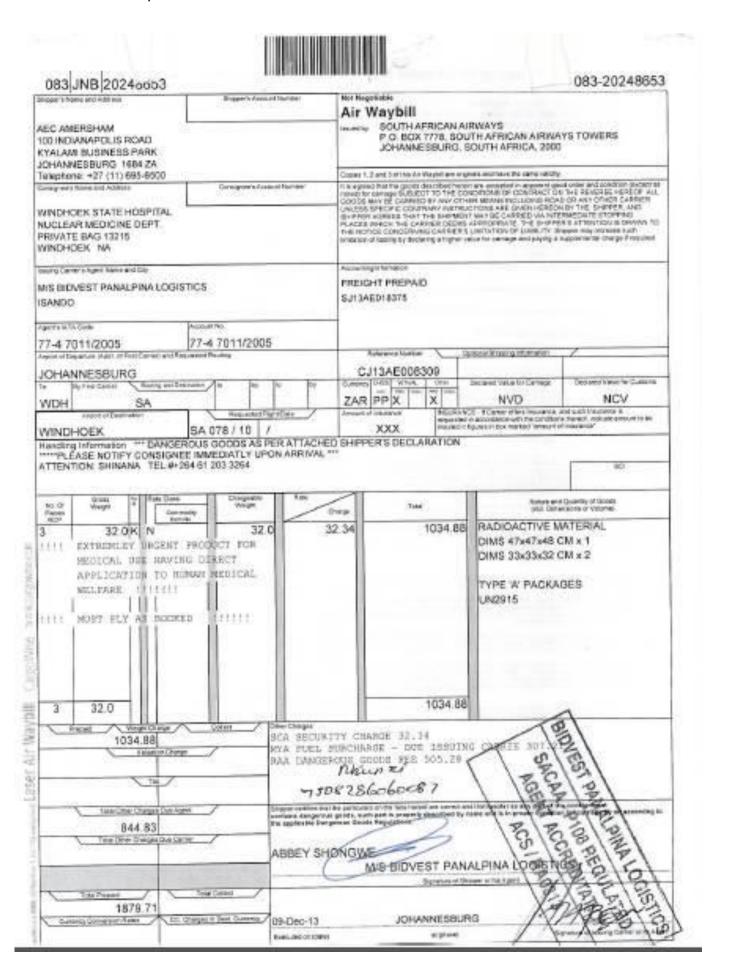
Package 1 I-131:370MBq



Package 2 I-131:1036MBq



Package 3 Mo-99:80.2 GBq



APPENDIX 4 Commercial Invoices Radioactives

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Remarks

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Tel:00264-61-203-3264

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PACKING LIST

DATE: 25/10/2012

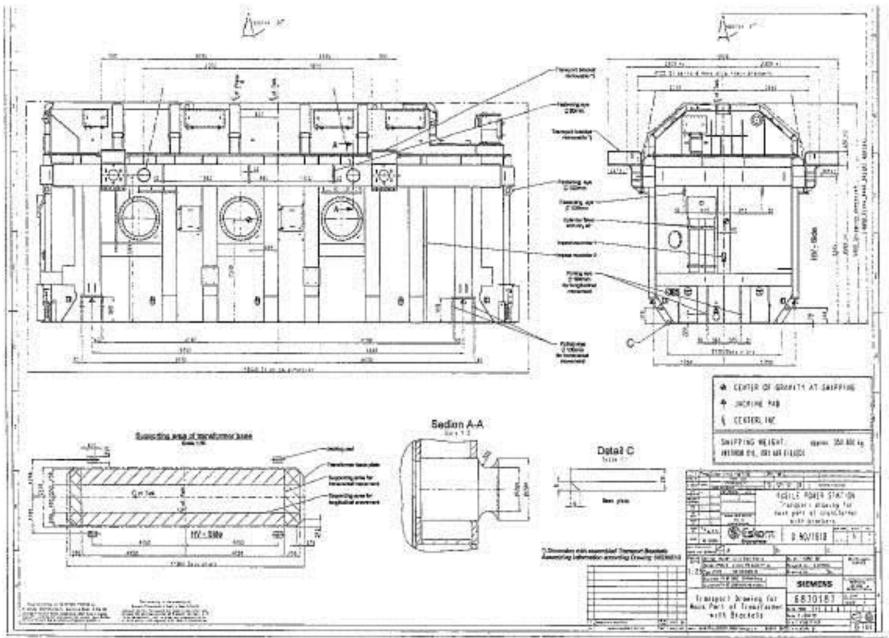
SUBJECT: 1 pc 910 MVA Transformer 1748 795

PLANT NO: Kusile Power Station

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APPENDIX 6 Engineering Drawing of the Transformer





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APPENDIX 9 Photographic narrative of the multimodal movement of the project shipment.

1. Loading in Antwerp



 General view of the cases delivered by road vehicles prior to arrival of vessel and placed alongside the wharfshed



 Data recorder fitted to the transformer; checked after barge drew alongside-no exceptions recorded



 Ship's tandem lifting gear prepared for the loading of the transformer



 Stevedores attaching lifting grommets to lifting points on the transformer



Transformer prepared for lifting



 Lift commencing with weight of transformer being taken by ship's cranes.



7. Transformer clear of the deck of the barge



8. The lift underway



9. Transformer crossing the coaming of the vessel



10. Transformer positioned above vessel tanktop; plyboard sheets / dunnage positioned under base of unit



 Transformer safely landed onto the tanktop



12. Sea fastening completed using 4 x stoppers as shown, attached at the jacking points on transformer



13. General view of the sea fastening along the port side of the transformer; starboard side was similarly secured with stoppers and cargo chains for uplift



14. First of the breakbulk cases being positioned to Port of transformer in the lower hold



15. Loading of cases continuing; where practically possible, cases were loaded "pre stacked" as shown here



16. Final 2 x cases being lowered into stow



17. Completed stow of cases adjacent to transformer. Lashing of stow underway



18. Where necessary, gaps between cases are choked off



19. Wedges driven into the gaps between ship's side and cases



20. General view of the securing of the stow of cases

2. Discharging in Richards Bay



21. Transformer after being released from stow awaiting discharge in Richards Bay



22. Transformer emerging from vessel's hold



23. Transformer being lowered onto abnormal road transporter



24. Completion of transfer onto abnormal road transporter



25. Check of data recorder fitted to the transformer after discharge: all in order



26. Tallying of breakbulk cases after discharge



27. Departure of abnormal road transporter loaded with transformer from Richards Bay under flotilla of escourts

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