THE SENATE OF CANADA — LE SÉNAT DU CANADA

STANDING SENATE COMMITTEE ON ENERGY AND NATURAL RESOURCES — COMITÉ SÉNATORIAL PERMANENT DE L'ÉNERGIE ET DES RESSOURCES NATURELLES

Information on Bill C-44

An Act respecting the Hibernia Development Project and to amend certain Acts in relation thereto

Dean N. Clay

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The Hibernia Project

The Hibernia oil field lies 315 kilometres east-southeast of St. John's, Newfoundland, on the continental shelf in the northeast corner of the Grand Banks. Water depth in the area is about 80 metres. The field is estimated by Mobil Oil to contain at least 525 million barrels of recoverable oil, and by COGLA (Canadian Oil and Gas Lands Administration) to contain 625-650 million barrels of recoverable oil.

The first exploration permit in this area of the East Coast offshore was issued to Mobil Oil in 1965 and drilling began the following year. Between 1972 and 1976, six exploration wells were drilled by the original Hibernia sponsors. In 1978, Special Renewal Permits were issued to Mobil, Gulf and Petro-Canada. The following year, Chevron and Columbia Gas joined the Hibernia Group. The Hibernia discovery well was drilled in 1979, and nine delineation and appraisal wells were drilled in 1980-84 at an expenditure of $465 million.

The Atlantic Accord was signed in February 1985 and Mobil Oil, as operator for the Hibernia Group, submitted Socio-economic and Environmental Impact Statements in May 1985 and a Development Plan that September. The Canada-Newfoundland Offshore Petroleum Board (CNOPB) gave conditional approval to the Development Plan in June 1986. Since then, the project sponsors have submitted three fiscal proposals and the terms of a final offer were agreed upon on 9 July 1988, following which the sponsors - Chevron Canada Resources, Columbia Gas Development of Canada Ltd., Gulf Canada Resources Limited, Mobil Oil Canada and Petro-Canada Inc. - and the Governments of Canada and Newfoundland and Labrador signed the *Statement of Principles* on 18 July 1988.

Columbia Gas subsequently sold its interest in Hibernia (just over 5%) to Chevron. The interests held by the four remaining project owners are:

- Mobil Oil Canada: 28.125%
- Petro-Canada Inc.: 25.0%
- Gulf Canada Resources Limited: 25.0%
- Chevron Canada Resources: 21.875%

The consortium has formed the Hibernia Management and Development Company to construct, manage and operate the project.

CNOPB declared Hibernia a Commercial Discovery in January 1990 and, on 21 March 1990, issued a 25-year production licence to the Hibernia consortium. On 30 March 1990, the consortium submitted a Development Plan Update to which the CNOPB gave conditional approval on 15 August. The binding agreement for Hibernia was signed on 14 September 1990.

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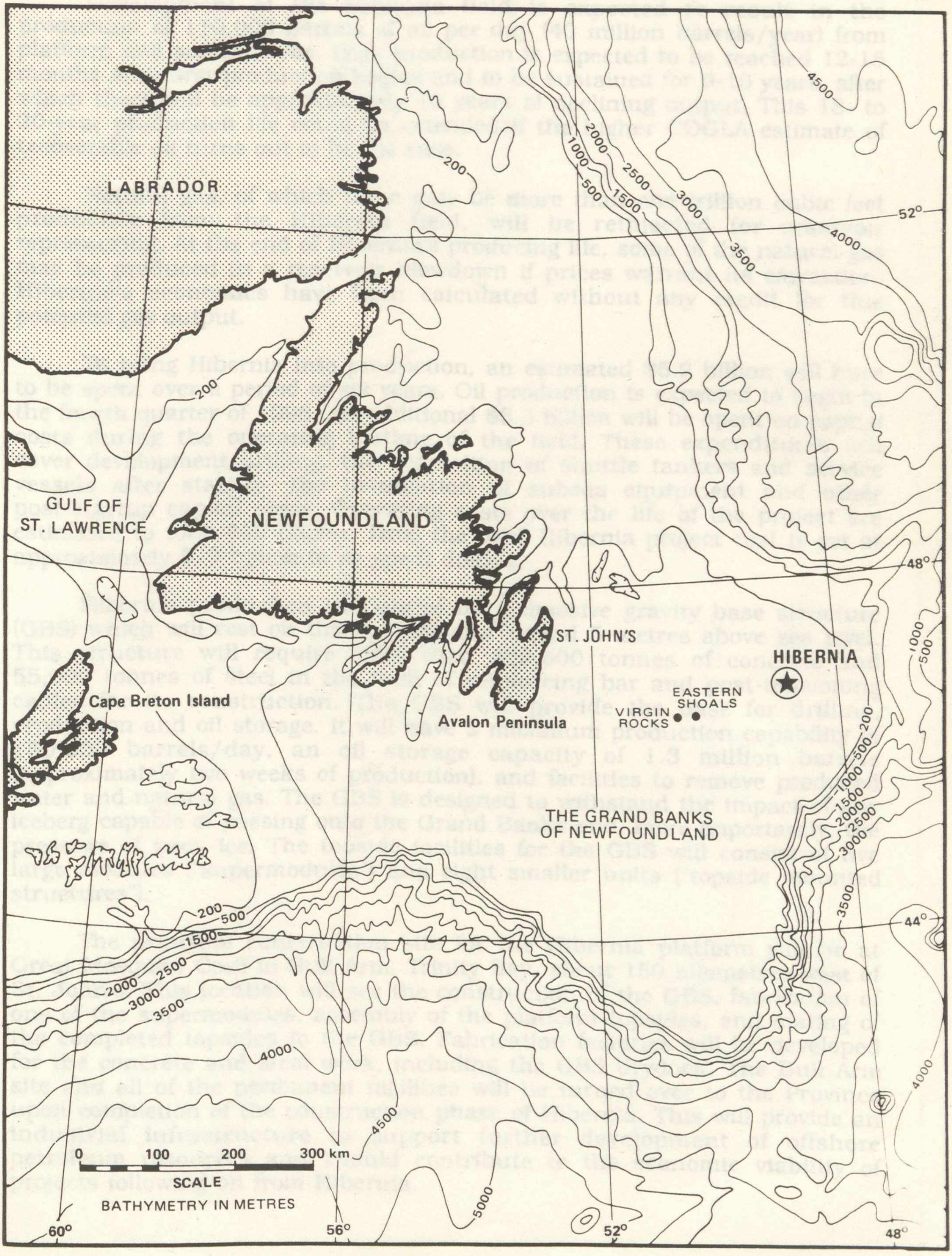
LOCATION OF HIBERNIA FIELD



Development of the Hibernia field is expected to result in the production of 110,000 barrels of oil per day (40 million barrels/year) from platform and subsea wells. Peak production is expected to be reached 12-15 months after first production begins and to be sustained for 9-10 years, after which there will be approximately 10 years of declining output. This 18- to 20-year production life could be extended if the higher COGLA estimate of recoverable oil turns out to be the case.

Natural gas, of which there may be more than one trillion cubic feet producible from the Hibernia field, will be reinjected for reservoir repressuring. At the end of Hibernia's producing life, some of the natural gas may be produced in a reservoir blowdown if prices warrant its extraction. Hibernia's economics have been calculated without any credit for this potential gas output.

To bring Hibernia into production, an estimated $5.2 billion will have to be spent over a period of six years. Oil production is expected to begin in the fourth quarter of 1996. An additional $3.3 billion will be spent on capital costs during the operating lifetime of the field. These expenditures will cover development drilling, the acquisition of shuttle tankers and service vessels after startup, the installation of subsea equipment and other post-startup capital costs. Operating costs over the life of the project are estimated to total $10 billion. Thus the total Hibernia project cost is set at approximately $19 billion in as-spent dollars.

Hibernia production will centre on a massive gravity base structure (GBS) which will rest on the seafloor and extend 5 metres above sea level. This structure will require more than 430,000 tonnes of concrete and 55,000 tonnes of steel in the form of reinforcing bar and post-tensioning cables for its construction. The GBS will provide the base for drilling, production and oil storage. It will have a maximum production capability of 150,000 barrels/day, an oil storage capacity of 1.3 million barrels (approximately two weeks of production), and facilities to remove produced water and natural gas. The GBS is designed to withstand the impact of any iceberg capable of passing onto the Grand Banks and, more importantly, the pressure of pack ice. The topside facilities for the GBS will consist of five large modules ("supermodules") and eight smaller units ("topside mounted structures").

The principal construction site for the Hibernia platform will be at Great Mosquito Cove in Bull Arm, Trinity Bay, about 150 kilometres west of St. John's. This location will see the construction of the GBS, fabrication of one of the supermodules, assembly of the platform topsides, and mating of the completed topsides to the GBS. Fabrication facilities will be developed for the concrete and steel work, including the GBS drydock. The Bull Arm site and all of the permanent facilities will be turned over to the Province upon completion of the construction phase of Hibernia. This will provide an industrial infrastructure to support further development of offshore petroleum resources and should contribute to the economic viability of projects following on from Hibernia.

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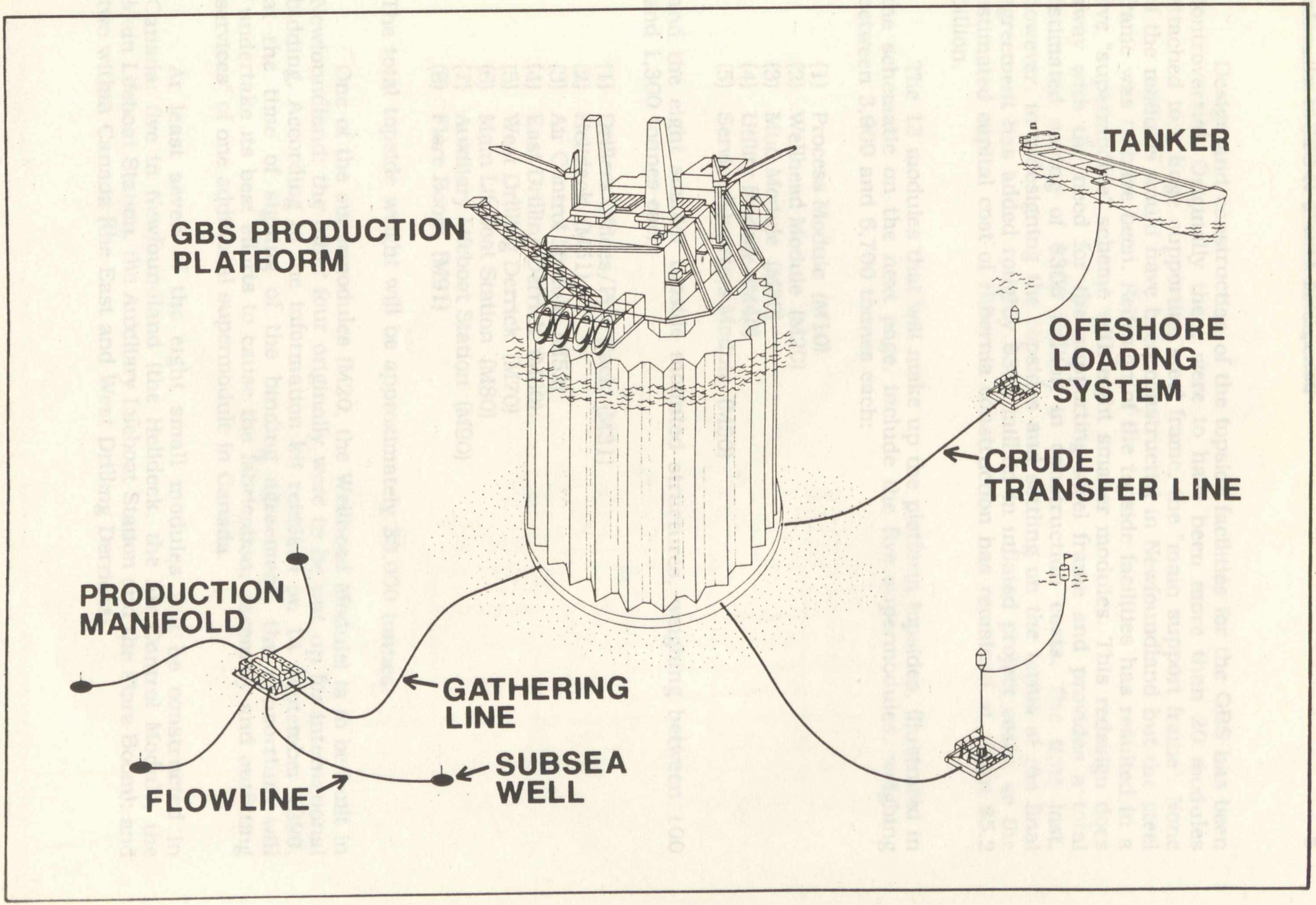
PRODUCTION SYSTEM COMPONENTS



Design and construction of the topside facilities for the GBS has been controversial. Originally there were to have been more than 20 modules attached to a huge supporting steel frame, the "main support frame". None of the modules would have been constructed in Newfoundland but the steel frame was to have been. Redesign of the topside facilities has resulted in a five "supermodule" scheme with eight smaller modules. This redesign does away with the need for the supporting steel frame and provides a total estimated saving of $300 million in construction costs. The time lost, however, in redesigning the topsides and settling on the terms of the final agreement has added roughly $300 million in inflated project costs, so the estimated capital cost of Hibernia construction has remained at about $5.2 billion.

The 13 modules that will make up the platform topsides, illustrated in the schematic on the next page, include the five supermodules, weighing between 3,900 and 6,700 tonnes each:

(1) Process Module (M10)
(2) Wellhead Module (M20)
(3) Mud Module (M30)
(4) Utility Module (M40)
(5) Service/Quarters Module (M50)

and the eight smaller topside mounted structures, weighing between 100 and 1,300 tonnes each:

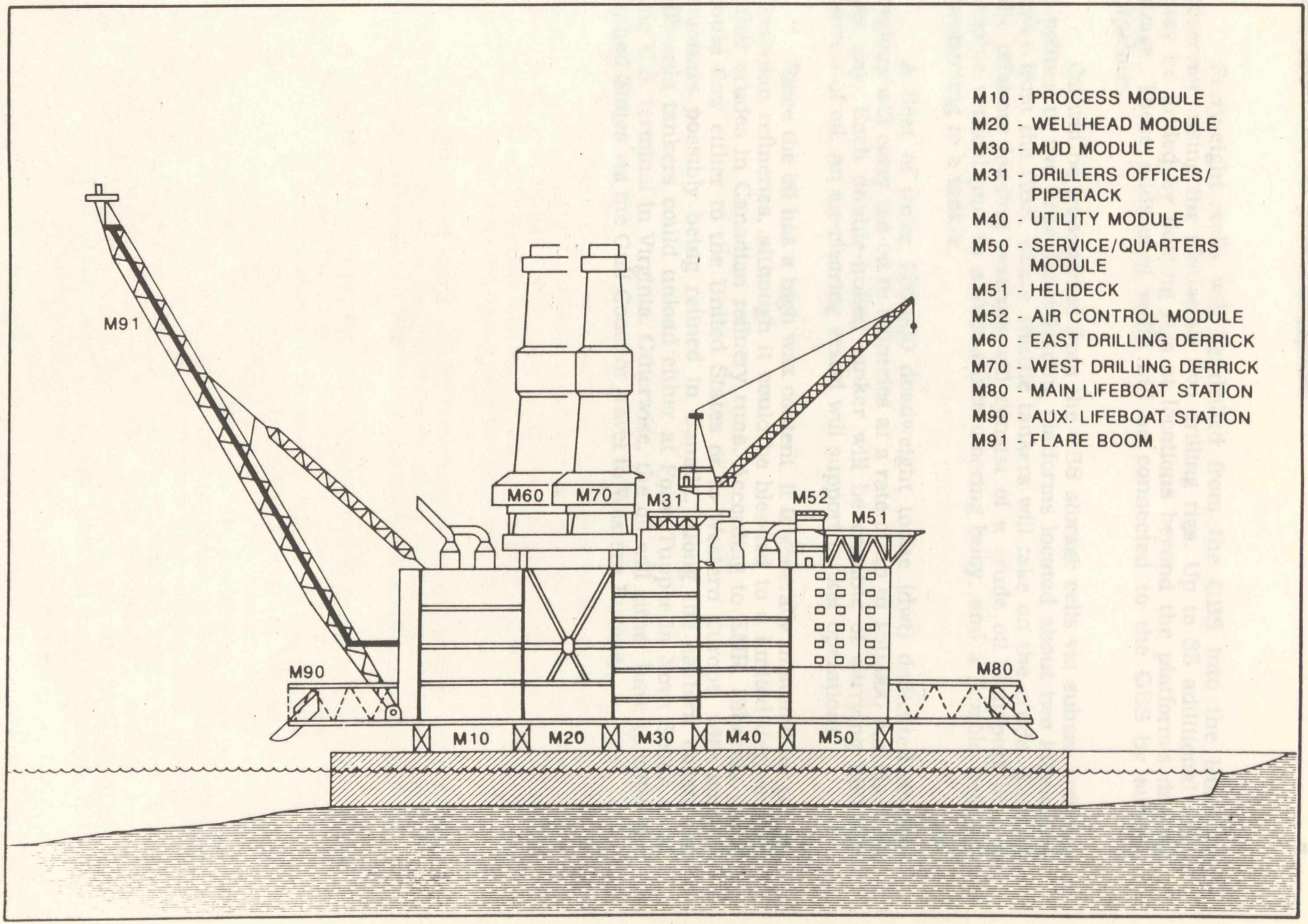
(1) Drillers Offices/Pipe Rack (M31)
(2) Helideck (M51)
(3) Air Control Module (M52)
(4) East Drilling Derrick (M60)
(5) West Drilling Derrick (M70)
(6) Main Lifeboat Station (M80)
(7) Auxiliary Lifeboat Station (M90)
(8) Flare Boom (M91)

The total topside weight will be approximately 33,000 tonnes.

One of the supermodules (M20, the Wellhead Module) is to be built in Newfoundland; the other four originally were to be put up for international bidding. According to the information kit released on 14 September 1990, at the time of signing of the binding agreement, the consortium will "undertake its best efforts to cause the fabrication, assembly and outfitting services" of one additional supermodule in Canada.

At least seven of the eight small modules will be constructed in Canada: five in Newfoundland (the Helideck, the Air Control Module, the Main Lifeboat Station, the Auxiliary Lifeboat Station and the Flare Boom); and two within Canada (the East and West Drilling Derricks).

TOPSIDE FACILITIES LAYOUT



Forty-eight wells will be drilled from the GBS into the Hibernia reservoir, using the platform's two drilling rigs. Up to 35 additional wells may be drilled by floating rigs at locations beyond the platform's drilling range. These additional wells will be connected to the GBS by subsea pipelines.

Oil will be transported from the GBS storage cells via subsea transfer pipelines to two articulated loading platforms located about two kilometres away from the GBS, where shuttle tankers will take on the crude. Each of the offshore loading systems will consist of a crude oil transport line, a flexible vertical pipe to a subsurface mooring buoy, and a flexible hose for connecting to a tanker.

A fleet of three 120,000 deadweight tonne (dwt) dedicated shuttle tankers will carry the oil to refineries at a rate of up to 150,000 barrels of oil per day. Each double-hulled tanker will be capable of carrying 850,000 barrels of oil. An ice-clearing vessel will support tanker operations.

Since the oil has a high wax content, it is generally unsuited for use in Canadian refineries, although it could be blended to a limited degree with other crudes in Canadian refinery runs. According to EMR, Hibernia crude could flow either to the United States or to Western Europe, with smaller amounts possibly being refined in Canada. Along the eastern coast, the Hibernia tankers could unload either at Point Tupper in Nova Scotia or at one U.S. terminal in Virginia. Otherwise, the oil will either have to enter the United States via the Gulf Coast or travel to Western Europe.

The Hibernia Project Statement of Principles

Undertakings by the Government of Canada

1. Contribution

The Government of Canada will contribute 25% of eligible construction costs up to a maximum of $1.04 billion. Eligible capital costs are defined as those "...costs incurred after the beginning of the month during which this Statement of Principles is signed and up to production startup [the date by which cumulative production from the Hibernia field exceeds three million barrels] and to exclude costs for which the Project Owners are reimbursed or otherwise compensated, Project Owners' overhead costs and all interest costs." As eligible capital costs are incurred, funds will be paid on a monthly "cash call" basis to the project operator acting as agent for the owners, in amounts equal to 25% of such eligible costs and subject to the specified limit of $1.04 billion.

2. Loan Guarantees (The Primary Guarantee Facility)

The Government of Canada will guarantee loans up to 40% of construction costs, to a maximum of $1.66 billion. "Canada's obligations to the guaranteed lenders under the guarantees will constitute unconditional obligations of Canada..." As eligible capital costs are incurred on the project, funds will be drawn down on a monthly "cash call" basis, in amounts equal to 40% of such eligible capital costs up to the $1.66 billion limit. The Government of Canada will receive an annual guarantee fee of 1/2 of 1% from each project owner, calculated on the average outstanding principal amount of the guaranteed loans over the previous 12-month period.

The guaranteed loans will be non-recourse to the project owners. They will be secured by each project owner's share of the assets and cash flow, and no other project-secured loans will rank ahead of the guaranteed loans.

Repayment of the principal of the guaranteed loans begins 24 months after the earlier of the project payout for each project owner and the achievement of peak production. Payout is defined as the time at which the aggregate of the project owner's (1) cumulative gross revenues plus (2) share of the outstanding principal amount of the guaranteed loans plus (3) share of the unrepaid balance of the interest assistance first equals the aggregate of the owner's share of (1) the cumulative operating costs plus (2) the cumulative capital costs (net of government contributions) plus (3) the cumulative gross interest costs plus (4) the cumulative royalties plus (5) the cumulative notional project income tax. Peak production is defined as the earlier of 1 January 1999 and the date at which cumulative oil production from Hibernia exceeds 25 million barrels. Notional project income tax is also defined in the *Statement of Principles*.

Repayment of the guaranteed loans shall proceed at a rate which is the greater of (1) 30% of the project owner's net revenues from the project (before income taxes and royalties), and (2) "the amounts such that the sum of interest and principal payments will equal the payments determined on an equal monthly blended interest and principal payment basis amortized over a 96 month term". That is, loan repayment must be completed within eight years after the repayment obligation is triggered. Interest on the guaranteed loans will at all times be paid on a current basis and cannot be capitalized.

If any of the project owners decide not to take up guaranteed loans, that share of the $1.66 billion becomes unavailable - the $1.66 billion is prorated among the project participants.

The Government of Canada will also provide loans to the project owners to assist in meeting current interest payments on the guaranteed loans in the event that current oil prices available to Hibernia production fall below $US 25 per barrel, measured in constant 1987 U.S. dollars. This assistance becomes available only after the obligation to commence repayment of the outstanding principal on a guaranteed loan has been triggered and only if the loan is in good standing. Interest assistance available to the project owners is capped at $300 million and will not exceed 50% of the interest payable in any given month. The actual amount of the interest assistance is determined by a formula linking the current price of oil to the $US 25 threshhold value.

Repayment of the interest assistance begins in the month immediately following full repayment of the guaranteed loans, to the extent of 30% of each project owner's net revenues (gross revenues minus operating costs and capital costs) before income taxes and royalties. Security for the repayment of the interest assistance will be a charge on the project owner's net revenues.

3. Temporary Financing Facility

The Government of Canada will provide a revolving guarantee for a temporary financing facility of up to $175 million which will be available to the project owners to cover:

(a) 40% of pre-production development cost overruns above a base development cost of $5.215 billion; and

(b) negative project cash flows after production startup to the extent caused by debt service (principal or interest net of Government of Canada interest assistance) on the guaranteed loans.

Advances from the temporary financing facility are secured in the same manner as the main guaranted loans. Prior to production startup, project owners will make current interest payments on temporary financing

(that is, the interest payments cannot be capitalized). After production startup, the outstanding principal plus current interest charges will be repaid to the extent of any positive project cash flow after required principal and interest payments on the guaranteed loans and on any interest assistance loans have been made.

As is the case with the Primary Guarantee Facility, each consortium member will pay a guarantee fee equal to 1/2 of 1% per annum.

Undertakings by the Government of Newfoundland and Labrador

1. Retail Sales Tax

The Government of Newfoundland and Labrador will not levy provincial retail sales tax against either pre-production or post-production capital expenditures attributable to the Hibernia project. Provincial sales tax levied against project operating costs will be at the rate of 4% (compared with the current general level of 12%).

2. Offshore Technology Transfer Fund

The Government of Newfoundland and Labrador will provide $11 million to the project owners out of an Offshore Technology Transfer Fund in recognition of the owners' commitments to certain design engineering to be undertaken in the Province. These funds will be disbursed as costs are incurred.

3. Provincial Corporate Income Tax Reduction

The Government of Newfoundland and Labrador has agreed to reduce the effective rate of tax payable on taxable income earned in respect of operations in the offshore area to a rate equal to the national average of all provincial corporate income tax rates.

Joint Government Undertakings

1. Offshore Development Fund Support

The Governments of Canada and of Newfoundland and Labrador will allocate $95 million from the Canada-Newfoundland Offshore Development Fund towards construction of an offshore construction, fabrication and assembly facility at Bull Arm. The facility will be designed to support the following activities related to the construction of the Hibernia platform:

- construction and outfitting of the GBS;
- fabrication of topside modules;

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- construction and outfitting of the GBS;
- fabrication of topside modules;

- assembly and outfitting of the complete topsides; and
- mating and hook-up of the completed topsides.

Funds will be disbursed as costs are incurred and in the same proportion as the $95 million is calculated to be of the total cost of these facilities. Although the topsides of the GBS have been redesigned since the July 1988 *Statement of Principles*, doing away with the need for the main support frame, the $95 million remains available since the majority of this funding was in any case dedicated to GBS construction and the associated graving dock. After the development phase of Hibernia is completed, the facility will be turned over to the Province for its use in subsequent offshore projects.

2. Interim Financing

A new feature of the recently-signed agreement is an interim financing facility, which advances funds to the consortium until the "various statutory authorities" (including Bill C-44) relating to the federal financing packages are in place. The two governments have agreed to provide the consortium with up to $95 million from the Offshore Development Fund to offset the costs of initial engineering, development and project management. The funds thus advanced are to be fully repaid when the statutory authorities are in place. According to the 14 September information kit, "This support from the Offshore Development Fund allows the consortium to commence the project now so that the critical project schedules associated with Hibernia can be maintained such that oil production can start in 1996."

3. Access to Markets and Prices

Production from Hibernia will "have full access to domestic and/or international crude markets at market prices, subject to the consortium complying with necessary legislative and regulatory requirements", such as those of the National Energy Board and the Canada-Newfoundland Atlantic Accord Implementation Act.

4. Production Prorationing Excluded

"The Hibernia Project is also explicitly excluded from any potential government pro-rationing or other similar program. The overall production rate will be determined by generally accepted reservoir management practices, as approved by the Canada-Newfoundland Offshore Petroleum Board." ("Financial and Fiscal Elements" article, page 4, of the 14 September 1990 information kit provided from EMR)

Project Owner Undertakings

1. Completion Assurances

The project owners will provide individual corporate undertakings to the Government of Canada that they will exercise due diligence to complete the project. The project owners also undertake to spend at least $1 billion and these undertakings will remain in place as long as the estimated project development costs to production startup, as verified by independent audit, remain below $5.6 billion. The spending commitments terminate if the estimated development costs prior to production startup exceed $5.6 billion.

Failure of a project owner to meet this spending commitment will result in (1) its outstanding loans at the time of breach of commitment becoming due and payable; and (2) a 5% share in that owner's portion of total project assets being transferred to the Government of Canada.

2. Net Profits Interest

Each project owner will pay the Government of Canada a Net Profits Interest (NPI) in that owner's share of the project, to take effect in the month immediately after the repayment of the guaranteed loans, any interest assistance and the temporary financing facility. Canada's NPI will be 10%, calculated on the owner's net revenues from the project, and estimated and paid on a monthly basis. Within six months of the end of each calendar year, a final calculation will be made and the NPI adjusted.

The amount of the NPI payable in any month will be reduced by the same proportion that the average current oil price for that month is below $US 30 per barrel, both prices expressed in constant 1987 U.S. dollars.

3. Statutory and Contractual Royalties

The Hibernia royalty regime consists of two types of royalty: a statutory royalty and a contractual royalty. The contractual royalty is the primary royalty payable; the statutory royalty is a nominal royalty instituted to meet specific legislative and constitutional requirements deriving from the *Canada-Newfoundland Atlantic Accord Implementation Act*.

The statutory royalty is a nominal 1¢ per barrel charge payable initially to the Government of Canada and in turn paid over to the Province. The statutory royalty is a credit against the contractual royalties payable.

Each member of the consortium will pay a contractual royalty to the Province based on production. The contractual royalty consists of a three-tier system: (1) a gross royalty; (2) a net royalty; and (3) a supplementary royalty, as defined in the 14 September EMR information kit.

(i) Gross Royalty

Each consortium member will pay to the Government of Newfoundland and Labrador a gross royalty which will be 1 per cent to 5 per cent of their transfer revenue. After production start-up, this gross royalty is equal to 1 per cent of a member's transfer revenue and increases by 1 per cent every 18 months to a maximum of 5 per cent. Production start-up refers to the point in time when cumulative oil production reaches three (3) million barrels.

In the event crude oil prices are below $30/bbl (1987 $US), the gross royalty payable to the Province will be reduced by the proportion that the price of Hibernia crude is below $30/bbl (1987 $US). Indexation of the gross royalty occurs only during the years of repayment of the loans guaranteed by the Government of Canada.

(ii) Net Royalty

The Province's net royalty is equal to 30 per cent of a consortium member's net transfer revenue from the project. The net royalty mechanism becomes operative when project payout is achieved. This occurs when cumulative costs, including a return allowance of 15 per cent for the project, equal cumulative gross transfer revenue for the project.

Once payout is achieved, a member is obliged to pay to the provincial government the greater of 30 per cent of net transfer revenue or 5 per cent of gross revenue.

(iii) Supplementary Royalty

The third component of the contractual royalty regime is referred to as the supplementary royalty. This royalty is activated when supplementary royalty payout occurs and is designed to ensure that the provincial government receives a progressively higher share of Hibernia profits. The Province will receive a supplementary royalty equal to 12.5 per cent of a member's net revenue in addition to the 30 per cent net royalty described in (ii) above. Supplementary royalty payout is calculated on the same basis as that for the net royalty except that eligible costs will include a return allowance equal to 18 per cent plus inflation.

4. Project Benefits

Project owners have undertaken to provide employment, procurement and engineering benefits within Canada, as reviewed in the next section.

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Hibernia Benefits and Opportunities

The *Statement of Principles* defined project owner undertakings in the area of "Benefits", subdivided into three groupings: (1) Employment and Procurement Benefits; (2) Main Support Frame Assembly and Outfitting; and (3) Engineering.

With regard to "Employment and Procurement Benefits", the project owners "shall give full and fair opportunity to the provision of goods and services and in employment opportunities in connection with the Project to Canadians, with first consideration for Newfoundlanders...", consistent with Decision 86:01 of the Canada-Newfoundland Offshore Petroleum Board and consistent with the provisions of the Atlantic Accord and its implementing legislation. The project owners had previously agreed that a Canada-Newfoundland content of 45-50% of development expenditures was an appropriate target and would undertake their best efforts to reach this target as set out in the Hibernia Canada-Newfoundland Benefits Plan. The 14 September 1990 information kit now states that "The total Canadian content is targeted by the consortium to be in the order of 55 to 60 per cent of the estimated $5.2 billion in pre-production capital expenditures." Presumably this primarily reflects the best efforts undertaking of the consortium to construct a second supermodule in Canada. Regarding the $10 billion in estimated operating expenditures, Canadian supply capability is considered to be 65%.

Project owners estimate that two-thirds of total pre-production employment, excluding employment related to the construction of the shuttle tankers, will be provided by Canadians. To the extent practical and cost effective, first employment consideration will be offered to Newfoundlanders.

With respect to "Main Support Frame Assembly and Outfitting", the project owners had agreed to construct and outfit the main support frame in Newfoundland. Now that this design feature has become unnecessary because of the supermodule approach, this aspect of the agreement has been renegotiated. The supermodule design has reduced the total number of pre-production construction hours and the negotiations were attempting to maintain the same *proportion* of Canadian employment in the new person-year totals.

With regard to "Engineering", the project owners have estimated that 85 to 90% of project management and engineering design for the GBS, the topsides, the articulated loading platforms and the subsea pipelines would take place in Canada. Specifically, the project owners have agreed that the following design engineering work will take place in Newfoundland: (1) at least 50% of the GBS design engineering, as measured in person-years; (2) design engineering for the GBS accommodations, flare boom and helideck; and (3) design engineering for the subsea lines to the articulated loading

platforms. As an extension of the last point, the consortium has now agreed to a best efforts undertaking to perform "a significant portion of the remaining design engineering for the subsea facilities in Newfoundland and Labrador".

Employment Benefits

The *Hibernia Background Paper* cited estimates of employment benefits. During the development phase, the estimates of direct employment were: Newfoundland 10,000 person-years; other Canadian 4,500 person-years; and foreign 7,000 person-years; for a total direct design, construction and installation employment figure of 21,500 person-years, with 14,500 person-years sourced in Canada. The 14 September information kit now cites Canadian employment during development as 13,000 person-years, with 10,000 person-years still accruing to Newfoundland. Total direct project employment is now projected to be 20,000 person-years, suggesting that foreign direct employment will remain at about 7,000 person-years.

Indirect and induced employment during Hibernia development was estimated in the *Hibernia Background Paper* at: Newfoundland 25,000 person-years; and other Canada 7,600 person-years; for a total Canadian indirect and induced employment during development of 32,600 person-years.

During the Hibernia production phase, it is estimated that 1,100 direct permanent jobs will be created in Newfoundland and that 2,450 indirect and induced permanent jobs will be created within the Province.

According to Energy Minister Jake Epp's statement on 14 September 1990, "The agreement goes beyond the *Statement of Principles* as a result of the consortium's commitment to undertake an additional 2 million person hours of metal fabrication work in Canada. These new commitments are approximately equivalent to two super modules." The accompanying statement of "Employment and Industrial Benefits" in the information kit observes that, "There is capability within Quebec, for example, to fabricate, among other components, the topside mounted structures and a supermodule", lending credence to press reports that the negotiations leading up to the signing of the binding agreement saw the consortium being pressured to spin off a major part of the construction work to the financially troubled Quebec shipyard MIL Group.

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Offshore Safety and Environmental Protection

1. Offshore Safety

The sinking of the Ocean Ranger drilling rig on 15 February 1982 resulted in 136 recommendations by the Hickman Commission regarding offshore safety. Most of these recommendations were implemented and the resulting strengthening of Canadian offshore regulations and standards will result in Hibernia being a safer operation.

> The safety of the Hibernia project will be closely monitored and enforced by the Canada-Newfoundland Offshore Petroleum Board. Before production commences the operator must provide detailed operations manuals covering safety and other operating procedures. A safety program involving joint safety committees of workers and management will also be required. Systematic reporting will take place. There will be daily operations reports, monthly safety reports and quarterly training reports.
> (*Hibernia Background Paper*, undated, page 16)

A Certificate of Fitness must be issued for the entire facility by an independent third party, verifying that it has been designed, constructed, installed and will be operated in a manner consistent with the approved Development Plan. This is a prerequisite for production authorization.

A second requirement will be a Production Operations Authorization, which is required before commercial production can begin. The Certificate of Fitness must be in place, all operating procedures must meet specified standards, contingency plans must be approved, and maintenance, inspection and environmental protection plans must be in place before this approval will be given.

2. Environmental Protection

The Federal and Newfoundland Governments decided in 1980 that a public review under the Environmental Assessment and Review Process should be conducted for the Hibernia project. Mobil Oil Canada, as operator, produced the environmental impact statement and the panel report of December 1985 concluded that the project could proceed.

Many detailed environmental studies relating to the Hibernia project have been conducted by the operating company and through two federal research programs: the Environmental Studies Research Fund (ESRF) and the Panel for Energy Research and Development (PERD). In total, the federal government has spent approximately $200 million on research related to the offshore environment, with the bulk of it having some

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- the development of environmental design criteria;
- marine structures engineering;
- ice-related engineering;
- offshore safety;
- hydrographic surveying;
- ship design;
- meteorological and oceanographic forecasting; and
- environmental monitoring and impact assessment.

The Hibernia operators "...are held liable without proof of fault or negligence for damages, including the loss of current and future income, resulting from oil spills or deposits of seafloor debris." Oil companies are required to have the capability to undertake an oil spill cleanup and must demonstrate or exercise this capability annually to the satisfaction of regulatory agencies.

CNOPB has responsibility for the regulatory management of the Hibernia oil field under the *Canada-Newfoundland Atlantic Accord Implementation Act*, which sets out the environmental requirements for petroleum companies operating in the Newfoundland offshore. Federal and provincial agencies with statutory responsibilities in Newfoundland and the offshore have signed Memoranda of Understanding respecting the fisheries, marine services and the environment in order to resolve environmental issues more quickly and effectively.

House Legislative Committee Amendments

A substantial number of small changes were made to the wording of Bill C-44 at the House of Commons Legislative Committee stage. Comments are made below on only a few of the more significant changes.

Changes were made to the "Interpretation" section of C-44 (pages 1-2 of the bill as submitted for first reading), including the addition of definitions for "continental shelf", "offshore area" and "territorial sea". A new paragraph was added allowing the Governor in Council to make regulations prescribing the outer limits of the continental shelf, designating a particular submarine area as part of the continental shelf, designating an area of the sea as an "offshore area", and prescribing the manner of determining the province that has the coast nearest to an "offshore area".

Among other changes and additions in clause 3, subparagraph (2)(a)(iii) has been changed from "the payment of a repayable contribution in an amount not exceeding in the aggregate three hundred million dollars" to read "the provision of other assistance in an amount not exceeding in the aggregate three hundred million dollars". A new subparagraph (2)(b) has been added providing for one or more trustees to act on behalf of the Minister. EMR advises that this is a facilitative mechanism so that the Minister does not have to be available every time his signature is required for one of the financial instruments to be exercised by a project owner. A new subparagraph (2)(e), page 3, specifies "undertakings in relation to access to domestic and international markets for oil produced from the Project..."

Following a series of wording changes in clauses 4, 6, 7, 8, 10 and 11, clause 12 repeals the definition of "security interest" contained in the *Canada-Newfoundland Atlantic Accord Implementation Act* and substitutes a new one for the Hibernia project.

A new clause 14 repeals section 107 of the *Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation Act* and substitutes new wording therefor. A new clause 16 makes the corresponding change in the *Canada Petroleum Resources Act*, and a new clause 18 makes the corresponding change in Bill C-39, *An Act to apply federal laws and provincial laws to offshore areas and to amend certain Acts in consequence thereof*, should Bill C-39 be assented to in this Session.

Suggested Questions

Hibernia Subsidies/Security of Oil Supply

The Government of Canada is making an outright contribution of up to $1.04 billion towards Hibernia construction costs. The four project owners will presumably take advantage of the offer of federal loan guarantees amounting to as much as $1.66 billion. If the price of crude oil remains below the levels stipulated in the agreement and if there are construction cost overruns, then other federal financing provisions (the interest assistance and temporary financing facilities) are brought into play. The maximum amount that the federal government could have to advance for the Hibernia project if all of these financing provisions were fully exercised is $3.175 billion. Although approximately two-thirds of this $3.175 billion would ultimately be recoverable, the federal government is nonetheless underwriting Hibernia development to a major extent.

- Why is the federal government subsidizing Hibernia development when most if not all of Hibernia's oil output is expected be sold into the United States?

- Does this not simply constitute the export of a development subsidy to the benefit of foreign consumers?

  [EMR argues that Americans or other purchasers of Hibernia crude will simply be paying the going rate for oil and Hibernia crude will displace other foreign crudes that would otherwise have been purchased. Hibernia development, however, creates employment opportunities and other economic activity within Newfoundland and Canada that would not otherwise exist, and therefore the federal subsidy should be viewed as a regional development subsidy.]

- Is Hibernia a regional development project or an energy security project?

  [The *Hibernia Background Papers* of 1988 state that: "Canada's increased requirements for foreign crude supplies could be significantly reduced by new supplies of light/medium crude oil from Hibernia, and from the further development of the potential of the Newfoundland offshore" (page 14). The fact sheet on "The role of Hibernia in Enhancing Canada's Oil Supply", contained in the 14 September 1990 EMR information kit, drops any mention of Hibernia oil being used in Canada. It refers to the Hibernia project establishing "a new energy frontier for Canada" and diversifying Canada's oil supply; the issue of Canadian oil *security* is not addressed. Canada's projected conventional crude oil supply/demand balance in 2000 is given and Hibernia's production is calculated to be about 12% of Canada's output of conventional light and medium crude oil at that time.]

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- If Hibernia is a regional development initiative, what is the cost per permanent (or long-term) job created? Are there not less expensive ways of creating jobs in Newfoundland?
- Since the waxy nature of Hibernia's crude was recognized in 1988 as it is today, and since the character of Hibernia oil is used as the reason why it will most likely be refined outside Canada, why did the 1988 Hibernia background paper imply that this project would contribute to Canada's oil security through the displacement of imported crude?
- To what extent can Hibernia's waxy crude be blended with other crudes and used in Canadian refinery runs? How costly would it be to convert Canadian refining capacity to handle Hibernia crude? How quickly could such a refining conversion be made?
- What are the physical characteristics of the crude oil contained in the Terra Nova oil field off Newfoundland and the Cohasset-Panuke field off Nova Scotia, which are now more likely to undergo development– do these reservoirs contain waxy crudes like Hibernia? What is the likely disposition of oil production from these fields?

Hibernia Development and the FTA

Both Mr. Hopper of Petro-Canada and the Energy Minister have indicated in testimony to this Committee that the United States is the most logical destination for Hibernia oil production, given its physical properties. According to Article 904(c) of the Free Trade Agreement, either Party can only introduce a restriction on bilateral energy trade if:

> c) the restriction does not require the disruption of normal channels of supply to the other Party or normal proportions among specific energy goods supplied to the other Party such as, for example, between crude oil and refined products and among different categories of crude oil and of refined products.

- If, as Petro-Canada and the Minister have suggested, the United States becomes the destination for most if not all of the Hibernia oil, is it not the case that Canada would thereafter be bound to continue to make available Hibernia crude for purchase in the United States regardless of our domestic oil situation because not doing so would violate Article 904(c) regarding "normal channels of supply"?

According to the 14 September 1990 EMR information kit, "Financial and Fiscal Elements" fact sheet, p. 4, "The Hibernia project is also explicitly excluded from any potential government pro-rationing or other similar program."

- What does this statement mean in the context of a decision by Canada to invoke Article 904 of the Free Trade Agreement, namely to introduce a restriction on the export of energy to the United States, using oil as the example? Would Canada still continue to supply the full Hibernia output to U.S. refineries, despite having declared a restriction, assuming that this oil could not readily be refined in Canada?

- How could this stipulation against pro-rationing be made binding on a future government - could not a future government simply redefine the legislative basis for the agreement? Or would that constitute a breach of contract, for which the consortium could bring suit against the Government of Canada?

Employment Benefits

The Energy Minister referred in his 14 September statement on the Hibernia project to the "...additional 2 million person hours of fabrication work in Canada", beyond what the consortium had agreed to in the 1988 *Statement of Principles*. Assuming a 7.5-hour workday and 52 five-day weeks in a work-year, this represents more than an additional 1,000 person-years of work. Yet the total number of development person-years of work to be sourced in Canada has shrunk from the 14,500 quoted in the 1988 *Hibernia Background Papers* to the 13,000 person-years cited in the September 1990 information kit.

- In what parts of Canada will these extra person-years of metal fabrication work be sourced? How much of this extra metal fabrication employment depends on the consortium being successful in its "best efforts" to cause the fabrication of a second supermodule in Canada - or, conversely, how much of this employment will not materialize if only one supermodule is constructed in Canada?

- To what extent is MIL Group expected to benefit from the Hibernia project?

- Will any penalties be applied to the consortium if it fails to meet its objectives for employment and procurement in Canada?

- By how much did the redesign of the platform topsides reduce the person-years of work to be sourced in Canada, before other offsetting work commitments were made by the consortium?

- Does the topsides redesign and consequently reduced direct construction person-years of employment also reduce the estimates of indirect and induced employment during the Hibernia development phase? If so, by how much?

Environmental Protection Plans

According to the *Hibernia Background Papers*, page 19, the Hibernia operators "...are also required to have the capability to undertake an oil spill cleanup operation and must demonstrate or exercise this capability annually to the satisfaction of regulatory agencies."

- Can the Committee be given more specific information on what "this capability to undertake an oil spill cleanup operation" will consist of?
- Where will the cleanup equipment and ships be located?
- What form will the annual demonstration of spill cleanup capabilities take? How will the effectiveness of cleanup capabilities be judged and who will make that judgement?
- What is the worst credible oil spill that the operators will be asked to prepare for? Will it involve a spill underneath pack ice? How would such a spill be dealt with?
- Has the Exxon spill in Alaska caused a reevaluation of the capabilities needed for the Hibernia operation?

The Hibernia Development Schedule

Despite missed deadlines in signing the binding agreement for Hibernia development, the project schedule still anticipates oil production commencing in October of 1996.

- How vulnerable is the target date for production startup to delays in the construction schedule?
- How sensitive is the pre-production capital cost of Hibernia to delays in construction?

ESTIMATED SCHEDULE OF KEY DATES AND SIGNIFICANT EVENTS

September 1990	-	Announcement of Hibernia Agreement
September 1990	-	Award Gravity Base Structure (GBS) contract
September 1990	-	Award Topside engineering and project services contract
October 1990	-	Work begins on Bull Arm construction site
August 1991	-	Bull Arm construction site completed
April 1992	-	GBS drydock completed
June 1992	-	Module fabrication begins
April 1993	-	Engineering and construction of Offshore Loading System (OLS)/pipeline begins
April 1993	-	Order shuttle tankers
April 1994	-	Module assembly and hook-up begins
March 1995	-	Mating of the GBS and Topside begins
May 1995	-	Inshore hook-up begins
August 1995	-	Tow out to production site
September 1995	-	Installation of OLS/pipeline begins
April 1996	-	Development drilling begins
July 1996	-	Delivery of first two shuttle tankers
October 1996	-	Production begins
September 1997	-	Delivery of third shuttle tanker

DATE DUE

MAR 1 6 1998			