



10 DOWNING STREET

From the Private Secretary

23 October 1980

BF Sub

I enclose another letter to the Prime Minister about the planned Occidental Refinery at Canvey Island from the Castle Point Refineries Resistance Group.

I expect you will remember the difficulties we had in dealing with the last letter from this Group and, in particular, the sensitivities of Sir Bernard Braine about what Ministers say to Mr. Haslam who is a former Labour Councillor in Canvey.

I should be grateful for advice on who should now reply to Mr. Haslam, together with a draft of the proposed reply. It would be helpful if this could reach me by 5 November.

I am sending copies of this letter, and enclosure, to Julian West (Department of Energy) and Jeff Jacobs (Department of the Environment).

M. A. PATTISON

Andrew Hardman, Esq.,
Department of Employment.

SB

CASTLE POINT REFINERIES RESISTANCE GROUP

n. Secretary; P.J. Haslam, IIB Malvern Avenue, Canvey Island, Essex.

The Rt Hon: Mrs. Margaret Thatcher, M.P.
Prime Minister,
10, Downing Street,
London S.W.1

23 October, 1980

Dear Prime Minister,

Occidental Refinery - Canvey Island

You will no doubt be aware that the residents of Canvey Island have campaigned for the past 16 years to prevent the construction of oil refineries on the Island. This campaign has been consistently supported by the local authorities and our M.P. Sir Bernard Braine, who has raised the matter on numerous occasions in Parliament, since 1964.

The late Richard Crossman revealed in his Diaries that the original planning permission for an oil refinery, granted in 1964, was given not on the basis of a reasoned consideration of the planning inquiry report, but as a result of a Cabinet decision that the Government "could not afford to upset a foreign oil company". It is on this questionable basis that planning permissions have since been granted for TWO further oil refineries on Canvey, in the teeth of opposition on environmental and safety grounds.

Successive Governments have claimed that these refineries were vital to the "national interest". It has become increasingly apparent to residents that the so called "national interest" is merely a device for ignoring amenity and safety objections raised by the local community. The total irrelevance of the proposed Canvey refineries to the national interest can be judged from the fact that United Refineries Ltd. have not carried out any significant construction work in 16 years and Occidental have taken 7 years to reach their current conclusion that they do want a refinery after all.

Although the H.S.E. Canvey report came to the ludicrous conclusion that oil refinery development could go ahead, it clearly showed that the islanders face a higher level of risk from industrial hazard than any other community in the United Kingdom. That in itself was a condemnation of a planning system which has allowed successive Governments to impose no less than three additional major hazards on an already endangered community. In the light of the "Canvey Report" it is morally indefensible to even consider an oil refinery on Canvey Island, or attempt to trade - off a reduction in one risk against the imposition of another. The only sensible and moral approach to the Canvey dilemma must be - NO MORE HAZARDS AND A PHASING OUT OF THOSE WE ALREADY HAVE.

This summer saw yet another public inquiry, into the possible revocation of the planning permission granted to United Refineries Ltd. in 1973. At this inquiry no less than four internationally respected scientific experts gave evidence that the "Canvey Report" had in fact underestimated the level of risk to which residents were likely to be exposed, and overestimated the effect of recommended improvements. That underlined the fragility of the conclusion that the H.S.E. had reached, that oil refinery development could proceed. But more than that the inquiry took place against the background

cont/

of Occidental's abandonment of their refinery, since Dr. Hammer had not seen fit to announce the reactivation of their project, at that time. Consequently Occidental were not available at the inquiry to explain to the Inspector their new plans. Had they done so there would have been a storm of protest from the islanders. It is imperative that no decision is reached on Dr. Hammer's latest proposals until after the Inspector who conducted the inquiry has reported.

The question of the safety of Canvey residents achieved new significance in January 1979, when the I.R.A. planted a bomb at the Texaco Storage Depot - a scenario not even considered by the H.S.E. in their Canvey Report. Although this incident did not cause a major disaster it clearly demonstrated the vulnerability of this type of installation to terrorist attack. This contention is further supported by the recent terrorist attacks on refineries in South Africa and the destruction of the Abadan refinery in the current Iran/Iraq conflict. These events alone are sufficient evidence that oil refineries should not be placed near residential populations. At Canvey, however, we are not dealing with oil refinery development in isolation. About one third of the total risk to the inhabitants, according to the HSE, comes from the handling and storage of huge quantities of liquified gas. In the event of a major spillage of such gas Canvey would be exposed to a disaster of immense proportions. This is not denied by the HSE, and the point was reiterated by expert witnesses at the recent inquiry. No government has the right to ignore such dangers and to blithely welcome the addition of further hazards.

We took great exception to the manner in which Dr. Hammer chose to announce the latest Occidental plan for Canvey, without reference to our MP or the local authority, bearing in mind the sensitivity of the subject. His publicity stunt seems to have been designed to undermine the position of our MP, the local authority and the residents by obtaining your public approval of what he proposes. New investment of all kinds is obviously desirable at this time. However, we would strongly argue that the revival of a refinery on Canvey Island at a time of excess refinery capacity and an encouraging trend to greater energy conservation, is not the most advantageous way to spend £200 mill: Furthermore, we regard the offer of jobs, which, it is alleged will stem from this proposal, not only highly suspect in fact, but also a shabby attempt to make a totally objectionable scheme more palatable to residents at a time of high unemployment. Indeed, it ignores the fact that the HSE's advice to the local authority, not to allow new development within 1 kilometre of the existing gas storage, has already effectively blighted the island and prevented the establishment of new firms which would have provided employment.

The proposal made by Occidental should be seen for what it really is - yet another attempt to salvage something from their earlier ill-conceived investment. We, the residents, are not prepared to accept this. We would like an assurance that the Government has not given any undertaking to Occidental regarding the acceptability of their new proposal, that it will be the subject of the most searching investigation and that the right to hear objections will be guaranteed.

Yours sincerely,

P. J. Haslam

P. J. HASLAM



Home Affairs

Out
c. D/Sec.
D/amp.

10 DOWNING STREET

From the Private Secretary

4 December 1980

The Prime Minister has asked me to thank you for your letter of 23 October about oil refineries on Canvey Island and in particular the installation to which Dr. Hammer recently referred.

I understand this is still being considered within the Occidental organisation and it will be some months before they come to a conclusion. Until they have done so, it is not clear whether they would need a further planning permission to complete the development of their refinery; that would be a matter, in the first instance, for consideration by the Castle Point District Council as the local planning authority. If the Company were to proceed they would also have to meet any requirements laid down by the Health and Safety Executive. I think your best course therefore is to ensure that the District Council and the Health and Safety Executive are aware of your views on this particular proposal.

It would not be appropriate for me to comment on the other matters set out in your letter before the Government has received and considered the report of the Planning Inspector who conducted the public inquiry during the summer into possible revocation of the URL permission.

M. A. PATTISON

P.J. Haslam, Esq.

DB



10 DOWNING STREET

I am

Sir B Braine etc

A is a suggested reply for you to Sir Bernard's letter at C, commenting on Mr Haslam's at D. B is for me to send to Mr Haslam.

Are you content to write as suggested?

MD
27/xi.



A

DEPARTMENT OF THE ENVIRONMENT
2 MARSHAM STREET
LONDON SW1P 3EB
01-212 3434

MINISTER FOR LOCAL GOVERNMENT AND ENVIRONMENTAL SERVICES

My Ref: H/PSO/18065/80

21. November 1980

Dear Mike,

Andrew Hardman has sent Jeff Channing here a copy of your letter of ~~5~~ November enclosing a copy of Sir Bernard Braine's letter of ~~30~~ October to Ian Gow.

This does not seem to be an appropriate time for a Government statement on Canvey Island and whoever responded to a question from Sir Bernard would have to decline to give the assurance he seeks that no further potentially hazardous development would be permitted before the report on the URL inquiry is available.

We think it would be appropriate for Ian Gow to reply to Sir Bernard on the lines of the draft enclosed which has been agreed with the Department of Employment and Department of Energy. If it is thought appropriate the proposed reply to Mr Haslam (forwarded with Jeff Channing's letter of 7 November) could be shown to Sir Bernard in draft.

Yours Sincerely,

M. L. Brasher

M L BRASHER
Private Secretary

Mike Pattison Esq

SUGGESTED REPLY FOR PPS/PRIME MINISTER TO SEND TO SIR BERNARD BRAINE

Thank you for your letter of 30 October commenting on the one from Mr P J Haslam about refinery development on Canvey Island.

The project which Dr Hammer mentioned to the Prime Minister is, as you say, still being considered within the Occidental organisation and we understand it will be some months before they come to a conclusion. Meanwhile we await the report of the Inspector on the Public Inquiry into possible revocation of the URL permission.

The time is not, therefore, right for a Government statement. Moreover, in view of the statutory responsibilities of the Secretary of State for the Environment, we could not give you the assurance you seek that no potentially hazardous development would be allowed before the Inspector's report is available.

You know, however, that Michael Heseltine has already deferred a decision on the appeal by London and Coastal Oil Wharves Ltd and I can certainly confirm that Occidental have had no assurance from Government about the future development of their site.

I enclose a copy of a letter which has been sent to Mr Haslam.



Home Affairs

2 MARSHAM STREET
LONDON SW1P 3EB

My ref: H/PS0/18065/80

Your ref:

7 November 1980

Hold until Employment
reply to my letter of 5/x1-1
spoke to them today.

MP 12/x1

Dear Mike

You sent me a copy of your letter of 23 October to Andrew Hardman about one from Mr Haslam, Hon Secretary of the Castle Point Refineries Resistance Group.

The three Departments concerned agree that a PS reply from No 10 would be appropriate and I enclose an agreed draft. The correspondence with Mr Haslam (in July 1979) to which you refer concerned a Government decision on the Canvey Report on which Sir Bernard Braine had been in touch with Ministers. There is no reason to think the present, purely factual, draft reply on the Occidental project will upset Sir Bernard; but it would be a courtesy to send him a copy.

Yours ever

Jeff Channing

J P CHANNING
Private Secretary

DRAFT REPLY TO P J HASLAM ESQ HON SECRETARY
CASTLE POINT REFINERIES RESISTANCE GROUP

The Prime Minister has asked me to thank you for your letter of 23 October about oil refineries on Canvey Island and in particular the installation to which Dr Hammer recently referred.

I understand this is still being considered within the Occidental organisation and it will be some months before they come to a conclusion. Until they have done so, it is not clear whether they would need a further planning permission to complete the development of their refinery; that would be a matter, in the first instance, for ^{consideration by} the Castle Point District Council as ^{the} local planning authority. If the Company were to proceed they would also have to meet any requirements laid down by the Health and Safety Executive. I think your best course therefore is to ensure that the District Council and the Health and Safety Executive are aware of your views on this particular proposal.

It would not be appropriate for me to comment on the other matters set out in your letter before the Government has received and considered the report of the Planning Inspector who conducted the public inquiry during the Summer into possible revocation of the URL permission.

Miss Parsons
Mr. Alan Davies-Jones ✓
Miss Elizabeth Lamb

Home Affairs

NOTE FOR THE RECORD

SIR BERNARD BRAINE D.L., M.P.

At present there are files circulating the office and all are connected with Sir Bernard Braine M.P., and Canvey Island.

There is a file in the Garden Rooms concerned with a Mrs. C. Bennett and the Canvey West Residents Association (Mr. G. Whatley is the Chairman).

Political Office - Ian Gow - also have correspondence from the same people. In addition they have correspondence with a Mr. P. J. Haslam of Castle Point Refineries Resistance Group.

Confidential Filing have correspondence with Sir Bernard Braine and Mr. Haslam, including papers on the "Resumed Inquiry Into the Desirability of Revoking Planning Permission Given to United Refineries Limited to Build An Oil Refinery on Canvey Island".

Would the Garden Rooms, Political Office and Confidential Filing all please note that there are all these files circulating round the office.

L. J. Outred-Rhodes
P.P. Mike Pattison

5 November 1980



file RB

10 DOWNING STREET

From the Private Secretary

5 November 1980

Le Envoimail

We spoke about my letter to you of 23 October, covering one from the Castle Point Refineries Resistance Group.

I now enclose the letter from Sir Bernard Braine to Ian Gow here, enclosing his reactions to Mr. Haslam's letter. I should be grateful if you could take this into account in drafting the reply, which will obviously need to be delayed a few days beyond my deadline of today.

M. A. PATTERSON

Andrew Hardman, Esq.,
Department of Employment.

RH

From Sir Bernard Braine, DL, MP



HOUSE OF COMMONS
LONDON SW1A 0AA

30th October, 1980.

My dear Ian.

Thank you for your letter of 24th October, enclosing a photocopy of one from my constituent, Mr. P.J. Haslam, and for your kind suggestion that I should let the Prime Minister have my comments.

... I feel bound to say that I agree substantially with what Mr. Haslam has written. I enclose my comments on his letter, together with copies of the evidence I gave at the recent Public Inquiry held to consider the possibility of revoking planning permission for one of the two proposed Canvey refineries.

I would respectfully draw the Prime Minister's attention to page 15, paragraph 35, of my concluding speech at that Inquiry, which sets out the minimum requirements I feel necessary to ensure my constituents' safety.

*Yours
Bernard*

de Environment

Ian Gow Esq., MP
Parliamentary Private Secretary
to the Prime Minister,
10 Downing Street,
LONDON SW1.

Comments on Mr. P.J. Haslam's letter of the 23rd October, 1980
concerning the proposed Occidental Refinery at Canvey Island

- Paras 1 & 2 What is said here is factually correct.
It is impossible to separate consideration of the Occidental refinery from what has been happening in respect of Canvey's environment as a whole. In three Public Inquiries held since 1965 into applications from United Refineries (URL) for planning permission on an adjoining site, the presiding Inspector recommended refusal in two instances but was overruled by the Government of the day.
- Para 3 The 'national interest' argument does not stand up to the analysis. In the last decade existing capacity has not been used to the full. Although both URL and Occidental have had planning permission for many years, no refinery has yet been built on the Island.
- Pars 4 & 5 While the HSE Report on Canvey published in 1978 identified a massive array of risks to the 34,000 Islanders, its conclusion that after certain improvements had been carried out, refineries could be introduced to the Island, defies commonsense and has attracted serious criticism. At the recent Public Inquiry into whether planning permission for the URL refinery should be revoked, internationally respected scientists gave evidence that some of the suggested 'improvements' were dubious, whole areas of concern had not been examined at all, and the level of risk to the Island

was unacceptably high and should be reduced. Incidentally, the Inquiry was conducted on the assumption that the Occidental project had been abandoned.

Para 6

This goes to the heart of the matter. The advice of the HSE to the Castle Point District Council in September 1978 not to permit any new planning applications within one kilometre of the British Gas methane terminal, proved beyond any doubt that since a danger exists for the 8,000 people who live within that area newcomers should be prevented from sharing it. Evidence given at the recent Inquiry showed that the HSE had seriously underestimated the existing risks from the handling and storage of liquefied gas. As I said in my own evidence, to argue that in such a situation new hazards (i.e. new oil refineries) should be added, which inevitably would compound the risks to which the Canvey community is already exposed is not only wickedly irresponsible, but expresses an arrogance and a contempt for human beings which, in a democratic state, must be resisted by all the means a free people possess.

Para 7

The suggestion that the revived Occidental project will provide jobs should be measured against the blighting effect of the HSE's advice to the Local Authority in 1978, which has had the effect of preventing small firms from coming to Canvey. In short Canvey has already lost job opportunities because of the way in which the Island has been treated by Central Government and its agents.

...../3

Para 8

My understanding is that Dr. Hammer's announcement at Flotta was no more than a declaration of intent. The company confirmed to me that the project "is still in the preliminary study stage However, Dr. Hammer was asked by Mrs. Thatcher what projects were being considered in the UK and he thought he ought to mention the idea under consideration for the Canvey site". In my opinion the undertaking Mr. Haslam seeks should be given. However, it is surely more fitting for this to be given to the constituency Member in answer to a Parliamentary question, reference being made to this in the answer sent to Mr. Haslam.

Additional Comments

1. Despite the HSE's Report and efforts made since to improve safety, risks of a kind which could have catastrophic consequences still continue to be taken by hazardous industries in the area. For example, on the 25th April, the HSE found it necessary to serve no less than three Enforcement Notices on British Gas for serious neglect of elementary safety precautions.

Last month the HSE successfully prosecuted the Mobil Oil Co. Ltd. for risks taken in the handling of liquefied petroleum gas at their Coryton terminal. What is more the HSE has now discovered, two years after the ending of their investigations, that one out of three ships bringing hazardous cargoes into our ports has safety faults, half of which are potentially serious enough to cause a disaster. (See Sunday Times 19 October). We are particularly vulnerable in the Thames Estuary.

2. The method of storing liquefied gas at Canvey is obsolete and inefficient and British Gas are committed to the decommissioning of the underground storage tanks. Nowhere else in the world would new LNG storage be permitted so close to residential accommodation.
3. Against this background it would be quite wrong in a letter to Mr. Haslam to give any indication of support for Occidental's vague proposal or, for that matter, to approve any other kind of hazard, such as additional storage tanks or pipelines, before the report of the Inspector who conducted the recent Public Inquiry is available for study.

Indeed, it would be helpful if an assurance of this kind could be given. Here again, it is surely more appropriate for this to be given to the Member than to one of his constituents.

Bernard Braine

(Sir Bernard Braine)

30.10.1980

MR. GOW

JS
Home Affairs

Last year, Bernard Braine was very upset when the Prime Minister wrote to Mr. Haslam of the Castle Point Refineries Resistance Group. Sir Bernard felt (justifiably) that the Prime Minister had been advised to reply to Mr. Haslam incorporating a new statement of policy on the Canvey Island problems, and that Ministers should have informed him first.

In these circumstances, would you like to send Sir Bernard a copy of Mr. Haslam's latest letter at this stage, so that Sir Bernard has a chance to offer advice to the Prime Minister at the same time as she considers advice from Mr. Prior and other Departments? I have asked that we should have a draft reply, and a recommendation about who should send it, by 5 November.

M. A. PATTISON

23 October 1980

● See p 2 for copy
of PM letter.

NEWSLETTER

NUMBER FIVE

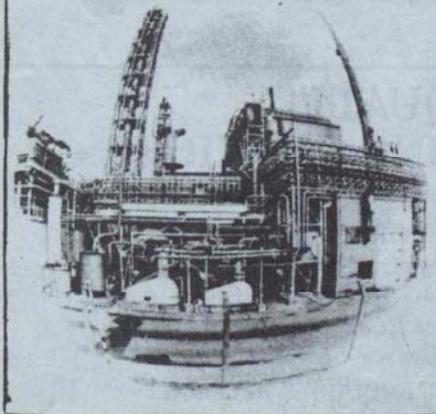
SEPTEMBER-OCTOBER 1979

**ESSEX COUNTY COUNCIL ... Planning for disaster.**

Who but a bunch of complacent cretins could produce a booklet in preparation for a disaster when they possess the power to avert that disaster by revoking the operating license of the Methane Terminal.

With their new ten-thousand pound booklet, 'Advice to Householders', now being distributed throughout Canvey Island, the Essex County Council have openly admitted that Canvey Island is an unacceptably dangerous place to live.

In producing such a booklet the Essex County Council appear to be accepting the intolerably high level of risk facing local residents from the petrochemical installations. They should be pressing for the closure of the Methane Terminal, not planning for the inevitable disaster

**CANVEY ISLAND
Advice to Householders**

the booklet

The booklet, which outlines what to do in the event of a disaster, offers little reassurance to anxious Islanders.

A petrochemical accident is, unlike a flood, totally avoidable and they should not be classed together as they have been in the County Council's booklet.

'man alive'

Canvey Island is featured in a 'Man Alive' documentary due to be broadcast on the 18th September.

The programme is about the problems and hazards of LNG following the granting of planning permission for the gas terminal at Dalgety Bay, Scotland in the face of strong local opposition.

The Cordón Sanitaire ... centre**Letter from P.M ... page 2****Wottal ... page 7**

P.M. REPLIES

On the eleventh of May, soon after the General Election, the group wrote to Mrs Thatcher seeking a ban on the two oil refineries proposed for Canvey, and the closure of the Methane Terminal.

A considered response was received on 12th July, and is reproduced here in full:-

COLLISION

On the twenty-first of May the four hundred ton vessel 'Sea Emms' carrying a cargo of fertilizer ploughed into the Methane Terminal jetty. Emergency services were on red alert as fire engines from all over Essex were called to the scene.

A PLA spokesman said:-

"We don't know why the vessel went inside the jetty and hit the link-span. We are

investigating because we are very concerned about the safety of the river ensuring nothing like this happens."

Following the incident a spokesman for North Thames Gas said that very little damage had been done. Two vertical concrete lined pillars had been bent back six to nine inches and the concrete lining was cracked.

If the pipe, running the length of the jetty, had been fractured the smallest spark could have triggered off a major disaster at the Terminal.



10 DOWNING STREET

THE PRIME MINISTER

12 July 1979

Dear Mr. Denham.

In your letter of 11 April drawing attention to the Health and Safety Executive's report "Canvey: an investigation of potential hazards from operations in the Canvey Island/Thurrock area", you urged that the Government should review the whole situation on Canvey and the conclusions reached by the HSE. You also expressed the view that the building of the two proposed new refineries should be banned, and that the methane terminal should be closed.

Ministers have now completed their study of the HSE report, and have noted that work is in hand to implement its recommendations some of which have already been carried out. The Government accepts the findings and recommendations of the report, and has decided that none of the existing installations need be required to close down, but endorses the HSE's intention to secure the implementation of the outstanding recommendations as soon as possible.

On the two proposed refineries: of course reconsideration of United Refineries' outline planning permission is before the Secretary of State for the Environment, who intends to re-open the adjourned public exploratory enquiry into its possible revocation, at which account can be taken of the HSE report; and Occidental have decided to withdraw their planning appeal for commercial reasons.

On the methane terminal, the British Gas Corporation has already announced its intention to decommission its in-ground storage of liquefied natural gas, although no date has yet been set; and action has already been taken or is well in hand to significantly reduce the risk from operations at the methane terminal.

As you pointed out in your letter, Sir Bernard Braine has long been concerned about this matter. For that reason, I am sending a copy of this letter to him, and to Dr. Oonagh McDonald, who also has an interest.

Yours sincerely,
Margaret Thatcher

From

The Rt. Hon. Mrs Margaret Thatcher

Conservative & Unionist Central Office, 32 Smith Square, Westminster SWP 3PH

10th April 1979

Dear Mrs Spink,

Mrs Thatcher has asked me to say that she realises the understandable anxiety which you must feel especially in view of the recent occurrences at Bantry Bay and at Canvey Island itself. Improvement in security is the immediate need, but these two occurrences, albeit of a different nature and cause, must also make us look again at our attitude to concentrations of explosive materials, and their location, such as you have at Canvey.

We are not yet in Government and it would be wrong for us to make any specific commitment without the benefit of the advice and information which would become available to Conservative Ministers. I can assure you however, that we would judge this to be a matter for urgent consideration.

Thank you for taking the trouble to write.

Yours sincerely,

Richard Norton

Richard Norton
Private Office of the
Leader of the Opposition

Mrs W Spink

BEFORE & AFTER

It is interesting to compare the tone of response received from Mrs Thatcher after the election with this letter that was sent to Mrs Spink of Denham Rd on the tenth of April (before the election).



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CUTS

Cuts in government expenditure are threatening our already inadequate fire service. Essex is at present two hundred firemen short and firefighting machines are lying dormant because there are not enough men to man them.

Canvey fireman Bill Deal said;

"If there was a major incident on Canvey the local stations would send in a limited number of machines but the rest would have to come from further afield, like London. The trouble with this is the time factor."

As an example of the manpower shortage, Mr Deal said that Hadleigh, which usually has two machines, has been cut down to one. The three machines at Southend have been cut to two.

Margaret Thatcher has already made it clear in her letter to the resistance group that she intends to take no action to reduce the risks on Canvey. Now her government appear to be increasing the risks in this area by further cutting back on our fire service budget.

TOXIC RELEASE

On the 19th May 1979 at 11am a cloud of poisonous hydrofluoric acid, a chemical that can cause severe burns and is capable of eroding glass, was released at Shell Haven oil refinery. Two hundred people in the main administration block were evacuated.

Hydrofluoric acid (used to break down oil products into detergents) was found leaking from a flange joining two pipes.

A spokesman for Shell said:-

"The area was evacuated as soon as the leak was discovered. Our firefighting people moved in. It took about twenty minutes to bring the situation totally under control."

Shell did not call the Essex fire brigade. A spokesman for the fire brigade said:-

"There is no requirement for Shell to notify us unless there is a fire or a petroleum spillage."

"Whether or not it is right for them to handle an incident of this nature without informing us I am not prepared to comment."

NOTE: Health & Safety Report, page 59.

"...further aspects are still being studied but the present viewpoint adopted is that if the hydrofluoric and hydrocarbon mixture were released through a large breach in the containing vessel or circuit (for example, a hole larger than about 30cm diameter) enough of the hydrofluoric will become airborne to be hazardous at about 7km distance."

The probability of release by fracture of the containing pressure circuit is given as 10^{-4} per year, ie. once every ten-thousand years. The same probability was assigned to the likelihood of a flange leak.

daily local DELIVERIES

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The Lunatic Limit ... on its last legs

the 'cordon sanitaire' goes round the bend.....

The Health and Safety Executive's one kilometre limit was absurdly small. The council have now replaced it with what looks like the route of an alcoholic making his uncertain way from the Lobster Smack to the Waters Edge. This bizarre erratic line, within which residential development has been checked, passes to within half a kilometre of the Methane Terminal.

In their report (published June last year) the Health and Safety Executive recommended that:-

"It would be prudent to maintain a 'Cordon Sanitaire' around the hazardous installations within which further housing development should not be permitted."

They recommended that the aim should be to maintain a separation distance of 1km, preferably from the boundary of each installation.

We have pointed out the absurdity of such a small limit when scientific evidence indicates that areas up to 8km from such installations are at risk (see Newsletter no. 3, 1978).

special treatment

In the council's new policy the 'Cordon Sanitaire' is reduced still further, so that the great majority of the housing is put outside the high risk area. The residents living in the Thames Road area appear to have been singled out for special treatment, being the only ones who live within the council's new danger zone.

In the agenda for the Town Planning meeting of 29th June '79 the following remark was made:-

"....until such time as the government of the day acts decisively to remove or drastically reduce the scale of operations at the Methane Terminal, it is necessary for the council to determine an

interim development control policy for residential development on Canvey Island based on the best professional advice tended to it, namely, the advice of the Health and Safety Executive."

And yet they have ignored this advice.

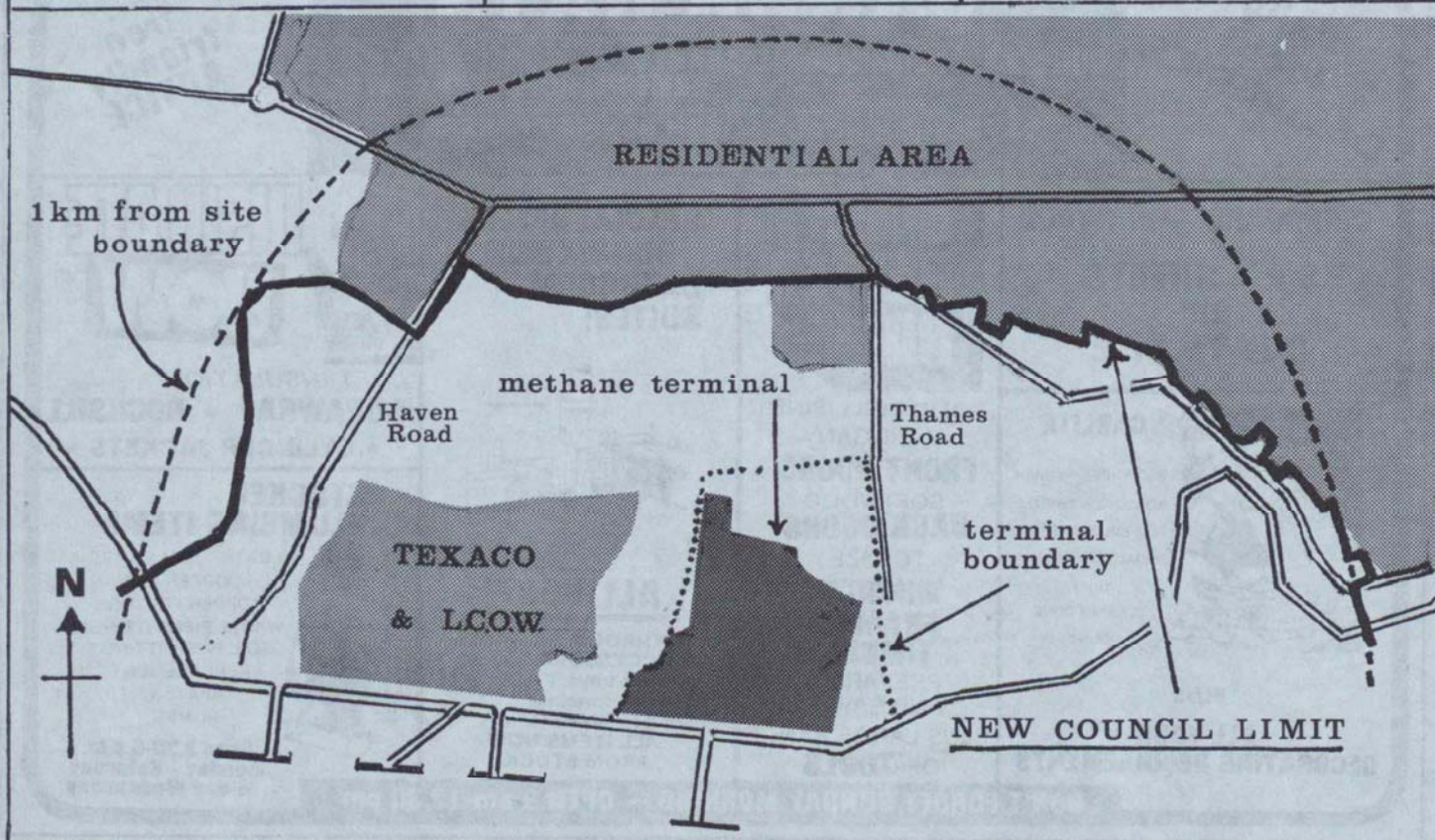
opinion

To reiterate the Group's opinion, the only effective way to remove the hazard is to remove the Methane Terminal. Playing with black lines on ordnance survey maps doesn't make it any safer to live on Canvey.

NOTE:

The members of the Town Planning Committee are;

Mrs Willis (chairman),
Alterman, Ashworth,
Bennett, Mrs Gallienn
Grant, Mrs Howard,
R.C. Howard, Le-Pevre
Millbank, Mitchell
Sanderson, Mrs Shaw,
Sweeting, Webb, Mrs
Whiting, Williams,
Mrs Wood.



COMPETITION

Draw your own Cordon Sanitaire. Prizes will be awarded for the line that least hinders building development.



residential area

Complete the following sentence in not more than ten words;

"I like living in the Cordon Sanitaire because....."

Entries should be sent to the Health and Safety Executive, Baynards House, 1 Chepstow Place, London W2 4TF, where they will be mislaid.

LAND TO THE NORTH

Land to the north of the hazardous installations (see map) is designated for oil storage on the Development Plan. Development of storage or process equipment within this land would mean that the installations would move nearer to residential areas.

Any development control policy should also seek, as a matter of urgency, to redefine the line for industrial development and contain existing installations within their existing perimeter fences. Failure to do this will negate any policy aimed at restricting the movement of housing towards the installations.

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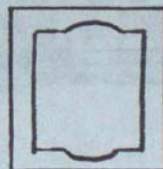
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MASS. SUPPORT .

The resistance group has been in touch with Professor James Fay, of the Massachusetts Institute of Technology, an expert on Liquefied Natural Gas (LNG). His remarks (see letter) on the Health and Safety Report again confirm our view that;

- a) The risks have been underestimated,
- b) The level of risk that is regarded by the Health and Safety Executive as 'acceptable' is, in fact, far above the level that any community should be expected to endure.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
DEPARTMENT OF MECHANICAL ENGINEERING
CAMBRIDGE, MASSACHUSETTS 02139

JAMES A. FAY
PROFESSOR

19 April 1979

Mr. P.J. Haslam
118 Malvern Ave.
Canvey I.
Essex SS8 0NF
ENGLAND

Dear Mr. Haslam:

I regret my failure to reply to your previous letters. For the past year my spare time has been spent on working with a local group, Mass Blast, which is seeking to have the Distrigas LNG terminal in Everett, Mass., closed down. As you can imagine, it has involved numerous hearings before local, state and federal agencies and legislative committees, as well as extensive private meetings with the terminal operator. Progress is slow and minute. In addition, I have helped an environmental group oppose a proposed LNG terminal in New Brunswick, Canada. The application was eventually denied, although not for safety reasons. Nevertheless, it does signify some progress in improving the planning process.

I wish to thank you for sending me the HSE report on Canvey Island. It is the most extensive report of its kind that I have seen. Even so, it suffers from the deficiencies of the typical risk analysis, i.e., an insufficient experimental base for estimating accident probabilities, the use of the author's opinion as a substitute for missing factual information, and the failure to consider unforeseen failure modes. (An example of the latter is the recent Three Mile I. nuclear accident which occurred in a manner not considered in the multi-million dollar Rasmussen risk analysis of nuclear accidents.) Despite its highly likely underestimate of risk, the Canvey I. report estimates a level of risk which seems to me to be well beyond what the public should be asked to endure.

Thank you again for keeping me informed about the news from Canvey I.

Sincerely yours,

James A. Fay
James A. Fay

cc: Canvey I. file

NEW BOOKS

Frozen Fire by Lee Davis

Published 6/79 Friends of the Earth.

A thorough and detailed analysis of the growing LNG industry and the hazards associated with it. Lee Davis completely tears apart all the pro-LNG arguments, economic, political and even energy crisis solving.

The research for this book was obviously so thorough and its conclusions so logical that it is irrefutable.

Lee Davis has been in ~~easy~~ constant touch with the Castle Point Refinery Resistance Group and has spent many hours discussing with us the problems of LNG storage and shipment on her frequent visits to Canvey Island.

Time Bomb by P. van der Linde

with Naomi A. Hintze. Published 3/78 Doubleday.

This factual book, specifically about the problem of LNG on Staten Island, America, is based on Captain van der Linde's personal knowledge of and experience with super-tanker problems and mishaps.

UVCE's by Dr. K. Gugan

A new book has recently been published entitled; 'Unconfined Vapour Cloud Explosions' by Dr Keith Gugan.

In chapter ten, 'Summary and Conclusions', he makes the following relevant points:-

- a) The experience of Unconfined Vapour Cloud Explosions (UVCE's) is limited, although they are now apparently happening at a rate of two to eight

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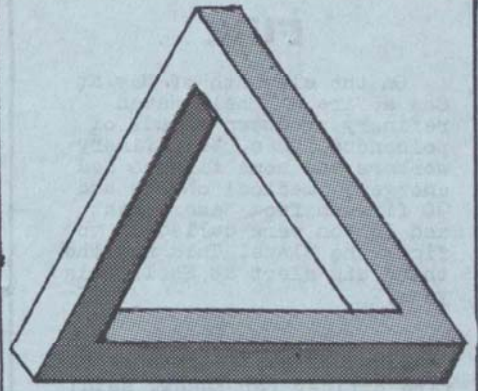
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per annum throughout the world. The recent experience of all vapour cloud ignitions capable, in principle, of causing blast, is that these arise at a rate of three to eleven per annum. The statistics reveal that few major chemical, petrochemical, process or petroleum plants have escaped the possibility or the actuality of an UVCE. The various possible means of transportation also give rise to risk.

incidents, fifty six gave rise to blast and a total of at least 725 fatalities, 385 died in events involving blast. More than half of all the incidents happened in the last twelve years. The trends in frequency, proportion of incidents involving blast, and fatalities in UVCEs are all upwards.

THANKS

We wish to thank John H. Burrows and Sons Ltd (publishers of the 'Evening Echo') for permission to reprint the photograph on our front page.



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b) Since 1921 and to February 1977 there have been at least one hundred incidents potentially capable of involving quantities of flammable material of approximately road tanker proportions or greater.....of the hundred

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FIRE

On the eleventh of May at 8am a fire at Shell Haven refinery produced clouds of poisonous fumes. 40 refinery workers and some firemen had emergency medical checks and 90 firemen from Essex, Kent and London were called in to fight the blaze. This was the third big alert at Shell this year.

John Corley, assistant chief fire officer for Essex, said;

"There was a lot of heat, smoke and toxic gases."

Workers in the building were told to stay clear of the windows in case of a blast.

NOTE: Appendix 5 (p.129) of the Health and Safety report quotes the probability of a 'serious refinery fire' as 10⁻¹ per year, ie. one serious refinery fire every ten years.

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Newsletter produced by Jack Hoy & Steve Mitchell.

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UNITED REFINERIES LIMITED TO BUILD AN
OIL REFINERY ON CANVEY ISLAND

Final Speech of Sir Bernard Braine, D.L., M.P.,
at the Inquiry on Thursday, 3rd July, 1980

JULY 1980

PREFACE

I would like to preface my remarks by expressing my appreciation and that of the people I represent to you, Sir, and to your assessors, for the way in which this Inquiry has been conducted throughout. You cannot have had an easy task. Indeed, I cannot recollect that such an extensive Inquiry, covering not one but a multiplicity of serious risks to the health and safety of a large community, has ever been held before in this country. Your patience, and your concern to ensure that everyone has his say and that what is said is understood, commands our respect and gratitude. Irrespective of the outcome the proceedings have been conducted in a very fair and satisfactory way.

This, at least, may do something to restore the faith of the people of Canvey Island in their belief that if the truth is told, the truth will prevail and justice will be done.

FINAL STATEMENT

1. At the conclusion of the evidence I gave earlier I said that this resumed hearing would be no ordinary Inquiry. The question it would have to decide - "is whether in the pursuit of economic advantage and profit any government or industrial organisation has a prior right to engage in hazardous activity close to a population that derives no direct benefit and is ignorant of the precise danger in which it stands."

At the end of the first part of the hearing in 1975 a clear answer was given to that question. The presiding Inspector recommended that the planning permission given to United Refineries Limited (URL) two years earlier should be revoked.

2. I submit that not only is that recommendation still valid, but that everything that has happened in the intervening five years - the HSE investigation, the growing awareness in this country and abroad of the risks associated with bulk transportation and storage of liquefied gases, the throwing of a "cordon sanitaire" around the Canvey Methane Terminal and the IRA bomb incident early last year - has strengthened it to the point where introducing additional hazards would be an act of criminal folly. It will not have been lost upon all who have attended this present Inquiry that the overwhelming mass of scientific evidence - that of Professors Fay and Rasbash, Mr. Victor Marshall and Dr. Black, supports and underlines that view. What these distinguished experts have said has not been seriously challenged and certainly cannot be ignored.
3. Let me first deal with the HSE Report since its publication was the most important new development to take place following the 1975 recommendation. Unfortunately, this document, while adding to our knowledge of the totality of risk to which the people of Canvey are exposed, has blurred the issue.

4. Leave aside that part of the Report which identified and sought to measure the multiplicity of risks my constituents face. If it had ended there, leaving it to others to judge what should be done to reduce or eliminate an unacceptably high level of risk to health and safety, it would have performed a useful service. It would have confirmed in an authoritative way the fears that have long been expressed by our community. It would have landed the whole problem on the government's desk two years ago. But the Report did not end there and it went on to draw conclusions which bore little or no relation to the massive array of risks it had identified. It was as though it had been compiled by two different sets of people - one, a team of competent and dedicated investigators who were determined to get at the truth and who as far as they were permitted were concerned to show how dangerous the situation was: the other, a group of administrators who were under pressure to get the whole wretched exercise completed as quickly as possible, even if this meant running away from obvious new lines of enquiry. How else can one explain the illogical and irresponsible conclusions of this strange document, namely that it would be safe, after certain improvements had been implemented, to allow oil refinery development to proceed and that there would be no need to remove any existing installation.
5. If it was difficult to understand how such conclusions were reached before this present Inquiry began, it is impossible for any rational person to accept them now in the light of the evidence heard. On the one hand we have learned that some of the assumptions upon which these conclusions were based are unreliable. On the other we have discovered that there is a great deal about the risks to which the people of Canvey are exposed which the Report either considered superficial or did not consider at all.

6. We have heard that there are serious doubts about some of the so-called improvements which the HSE said should be implemented. For example, it seems that the emergency water spray system recommended to limit the escape of ammonia vapour following an accidental spillage is totally impracticable. It is comforting to learn two years after that recommendation was made that Shell UK have decided for reasons of their own to stop handling ammonia at their installation. It seems not unreasonable to assume that a similar system would be equally impracticable to contain an escape of hydrogen fluoride. Yet such systems were advanced as improvements that we could confidently accept since, when taken together with others, they would enable the additional hazard of the URL refinery to be tolerated.

7. Then again, expert evidence has shown that other so-called improvements designed to deal with accidental releases of flammable and toxic materials by constructing walls round the installations are unrealistic. The evidence of Professor Fay and Dr. Black on this was devastating and it seems clear that an entirely new study will have to be undertaken of this particular problem. Professor Fay was also right to challenge the assumption made on pages 30-31 of the Report that if the transshipment of LPG was prohibited from the Occidental/URL jetty the building of the two new oil refineries would not result in a significant additional risk to the people of Canvey and could, therefore, go ahead. He was right to do so because that conclusion begs such obvious questions as (i) what other hazardous products would be handled at the jetty, and (ii) what additional risks would be involved in shipping LPG from some alternative point on the water front. We can look in vain for answers. All that the HSE tells us is that altering the place from which LPG is shipped from the URL refinery could very significantly reduce the risk. It would be recalled that that facile conclusion was blown sky-high by Professor Rasbash on page 2 of his Proof of Evidence. It will also be recalled that both Captain Macmillan and Mr. Ilderton

7. Continued/

speaking with long and intimate experience of the river expressed serious doubts as to the safety of the Occidental/URL jetty having regard to its close proximity to the Mobil No. 4 jetty.

8. I may say in passing that by not calling expert witnesses to refute the statements made about their intended operations URL have protected themselves against cross-examination. From their point of view this may have been a wise move. We cannot know - unless the information is volunteered at this very late hour - how URL propose to conform to the HSE's requirements in regard to the safe handling of LPG or whether, in fact, they have even bothered to negotiate an alternative point for transshipment and to discuss the safety implications with the Port of London Authority. In effect, the HSE have conducted their case for them, both parties hoping perhaps that not too many questions would be asked.
9. It is not only what the Report says on some matters that has been challenged so effectively by expert witnesses which should concern this Inquiry, but what it omitted to say. Indeed, it would be comic, if the matter were not so charged with serious consequences for my constituents, to detail what was left out. Here we have a mammoth study on the environmental safety of a large community, the first ever of its kind. The expertise of no less than thirty engineers, chemists and other specialists was utilised at various stages in the investigation. The cost was in the region of £400,000. Yet within a few minutes of turning over its pages one discovers that the map setting the scene for the reader is incomplete. The Occidental/URL jetty is missing; the Mobil No. 4 jetty, which has been the scene of collisions and other mishaps, is also missing. Between Appendix 9 and 11 there is a gap and it took a Parliamentary Question to elicit that the missing Appendix 10 was a paper on "The Possibilities and Consequences of an Unconfined Explosion

9. Continued/

involving LNG". Evidence has been given that this was withdrawn by British Gas with no explanation asked for or given. However, we have just learned from Mr. Hearfield's evidence that British Gas "were unaware of the way the subject was to be treated in the Report and it could be taken out of context". Whatever that may mean we have had to wait two years to hear it! We may perhaps surmise that British Gas discovered at the eleventh hour that in the light of new information from American sources their paper was unsound.

10. I shall return to the extraordinary behaviour of British Gas at a later stage. Suffice it for me to say that the distinct impression is given both by the Report and what happened at the Methane Terminal up to the February of this year when the HSE's regional office took firm and decisive action over the neglect of certain elementary safety precautions, that British Gas has resented any intrusion into its affairs. As the Terminal constitutes, in the view of the HSE, at least one-third of the total potential risk to my constituents British Gas is going to have to accept intrusion from now on whether it likes it or not.
11. Because of this attitude on the part of British Gas it is not surprising that the Report fails to deal effectively with the poor design and operational efficiency of the in-ground storage at the Terminal and the anxieties to which this has given rise from time-to-time. As I said in my evidence earlier although the HSE later became aware of the implications it is quite extraordinary that British Gas kept the investigating team in ignorance of the fact that fluctuations in the level of liquefied gas in these storage pits had caused consultants to be engaged in 1969 in order to solve the problem. Indeed, this in-ground storage has

11. Continued/

never worked as its designers intended and British Gas have recently announced that it will be decommissioned at some time in the future, although it is their intention to continue using the six above-ground tanks indefinitely. Whether this in-ground system carries with it serious risks it is impossible to say; the matter is not discussed in the Report. What does emerge, however, is that taken with the failure of the HSE to comprehend, until quite late in the day, that the safety and alarm systems of the above-ground tanks were suspect the absence of detailed examination of this aspect during the investigation suggests that the HSE were utterly dependent on British Gas for coming to conclusions about the internal safe working of the Terminal.

12. Then again, it is clear that insufficient attention was paid in the Report to what one might describe as mobile hazards as opposed to the static hazards represented by the installations themselves. Evidence has been given showing that very little attention was paid by the investigating team to the possibility of collisions in the river or of accidents at the jetties involving ships carrying hazardous cargoes. There was certainly no proper consultation with the pilotage authorities who at least understand the river and have complained for years about deteriorating standards of navigation.

13. It has taken this Inquiry to establish that while the investigating team considered a wide range of accidents, any one of which might trigger off a chain of events leading to a major disaster, they failed to consider a number of other situations such as malicious damage or sabotage which could produce the same result. Alas! within a few months of the Report's publication we were reminded by a terrorist bomb explosion of the harsh realities of the world in which we live.

14. The investigating team also ignored the "domino effect" - consideration of which one would have thought would have loomed large in a situation where so many static and mobile hazards are concentrated in a relatively small area close to a large residential population.

15. It must have come as a surprise to this Inquiry to learn that the investigating team were not specifically aware of certain serious accidents involving ships carrying hazardous cargoes in the decade before they began their investigations, which had seriously disturbed our community at the time, had been featured in the press, had led in some instances to prosecutions in the Courts and had been the subject of repeated references in Parliament. This is surprising since HSE Document 12 tells us that the PLA advised the team that in the period 1965 - 1976 there were no less than 121 accidents involving shipping in the Thames of which thirty accidents were of moderate severity. However, the team considered that incidents before 1976 were "outside the period of interest". What an extraordinary conclusion! Not for my constituents, not for the pilots on the river, but for those charged by the government of the day with the duty of investigating the possibility of accidents arising from bad navigation practices such accidents apparently were not thought to be relevant if they happened before the investigation began. One might well ask how the probability of any kind of accident can be properly assessed unless the historical record is examined. But then one might ask a host of other questions about the way in which this extraordinary investigation was conducted and find no convincing answers.

16. HSE Document 12 makes another significant admission. No consideration was given by the investigating team to "emergency jettison" at sea, apparently because this was not considered applicable to the purpose-built vessels which carry cargoes of 12,000 tons of LNG to Canvey every week. Are we to assume from this that no LNG carrier will ever be involved in a collision of such severity that it will be necessary to jettison its

16. Continued/

cargo in order to avoid a catastrophe? Surely not. Captain Leighton in his evidence did not exclude the possibility and gave an explicit assurance that the PLA would not permit a damaged carrier to enter the Port. One would hope not! But in saying this he was not telling us anything new. The PLA have long had the power to prohibit entry into the Thames of any vessel which is, or likely to become, a danger to other vessels. That power is contained in the Port of London Act 1968. What concerns my constituents, however, and what should concern this Inquiry, is what would happen if a collision involving a LNG carrier took place within the port area, close to the Essex shore, or as the carrier swings in to berth at the Canvey Terminal jetty. Why was this scenario not investigated? The truth is, as the Department of Trade have advised me, there is no way of decanting the lethal cargo of such a vessel damaged within the port save by unloading it at the Canvey Terminal. The facilities for doing otherwise simply do not exist in the Thames Estuary. Both the HSE and the PLA have ducked the question.

17. Should we not also be concerned that in the United States, where LNG is imported on a much larger scale than here, far stricter rules seem to govern the entry of LNG carriers into port areas. We saw a film which made the point clearly. What then can we make of the observation by certain witnesses that Canvey is not the Port of Boston? Of course it is not, but in the context of a cataclysmic fire and explosion close to or on the Island itself there are 34,000 people who would be in mortal danger.

18. Those of us who live on Canvey Island or close by know that in the narrow waters of the Estuary, where the channel runs close to the Essex shore, we have had several narrow escapes. Witnesses have revealed that down the years there have been numerous collisions and spillages of volatile and dangerous

18. Continued/

substances. We recall the "Monte Ulia" incident on 26th July 1970 which literally set the Thames on fire. We remember the LNG carrier "Aries" breaking away from its moorings at the Terminal in storm-force winds on 11th January 1978. The PLA's regulations are not the word of God. These are repeatedly broken mainly, it must be said, by foreign vessels. Nor is the judgement of the PLA beyond all question. The Inquiry has been told that its initial advice on safety was to restrict the speed of all vessels passing Canvey to eight knots with the not unexpected result that this led to bunching, thereby increasing the risk of collisions.

19. What comfort are we to draw from the fact adduced by Captain Leighton that reported casualties in the river fell from forty-six in the five years 1970-74 to forty-one in 1975-79? The reduction is very small, but in any event the comparison to be meaningful has to be related to the total number of ship movements in both periods. What is more to the point is that if URL is allowed to build its refinery there will be a substantial increase in the movement of ships carrying hazardous cargoes in the vicinity of Canvey. I submit that it is high time that this official complacency is swept away and that the regulations governing navigation discipline in the narrow waters of the Estuary are tightened.

20. The PLA, of course, is not an unbiased witness, its interest lies in attracting additional traffic into the river. It cannot be criticised on that account, but in the context of this Inquiry I prefer, and I would hope that the Inspector prefers, the evidence of Captain Macmillan who spoke with the authority of an experienced pilot whose function is to bring ships to a safe berth and is able to do so successfully because he knows every inch of the river. It is strange that in considering the vital question of shipping hazards the HSE relied solely on the PLA for advice and made no approach to any serving pilot or to the London Pilotage Committee or to

20. Continued/

Trinity House. Had it done so it might have been less complacent about the risks and certainly more cautious about adding to them.

21. I gave several examples in my evidence of the failure of the Report to evaluate the full measure of the risks to which my constituents are exposed. The most serious omission in my opinion is the way in which the likely human reaction in the event of a major accident involving fire and explosion or the release of toxic clouds or both has been totally ignored, although this might well have a bearing on the number of fatalities. The omission is all the more inexplicable since Canvey is an Island and panic flight would present acute problems, far greater than might be expected in an urban situation on the mainland where flight from a danger area whether on foot or by car would normally take place in several directions simultaneously. On Canvey the only escape route is one that would have to be used by the rescue services coming from the mainland. An orderly evacuation would be well-nigh impossible.

22. In this connection the evidence of Mr. Victor Marshall is of crucial importance, especially his assertion that the Report made no attempt to consider the effect of an explosion similar to that which destroyed the French oil tanker "Betelgeuse" at Bantry Bay in January last year and the possibility that this might lead to a fire storm. It is a serious criticism of the Report that it gave no thought whatsoever to the prospect of a cataclysmic fire of such proportions that the upward convection currents would induce hurricane force winds which then blew loose combustible material into fire, spreading it, increasing its intensity, and making fire fighting impossible, with all this happening in an area where there may be as much as five million tons of petroleum products and over 130,000 tons of liquefied gases.

23. Against this background, where the possibility of fire and explosion could spring from a number of sources, it would surely be wickedly irresponsible to permit any additional hazard to be brought to Canvey. But that is only half the conclusion that one draws from examining what the HSE Report says and what it does not say; the other half is that the existing hazards of fire and explosion must be sharply reduced. The long years of anxiety which my constituents have endured on this score must in justice and decency be brought to an end.
24. I now turn from what the HSE Report says and does not say to consider what has happened since its publication. It will be recalled that the investigation revealed that at none of the seven hazardous installations in the Canvey and Thurrock area had any attempt been made to examine and document the possibility of accidents involving the surrounding community. That in itself was a serious evasion by the management concerned of the duty laid upon them by Section 3 of the Health and Safety at Work Act 1974 to conduct their activities in such a way as to ensure, so far as it is reasonably practical, that the community outside their premises is not exposed to risks to health and safety. Such neglect calls for severe censure. But it would have been reasonable to expect that having discovered this serious gap in safety awareness the HSE would have been able to ensure by now that the situation was remedied. It has considerable powers and we are surely entitled to expect that it would use them.
25. In this context let us consider what happened at the British Gas Terminal which, according to the HSE, accounts for one third of the total potential risk to the people of Canvey. In the autumn of 1978, a few months after the publication of their Report, the HSE felt it necessary to advise a worried Castle Point District Council that it would be prudent for them not to authorise any new planning permissions within a radius of one kilometre of the Methane Terminal.
26. I do not mean to criticise the HSE for issuing a warning. It was surely right to recognise that a danger existed for the

26. Continued/

residents. But in serving notice on the 8,000 people who lived within the one kilometre radius that their homes were in a danger area, acute anxiety was caused. Parents and teachers of pupils at four schools were alarmed. The hopes of owners of land ripe for development or of those planning to build a new home were immediately blighted. And all this was inflicted without any redress, for in this situation there is no provision for compensation under the law.

27. It subsequently turned out that the HSE advice was misleading for a number of reasons. For example, if the danger sprang from the possibility of a spillage of liquefied gas leading to the formation of a gas cloud which then ignited over the residential area the danger zone could extend considerably further than one kilometre. I will return to this later. But the irony of the situation was that at the time the HSE advise was given risks were being taken by the Terminal management, quite unbeknown to the HSE or to the local authority, with the electrically operated alarm and safety systems of their six above-ground LNG tanks. My constituents could be caused acute anxieties, they could be disadvantaged and pushed around as a result of well-meaning HSE advice but those who had caused the danger in the first place could behave irresponsibly, even adding to the danger, and nobody outside was any the wiser.

28. Indeed, the Inquiry has heard how over a year was to elapse before the HSE, the public watchdog where safety is concerned, discovered what had been happening inside the Terminal, and then only because a former employee of British Gas decided to lay the information. If he had not come forward it is conceivable that the risk-taking would have continued. It is to the credit of the regional staff of the HSE that they acted immediately and it is on record that they found that the high level alarms in all six tanks were defective and the high level trips were unreliable and that three enforcement notices were promptly served.

29. It is shameful that weeks after these events the spokesmen of British Gas have continued to deny that any risks were taken. Mr. Hearfield told us earlier today that there has always been effective supervision of electrical work at the Terminal, although not always by a qualified engineer on the site, but it is significant that he did not deny the allegations of neglect by the electrical engineer who worked on the site between September 1978 and August 1979 and the Inquiry will draw its own conclusions as to the adequacy of the supervision at other times.

In passing I should also mention that Mr. Hearfield referred to that part of the HSE letter of 14th April/¹⁹⁸⁰ addressed to me which indicated that on 13th March the electrical equipment was considered to be well maintained. One would hope so. Ironically that was, in fact, a tribute to the electrical engineer who had tried to remedy the defects between September 1978 and August 1979 and in part to the action taken by the HSE from February 1980 onwards. The fact remains that British Gas stand condemned for the neglect of elementary safety precautions on the above-ground tanks prior to the serving of the enforcement notices.

30. I understand that British Gas is now appealing against the enforcement notices. I must make it plain that the people of Canvey have had enough. If British Gas cannot comply properly with the requirements of the HSE then the Terminal should be closed forthwith. In any event with the knowledge that we now possess of the properties of LNG this hazardous material should not be handled or stored close to any residential areas and arrangements should be put in hand to remove the Terminal as soon as possible.
31. In the meantime, however, as long as the Terminal remains on Canvey there can be no question of adding additional hazards such as the URL refinery to a situation which as a result of past stupidity and neglect a whole community has been trapped in a web of unacceptable risks. By the same token the extraordinary proposal to reactivate the LPG pipeline which we heard

31. Continued/

about for the first time this morning is one on which I have no doubt the local authority and the residents will express strong objections. I must also make it plain that even if the Methane Terminal is removed neither the people of Canvey nor the local authority will accept that an oil refinery can ever be built on the Island.

32. Despite the criticisms I have made of the HSE Report I think it is only fair to say that if the HSE itself did not exist the facts of our situation on Canvey alone would require it to be invented. I have no criticism whatsoever to make of the technical officers in the field. Indeed, they are fully occupied. I am advised that the small East Anglian Area staff of twenty-six have to cover no less than 18,000 industrial premises, and that last year they investigated 448 non-fatal accidents out of a reported 8,750, served 189 enforcement notices and 107 summonses, dealt with 409 complaints from the public, and examined 607 planning applications. It follows that if the high expectations of improved health and safety in the work place which the Health and Safety at Work Act encouraged are to be fulfilled then the nation must ensure that there are enough people of the right calibre to carry out these duties without fear or favour.

33. I said earlier that the "cordon sanitaire" advice of the HSE was misleading for various reasons. I gave one reason in my evidence, namely that there was no scientific basis for limiting the restriction to a distance of one kilometre from the Terminal, since the danger could well extend for several kilometres. Nobody seriously disputes this. But there is another reason for considering that the whole approach of the HSE to our problem has been unsound and here the fault lies less with them than with those who framed the law under which they are obliged to operate.

34. It is my firm belief that it is morally wrong and a denial of natural justice to arbitrarily impose a planning blight upon people who derive no benefit from living close to a hazardous installation and have no control over its operations or even knowledge of them. What sort of law is it that takes away a man's right to the enjoyment of his home, which deprives him of the expectation that he will be allowed to develop his land, and to do this without compensation? If the activities of the Methane Terminal are of such a nature that the HSE considers that no newcomer should be permitted to live within one or two kilometres or more then either the danger must be removed or those who own and operate the hazardous installation must assume full responsibility for compensating residents upon whose interests they are inflicting an injury. I can think of no better way of making organisations like British Gas more fully aware of their responsibilities for the safety of the community outside their premises.
35. I have spoken at this Inquiry in the hope that it will mark the end of Canvey's long and bitter fifteen year old struggle against the piecemeal destruction of its environment. For the first time expert witnesses have come together to testify publicly that the level of risk my constituents face is far too high and must be reduced. They have argued the matter authoritatively and in scientific terms which I cannot hope to emulate. By how much the risks can and should be reduced is a matter on which the Inspector will express a judgement, but I would hope that in the light of the evidence he has heard he will feel able to make the following recommendations:
- i) that planning permission for the URL refinery be revoked.
 - ii) that in the event of any compensation being awarded to URL the burden should in no way fall upon local ratepayers who have been resolutely opposed to development of this kind for over fifteen years, but have had it forced upon them by central government.

35. Continued/

- iii) that on no account should the Occidental refinery project which was written off by the company in 1978 be revived.
- iv) that steps should be taken to examine the feasibility of developing both the URL and Occidental sites for non-hazardous industrial purposes.
- v) that British Gas should be directed to phase down its operations on Canvey and to relocate them in an area safely distant from residential population.
- vi) that consideration should be given to tightening the rules governing the movement of shipping in the Thames Estuary, especially in the vicinity of the Canvey/Thurrock petro-chemical installations.
- vii) that an inter-departmental enquiry should be set up to consider the possibility of hazardous industry being made responsible for the compensation of individual persons whose homes or businesses are blighted by its activities, as has been the case on Canvey.
- viii) that a review should be undertaken by the Secretary of State for Employment of both the powers of the HSE under the Health and Safety at Work Act 1974 and its resources to ensure swifter compliance with safety requirements than is currently feasible.
- ix) that HSE regulations already in draft requiring installations engaged in storing or processing hazardous materials to prepare a hazard analysis of their^{own} operations in relation to neighbouring installations and the general public should be brought before Parliament as a matter of urgency.

36. That is the case for the people of Canvey against all those in authority who over the years have been deaf to our protests and have thereby created a situation of risk to health and safety, indeed to life itself, which no community anywhere should be asked to accept. We are confident that the facts, now laid bare, will lead the Inspector to the overwhelming conclusion that no additional hazard can be tolerated on this small island and that the level of risk that already exists should be reduced sharply and without delay.

RESUMED INQUIRY INTO THE DESIRABILITY OF REVOKING
PLANNING PERMISSION GIVEN TO UNITED REFINERIES LIMITED
TO BUILD AN OIL REFINERY ON CANVEY ISLAND

At the Inquiry which will open at the Paddocks,
Canvey Island on 5th June, 1980
Sir Bernard Braine, D.L., M.P., will say:

MAY, 1980

1. INTRODUCTION

Ben Riddle M.P.

1.1. I am the Member of Parliament for Essex South East and have represented the area affected by the subject of this Inquiry continuously for thirty years. For over half that period I have been engaged in a running battle with successive governments over the safety of my constituents on Canvey Island. Nowhere else in Britain is so large a community exposed to so unique, so massive and so varied a concentration of risks to their health and safety from hazardous industrial activity.

1.2. The situation is unique because Canvey is an island which at high spring tide is about five feet below sea level. It suffered grievously in the great flood disaster in 1953 when many lives were lost and virtually the whole population had to be evacuated. At that time there was only one escape route to the mainland; now there are two, but these converge at a single roundabout.

1.3. The seven existing high risk installations in the area are not only hazardous in themselves, but are made more so by being close to one another. The three installations on the island itself - the British Gas Corporation Methane Terminal, the oil storage depot of Texaco Company Limited and the petro-chemical storage at London and Coastal Oil Wharves Limited - are not only close to one another, and linked to the natural gas and oil pipelines but are adjacent to the sea wall which, if breached by a major explosion, might also lead to flooding. The prevailing winds are south-westerly and, therefore, blow over the installations towards the residential areas of Canvey and the Essex mainland.

1.4. Such, however, is the multiplicity of risks there can be no clear plan for evacuation in the event of a major disaster arising from one incident triggering off others. If tidal flooding were ever threatened again there would normally be enough warning to effect an orderly evacuation, but should the threat come from a sudden breach of the sea wall by a massive explosion, or from a release of hydrogen fluoride or ammonia from one of the Thurrock installations being blown by the prevailing wind over the islands

1.4. (Contd)

escape route, or from a major spillage of liquefied gas leading to the formation and ignition of a cloud, there would be little or no warning, evacuation would be impossible and the consequences could be appalling.

1.5. Both I and my constituents have been strongly opposed from the beginning to oil refinery development on the island with the consequent increase in the movement of ships carrying hazardous cargoes to and from its jetties and of tanker vehicles on its roads. Our views are fully supported by the elected local authority. Nevertheless, despite our opposition, by 1973 planning permission had been given, not only to United Refineries Limited (URL), but to the Occidental Oil Company as well.

1.6. The question of revoking the planning permission for URL goes to the heart of our problem since until about 1975 the view of successive governments was that if the national economic interest required additional oil refinery capacity then this should take precedence over local objections, even if these were based upon considerations of health and safety. In three Public Inquiries held into URL's applications for planning permission the presiding Inspector recommended refusal, but in two of these was overruled by the government of the day. Indeed, the issue was discussed at the highest level. A pathetic story is told by the late Mr. Richard Crossman in "The Diaries of a Cabinet Minister" of how he wanted to accept the advice of his Inspector following the first Inquiry in 1965, but was bullied by the Civil Service and a majority in the Cabinet into overruling him.

1.7. Until July 1974, when I ventilated our grievance in considerable detail in Parliament, it is possible to argue that the tendency in Whitehall to underestimate the risks to Canvey stemmed from genuine ignorance of the potential dangers of handling and storing liquefied gases. There was some excuse for this since very little research had been done on the subject. As Dr. Edward

1.7. (Contd)

Teller, the distinguished American nuclear scientist, told a California State Legislature inquiry as recently as 1976, technical knowledge of possible accidents with liquefied natural gas (LNG) had then reached about the same point as it had for the nuclear reactor industry twenty-five years earlier and the total amount of money spent on safety considerations was about one percent of that spent on the safety of nuclear reactors. He added that "if a decision on LNG safety had to be taken today it would be necessary to make a guess".

1.8. As I shall show the position four years later is that we are still making guesses. On the other hand with such knowledge as we do now possess it would be sheer madness to add any new industrial hazard to those my constituents already face, even if all the improvements envisaged in the HSE Report were implemented which is still far from the case.

1.9. Following my protest in Parliament in 1974 the then Secretary of State for the Environment ordered an Exploratory Inquiry to investigate the possibility of the planning permission given to URL in 1973 being revoked. That Inquiry opened in March 1975 and the Inspector who conducted it recommended revocation. Everything that has happened since underlines the good sense of his decision. Indeed our perception of some of the risks to Canvey's safety - the disaster potential of liquefied gases, the dangers from faulty handling of ships close to jetties, the lack of facilities to deal with tankers involved in collisions and the risk of human error - have been greatly sharpened.

1.10. I submit therefore that not only should the planning permission for the proposed URL refinery be revoked, but it should be made plain that the site of the abandoned Occidental refinery next door should not be used for any hazardous industrial

1.10. (Contd)

activity or storage. It would be utterly wrong to revoke planning permission for one refinery and then to permit a hazardous use on an adjoining site.

2. DEVELOPMENT SINCE THE 1975 INQUIRY

2.1. In my evidence at the Exploratory Inquiry in 1975 I set out the history of the matter up till then and demonstrated the weaknesses in the law in regard to both planning and safety which I felt should be of concern to all communities obliged to live in close proximity to hazardous industry.

2.2. There is nothing that I said then that I would wish to alter, save that there have been certain changes which taken together make it all the more imperative now to ^{remove} the blight which the planning permissions given to URL and ^{in 1973} Occidental Oil in ¹⁹⁷¹ ~~1973~~ have brought to an already endangered community.

2.3. As to these changes, when I gave evidence in 1975 the population of Canvey numbered 31,500; it is now 34,000, despite restrictions on housing development. Thus the number of families at risk has been increased, although the access routes to the mainland remain virtually unchanged. It follows that in the event of an emergency the problems of rescue and evacuation would be greater rather than smaller.

2.4. In my evidence in 1975 I said that there was a total at any one time of up to 121.2 million gallons of highly inflammable and potentially explosive material stored on Canvey relatively close to people's homes, and that the operations of the two proposed oil refineries would cause that figure to increase three-fold to 365 million gallons. These figures need to be revised. As at 2nd April this year the total amount of

2.4. (Contd)

hazardous material for which licences have been given at the existing installations on the island is slightly down to 110.4 million gallons.

2.5. As to the area as a whole we can now leave the Occidental refinery out of account provided the site is not used for some other hazardous purpose. There may have been other reductions partly because the Essex County Council, as licencing authority, has limited its licence to British Gas to the actual quantities now stored at the Terminal, and partly because the HSE, for reasons which I will make plain later, are requiring British Gas to reduce the level of LNG in the above-ground tanks for safety reasons.

2.6. Against this in the Thurrock area permission has been given to Mobil Oil to build an additional catalytic cracking plant with a capacity of 1.75 million tonnes per annum and the Shell refinery has been upgraded. There may have been other changes in Thurrock which will eventually add to the existing quantities of flammable and toxic materials. However, it is still the case that the total quantities involved remain very large.

2.7. Again in my evidence at the 1975 Inquiry I said that over the ten year period 1964-1974 there had been 120 fires and other accidents in the high risk installations in the area later to be investigated by the HSE requiring the attendance of the Essex Fire Brigade. Since then there have been further fires and other incidents, most of which have taken place at the two Thurrock oil refineries. On Canvey we have had a large spillage of petrol and ships colliding with jetties close to the installations. There have been only minor alterations in the arrangements for fire cover.

2.8. I also included in my evidence in 1975 details of the impact increased tanker traffic might have upon navigation risks. Instances of bad navigation practices have continued despite efforts to tighten up discipline.

2.9. There have also been two significant developments which have increased our knowledge and understanding of the risks which strengthens the case for revocation of the planning permission given to URL, namely -

- (a) the publication of the Report of the HSE investigation in June 1978, and
- (b) the "cordon sanitaire" advice given by the HSE to the Castle Point District Council on 22nd September 1978.

2.10. Before considering the first of these two developments there is a general observation I wish to make. The Inspector at the 1975 Inquiry recommended that the newly established Health and Safety Commission should be asked to investigate the totality of risk to the islanders both from the existing industrial hazards on Canvey and the neighbouring part of Thurrock, and the proposed new installations such as the URL refinery. The government accepted that recommendation and the Commission ordered the HSE to carry out an investigation.

2.11. The HSE investigation took over two years to complete and its findings were published in June 1978. It has taken a further two years (five in all since the Inspector made his firm recommendation in 1975 about revocation) for this present Inquiry to be resumed. Leaving aside the actual time taken by the investigation itself the delays in coming to grips with a matter so closely concerning the safety of a whole community are, in my view, a national disgrace and I wish to put this on record now so that the authorities are left in no doubt as to the strength of feeling on the subject in South East Essex, and on Canvey in particular.

2.11. (Contd)

I hope that whatever recommendations are made at the end of the present hearing the Inspector may care to reflect in his report the extraordinary slothfulness and lack of consideration for my constituents of those responsible, and makes some suitable recommendation that in future it should be axiomatic that questions of environmental safety are dealt with more speedily.

3. THE HSE REPORT ON CANVEY

3.1. The HSE were instructed by the Commission to carry out "an investigation of the risks to people living in and around Canvey Island from the existing and proposed industrial activities in the area". Although this present Inquiry is limited to considering whether planning permission for the URL refinery should be revoked it was clear that the HSE investigation had also to take into account risks arising from the Occidental refinery then under construction and for which planning permission had been given in 1971. It is purely fortuitous that in 1978 Occidental decided to abandon their project and have since been trying to dispose of the site.

3.2. The HSE Report not only confirmed all our worst fears about the existing hazards, but revealed others hitherto unknown to us, such as the possibility of accidents involving spillages of ammonia and hydrogen fluoride. It showed that the two refineries for which planning permission had been given in the early seventies would, as originally planned, add significantly to the existing hazards. For full measure it also showed that significant risks had been taken by the management of some of the installations with the safety of my constituents.

3.3. It is essential, if we are to judge whether the planning permission for URL should be given, to consider precisely what the Report had to say about the existing hazards, and also what it left out, i.e.:-

- (a) It made plain that the risks from gas, oil and chemical installations already operating in the area, extending for nine miles from Stanford-le-Hope in the west to Canvey in the east, are undeniable, unacceptable and their level must be reduced.
- (b) It admitted that given the huge concentration of dangerous materials stored and handled on Canvey in the event of a large explosion disrupting the storage tanks, burning liquids could reach people's homes via drainage channels, spreading fire and destruction.
- (c) It expressed serious doubts about the large quantities of liquefied petroleum gas (LPG) and liquefied natural gas (LNG) transhipped and stored at the British Gas Methane Terminal close to a residential population.
- (d) It described the possibilities of LPG escaping from tanks at several installations forming a cloud of flammable mixture which could ignite and explode, causing casualties.
- (e) It admitted the possibility of a spillage of LNG causing a cloud which might drift towards residential areas before ignition either as a result of an accident on shore or following a collision between an LNG tanker and another vessel in the Estuary or at the jetties.

3.3. (Contd)

- (f) It warned that if an accidental release of gas took place no action whatsoever could be taken to lessen the probability of cataclysmic fire and explosion leading to casualties.
- (g) It showed that the earlier assumptions made about the behaviour of escaping ammonia were wrong and that given certain weather conditions a spillage could kill people if prompt evacuation could not be organised.
- (h) It drew attention to the network of gas and oil pipes at the installations and when one recalls how the above-ground explosion at Flixborough fractured below-ground pipes it is not difficult to see how a veritable holocaust could be created if this happened at Canvey.
- (i) It listed a miscellany of other dangers, such as an accidental release of highly toxic hydrogen fluoride from the Thurrock refineries (incidentally oil refinery development on Canvey would bring additional hydrogen fluoride storage with it). It described how a storage tank could blow up and how metal splinters might pierce neighbouring tanks and pipes triggering off a train of disaster. For full measure it mentioned the possibility of an explosion involving vessels loading TNT and ammunition at the Chapman Anchorage off the eastern tip of the island.
- (j) It revealed that management at none of the installations in the area had made any attempt to examine and document the possibility of accidents involving the surrounding community.

3.4. The Report made a number of practical suggestions for reducing this terrifying array of risks. It expressed the hope that once these had been implemented the risks would be reduced by at least 50%, perhaps by 75%. If we are to take these figures on trust then even after improvements have been made the people of Canvey will still face above average risks to their safety.

3.5. There can be no quarrel with the way in which these risks were identified by the HSE. However, the Report totally failed to convince public opinion that its conclusions matched the scale and multiplicity of the risks. Leading experts, such as Professor D. J. Rasbash of the Department of Fire Safety Engineering at the University of Edinburgh and Professor ^{Janos} James Fay of the Massachusetts Institute of Technology, have stated that the people of Canvey are subject to societal risks exceeding those of any other community in Britain by many orders of magnitude. Moreover they do not share the view of the HSE that the real risks are much less than the estimated risks. It gives no confidence whatsoever to persons who are obliged to live with such risks to be told by the HSE that despite the dangers identified in the Report the probabilities of people being killed or injured "are likely to have been somewhat overestimated".

3.6. It is not surprising, therefore, that on 26th June 1978 the authors of the Report, facing the largest public meeting ever to be held on Canvey, totally failed to convince the audience that further oil refinery developments would not significantly add to the existing risks. At its conclusion the meeting passed a resolution rejecting this notion and asking me to raise the matter with the government. On 27th June I wrote as follows to the Prime Minister, Mr. James Callaghan, -

"The anger and frustration of the people of Canvey and neighbouring South Benfleet over the way in which their health and safety has been persistently ignored

3.6. (Contd)

in the past by piecemeal planning decisions, and in their view is now to be compromised in the future, was made very clear. The fact that the Report recommends measures which could reduce the totality of risk by 50 per cent or more is fully appreciated, but there is not a single one of my constituents who believes that, in the face of what the Report says about the risks, the government has any right to permit oil refinery development to take place, even after the suggested improvements have been made."

I concluded:

"I beg of you to intervene to see that commonsense prevails."

3.7. On 17th July, 1978 the Castle Point District Council declared its continued opposition to any refinery development on the island whatsoever and called upon the Secretary of State to revoke the planning permission granted to URL.

3.8. I submit that these reactions were fully justified and I will show why. While the Report had undoubtedly performed a useful service in identifying the risks it displayed, in my view, serious weaknesses, i.e.:-

- (a) Its methodology was wrong for it assumed levels of acceptability of risk to the residential population which simply do not stand up to analysis. I will deal with this separately and in greater detail for it lies at the heart of the case against adding any additional hazards to those already concerning my constituents.

3.8. (Contd)

- (b) Aside from any error in calculating what is an acceptable level of risk the Report bears all the marks of a task not completed; being firm on some points, weak and indecisive on others, and making no reference at all to certain matters which are nevertheless of great relevance and importance.
- (b) In the autumn of 1977, a year after the investigation had begun, I was informed by the HSE that the Report was virtually complete. At that time, however, I began an independent inquiry of my own and when I put a series of detailed questions to British Gas about safety at the Terminal it was admitted by the HSE that these went beyond their own enquiries. This may or may not have caused them to look more deeply at this particular hazard, but whatever the truth the Report, which had been expected at the end of 1977, was not published until June 1978. Even then it had all the marks of being rushed through and edited in a hurry. For example, a crucially important jetty at Hole Haven where several accidents have taken place, is not marked on the accompanying map. Appendix 10 is missing and I was obliged to ask a Parliamentary Question to establish that this was a paper on "The Possibilities and Consequences of an Unconfined Explosion Involving LNG". The paper had been prepared by British Gas; it was on a highly relevant subject. Why was it omitted? No reason has ever been given.

3.8. (Contd)

- (c) The Report does not give proper attention to the poor design and operational efficiency of the in-ground storage at the Terminal and the anxieties to which this has given rise from time to time. Although the HSE are now fully aware of the implications it seems that British Gas kept the investigating team in ignorance of the fact that fluctuations in the levels of liquefied gas in these storage pits caused consultants to be engaged in 1969 in order to solve the problem. This storage has never worked as its designers intended and British Gas have recently announced that it will be decommissioned in the next few years, although they intend to continue using the above-ground storage.
- (d) Inexplicably the Report leaves out of account the possibility of sabotage leading to a catastrophic disaster, although similar reports in the United States consider this to be a factor of great importance. It was as though to underline the omission and to emphasise the vulnerability of our situation that IRA terrorists exploded a bomb ^{against} ~~in~~ an empty kerosene tank at the Texaco Oil Depot on 17th January 1979.
- (e) The Report ignores the possibility of the vapour from spillages affecting workers in adjacent installations and dismisses the possibility of a "domino effect".
- (f) The Report fails to deal adequately with the dangers posed by ships carrying hazardous cargoes being involved in collisions. There appears to have been no consultation with

3.8. (Contd)

- (f) professional pilots who fully understand the problem. One serious gap in our safety arrangements is not mentioned at all. I elicited from the Department of Trade last year that there are no facilities in the Thames Estuary for decanting the cargo of an LNG tanker if it were to become involved in a serious accident, either fire and explosion aboard or a collision, save by bringing it into the Canvey terminal. This is a new dimension of hazard which shows how necessary it is not to permit any further hazardous industrial activity on Canvey which would add to the number of movements of ships carrying hazardous cargoes.
- (g) The Report is unconvincing and incomplete on the scale of risks. While accepting that the islanders are many more times at risk than any other community in the land and showing as we might expect, that those living closest to the existing installations are most at risk, the Report goes on to say in Annex 2, page 32, that the figures "reflect the fact that if the two proposed refineries were constructed on Canvey Island any release of LPG from the Mobil refinery would almost certainly be ignited as it passed over." This statement is no doubt inserted in order to reassure the residents that such a release would be ignited before it reached them from the west, although that implies the destruction of one or both of the two proposed refineries and heavy casualties among their employees. What would happen, however, if there was

3.8. (Contd)

- (g) a release of LPG (or for that matter LNG) from the Methane Terminal or from a damaged tanker in the Estuary with the resultant gas cloud moving towards the proposed refineries from the east. Would not ignition cause a flash back to the source of the release, causing massive destruction and heavy casualties in that part of the residential area covered by the cloud? If the URL refinery flares could ignite gas clouds from the west, equally they could ignite them from any direction.
- (h) The Report underestimates the number of people at risk any way. On page 2 it puts the residential population of Canvey at about 33,000. This has now grown to 34,000, but in addition there are over 9,000 holiday-makers in the summer months, about half of them at the Thorney Bay Camp next door to the Terminal which accounts, according to the HSE, for one-third of the total risk to the whole area. Thus at certain times of the year the number of people at risk is 43,000.
- (i) The Report totally ignores the human reaction in the event of a major accident involving fire and explosion or the release of toxic clouds. With tidal flooding it is now possible to give warning in reasonable time and to arrange orderly evacuation. This would not be so with a cataclysmic fire or an explosion or the sudden appearance of a cloud of gas or ammonia. The possibility of casualties arising from panic and confusion should have been considered, but it was not. The authors of the Report who

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In view of what was said about shipping risks by learned Counsel for the HSE earlier perhaps I may be permitted to make some additional observations about such risks arising from collisions, near-collisions and other incidents taking place close to Canvey Island, which could easily have triggered off a disaster. Since the Navigational Assessor, Rear Admiral Evans, dealt with the matter in his authoritative statement at the conclusion of the first part of this Inquiry in 1975 such accidents have continued unabated.

What is more disasters elsewhere, such as the blowing up of the French oil tanker "Betelgeuse" at the Oil Terminal in Bantry Bay on 8th January 1979 with loss of all forty-three of its crew and a technician and seven employees of Gulf Oil on the Terminal itself, has particular significance for Canvey. Similar vessels come into the Thames and discharge at our various jetties which are much closer to land-based hazards and residential population than at Bantry Bay. If such an explosion had taken place at Canvey it could have led to a cataclysmic fire of considerable proportions extending landwards and leading to heavy casualties.

[Give particulars of incidents involving the following vessels:-

"Methane Progress"	1975
"Britt"	3rd June, 1976
"LNG Aries"	16th January, 1978
"Texaco Baltic"	January, 1978
"Tunadel"	4th June, 1978
"Sea Emms"	1980]

The volume of hazardous shipping is not declining. For example, the PLA advise me that in the early 1970's the number of tankers arriving in the Thames Estuary fluctuated between 2,900 in 1971 to 2,400 in 1974. Last year the number was 2,441. While the trend in the number of vessels of all types now seems to be downwards the proportion of incidents does not appear to be declining.

It follows that if the URL development were to go ahead there would be an increase in the hazardous traffic to and from Canvey.

3.8. (Contd)

- (i) thought it quite safe to recommend that additional hazards could be brought on to the island did not give a single thought to this crucially important aspect of the problem.

*ADD interpretative remarks
X. G. G. G.*

3.9. It is difficult to understand the timidity of the Report's conclusions. A clear lead had been given in 1976 in the First Report of the Major Hazards Committee. That body had been set up as a direct result of the Flixborough disaster and drew attention to what it called "The More Obvious Threats to Safety", and those that arise from the escape of significant quantities of flammable and toxic materials and warned that the greatest threat would come from the sudden massive escape of volatile liquids and gases which produce a large cloud of flammable and possibly explosive vapour which, if ignited, could lead to heavy casualties and wholesale damage.

3.10. Here on Canvey is a classic example of such a threat yet the HSE Report not only runs away from the dangers it identifies, but from the conclusions reached in other countries where the danger of handling LNG close to residential areas have at last come to be recognised. In the United States, for example, where there are many more LNG installations than in this country serious attention has at last been given to the dangers of storing this material close to residential areas. The Report contents itself with saying that if the storage of such large quantities of LNG at the Terminal is necessary then action will have to be taken so that the risks can be significantly reduced. That statement implies, of course, that the risks are significantly greater than they should be. Yet the conclusion reached is that the danger is not so great that there is any need to remove the installation.

3.11. Now that conclusion has a direct bearing on the subject of this Inquiry for if such a major hazard as the Terminal

3.11 (Contd)

is to remain we have to ask ourselves whether we can tolerate additional hazards, such as oil refineries with their own attendant risks of fire and explosion and with flares shooting flames to the sky providing a ready source of ignition should a gas cloud blow over them. Only one answer can be given to the question. No private vested interest, no nationalised industry and no government has any right to take a chance with a situation of this kind and knowingly risk the destruction of a whole community.

4. THE "CORDON SANITAIRE" ADVICE GIVEN BY THE HSE TO CASTLE POINT DISTRICT COUNCIL IN 1978

4.1. Following the strong public reaction to their Report the HSE were obliged to show some regard for the safety of the residents; accordingly in November 1978 they advised Castle Point District Council that no new planning permissions should be granted within a radius of one kilometre from the Methane Terminal. The only effect of that advice was to confuse the Council and anger the local residents. No less than 8,000 people have their homes within that radius and they were now told that they were living in a danger area. If the matter was as serious as that why not remove the Terminal?

4.2. On 22nd January 1979 I asked the Secretary of State for Employment if he would state the scientific justification for limiting the "cordon sanitaire" around the Terminal to one kilometre. In reply I was told that "experience shows that the worse effects of a flammable gas explosion would be unlikely to extend beyond the radius of one kilometre". While that answer gave no comfort to the 8,000 people already exposed to the risk and begged the question as to what the lesser effects might be at a distance of say two kilometres, it was in itself an admission of the gravity of our situation. It was also utterly misleading, since most experts agree that a gas cloud could travel a considerable distance before ignition. The New York State Fire Department, for example, has

4.2 (Contd)

given an estimate of one to ten miles. Some experts believe that gas clouds of the size we are considering could drift even further and still remain flammable.

4.3. If such statements are correct it follows that in the event of a very large spillage of LNG, and given the fact that the prevailing winds are south-westerly, then not only would the residents of Canvey be at risk, but a still larger population in Benfleet, Hadleigh and Leigh on the Essex mainland.

4.4. I have had three meetings with the HSE in recent months, one of them in the presence of Ministers and at two of these I was accompanied by my own scientific advisers. The HSE scientists have been asked repeatedly to deny that a large spillage if it occurred, could have catastrophic effects involving heavy casualties. They have been unable to do so. They were asked specifically to refute the opinion of Professor David Rasbash of the Department of Fire Safety Engineering at Edinburgh University, one of the world's leading authorities in a relatively new branch of science, "that a spillage of say 2,000 tonnes of LNG from a tanker in the Estuary could then produce a fireball of some 600 metres in diameter, if this ignited soon after spillage. If this is not so ignited and the vapours formed are allowed to be carried down stream over a populated area, then substantial, even probably disastrous fire and probably explosion effects up to a distance of three to four miles from the point of spillage could occur if the vapours were ignited". They were unable to refute that opinion.

4.5. It is the failure of the authorities so far to grasp this nettle which makes it impossible for me or my constituents to accept that an additional hazard in the form of an oil refinery could be introduced safely into this situation. However, it is not only the failure of the HSE to accept the implications of its own findings that is so disturbing, but that some of the findings are themselves suspect. On page 19 of the Report, for example, we

4.5. (Contd)

are told confidently that "ignition sources are under strict control at the Terminal and so no allowance was made for the possibility of on-site ignition when considering the consequences of a release of LNG there". The inference we are invited to draw is clear - the Terminal is so well managed that there is no danger of anything going wrong within its perimeter fence.

4.6. Experience shows, however, that most man-made disasters take place because of human failure or some small fault caused by stupidity or neglect. At the very time the HSE was advising the Castle Point District Council to establish a "cordon sanitaire" round the Terminal serious risks were being taken by the Terminal's management in regard to the electrically-activated alarm and safety systems in the six above-ground LNG tanks. The facts are as follows:-

- (a) There was no suitably qualified electrical engineer in post at the Terminal for at least nine months before September 1978 when such a man was appointed and found that there were serious defects in electrical equipment and safety systems, few technical documents and no record at all of electrical inter-connections. He was able to prove that at least one of the alarm systems in one of the six LNG above-ground tanks would not have worked and suspected that the systems in the other tanks were also defective. He warned management, but was largely ignored. He resigned in August 1979 and was not replaced until after the HSE started an investigation.
- (b) As a result of information laid by this man the HSE Inspectors swooped without warning on the Terminal on 6th February last and confirmed that the high level alarms in the tanks were not working and that the high level trips, while

Add →

This last sentence needs to be qualified as I have heard unofficially in the last few days that British Gas are now likely to appeal in order to gain extra time to comply with the enforcement notices. This needs to be checked, but I would say here and now that British Gas already stand convicted of negligence and if they cannot comply with the very proper requirements of the HSE then the installation should be shut down.

4.6. (Contd)

- (b) said to be operable were unreliable. Intense pressure was then put on British Gas to remedy the defects. On 25th April three enforcement notices were served - i.e. an immediate prohibition notice requiring lower maximum levels for filling and various other safety procedures, a deferred prohibition notice requiring by 31st July the installation of a continuous recorder as part of control room monitoring equipment and additional high reliability alarms, and an improvement notice requiring additional and independent alarm systems to be installed by 1st May 1981. I am advised that British Gas have indicated to the HSE that it does not propose to appeal against these orders either as to their substance or as to the time limits for complying with the last two.

Add interlocking remedies appropriate

4.7. Risk assessments are surely supposed to take account of the number of persons who would die in a major accident. Any estimate in this case depends crucially on knowing how far a gas cloud would travel down wind before ignition. No one can possibly know the answer since on the day of the accident the effects would depend on a number of variables - the extent of the spillage, whether it took place on water or on land, the strength and direction of the wind, the density of the population in the immediate vicinity, the number of adventitious sources of ignition. Even in the United States there is as yet no certainty on this matter. In his report to the Congress in 1978 on the safety of liquefied gases the Comptroller-General said "Risk assessment studies have not reached a stage where their conclusions can be relied on. Until they do regulators will have to attempt to make timely, prudent, siting and other critical judgements with the realisation that many important safety questions cannot yet be answered with confidence".

4.8. Certainly such questions cannot be answered yet in this country with confidence. Two highly relevant questions should be asked.

First, if there was a major spillage of LNG leading to the formation of a cloud which then ignited would it explode or merely develop into what the Major Hazards Advisory Committee has described as a cataclysmic fire?

Second, if there was a cataclysmic fire of great intensity could the upward convection currents induce hurricane force winds which would make fire fighting impossible as was the case of the fire storms caused by incendiary bombing during the Second World War?

If the honest answer to both questions is that at present we do not know then this Inquiry cannot end with a recommendation that an additional flammable and explosive hazard be added to those that Canvey already faces, and the Secretary of State will have to consider what action he can take to reduce the present level of risk more speedily than is envisaged by the HSE.

4.9. It is precisely because the answers to such questions are not known that Shell International Limited announced only last month that they are planning to test the effects of accidental spillages of LNG and LPG on water at Maplin Sands during the summer. One object apparently is to discover whether, on ignition, a gas cloud will explode or merely burn. While this is welcome news it has to be said that the Company have a commercial interest in these experiments since it is involved in the development of a large gas processing plant with a tanker terminal at Mossmorran, Fife, and is anxious no doubt to reassure local objectors. The interest of those who believe their safety to be imperilled by liquefied gas transported, stored and processed close to their homes is very different.

It matters very little to them whether in the event of an accident they would

4.9. (Contd)

be blown to smithereens or merely incinerated. What they wish to know and what I insist on being told is how much longer they are to be exposed to either danger. As the report to the United States' Congress, I have already quoted, makes plain "a major spill in a densely populated area whether by accident, natural forces or sabotage, could be catastrophic". There is, therefore, a degree of urgency in this matter which I trust will be strongly emphasised in any recommendations the Inspector makes at the conclusion of the Inquiry.

5. THE ACCEPTABILITY OF RISK

5.1. This Inquiry is resumed, therefore, in circumstances where not only the residents of Canvey remain at serious risk, but in the case of liquefied gas storage, the real nature of the risk, i.e. whether it is one of fire or of explosion, is still unknown. There are, however, two powerful additional reasons for resisting the conclusion of the HSE Report that the URL refinery could still be built subject to certain restrictions.

5.2. The first concerns the unreliability of basing planning decisions on the present methods of assessing risk. Calculation of the chances of an accident on a mathematical basis may be the logical way and perhaps the only way of trying to set down in coherent fashion the degree of risk to which a community or an individual may be exposed, but the method has serious limitations. It is quite unacceptable to the people of Canvey to tell them that after certain improvements have been completed by some unspecified date in the future they will have a 1 in 10,000 chance a year of being killed. There may be some comfort in the law of averages, but while a particular accident might not arise for a thousand years, on the other hand it might happen tomorrow. Who would have thought that a modern chemical plant would be completely destroyed and twenty-eight people killed, not because of some inherent design

5.2. (Contd)

fault, but because of a lack of supervision by a suitably qualified mechanical engineer over what was really a small improvisation? Nevertheless it happened at Flixborough.

5.3. Moreover it cannot be asserted that gross management error of that kind cannot be repeated. For we have seen that since the publication of the HSE Report that very similar neglect has been discovered at the Methane Terminal which it should be remembered the HSE hold as being responsible for one-third of all the potential risk to the islanders.

5.4. It should be noted that the full range of improvements at the Terminal will not be enforced until May, 1981, ie. four years after the publication of the HSE Report and eight years after the Flixborough disaster. Even then, the Terminal will still remain a major hazard. The only prudent course to take is to remove it altogether and resite it in an area remote from population. If, however, this is not done then there can be no question anyway of permitting additional hazards to be introduced.

5.5. The second objection to the conclusion that it would be safe to permit oil refinery development to go ahead is that the whole investigation was predetermined by a totally wrong approach to the problem. The conclusion stemmed from a consideration of what is "reasonably practical" under the Health and Safety at Work Act, rather than from what is right. Thus having approved the expansion at the nearby Mobil Oil refinery (the case for or against which is not argued here) the HSE was constrained to feel that it would have been wrong for them to stop the URL development. Or put another way, if the HSE had recommended revocation of the URL development then to be consistent they would have had to refuse

5.5. (Contd)

the Mobil expansion and that would not have been "reasonably practical".

5.6. In short, in coming to its conclusion ^{on oil refinery developments} the HSE was faced with a dilemma. The fault here lies less with the HSE than with Parliament which has not yet had an opportunity of reviewing the Health and Safety at Work Act. The same difficulty arises in respect of the islanders' demand that the Methane Terminal be removed. When looking at a proposition of this kind it seems that the HSE is obliged by ^{its} terms of reference to decide what measures it can recommend to bring a hazard within the range of an "acceptable risk" and this must include consideration of the cost of any remedial measures needed to reduce the level of risk. To achieve absolute safety from a major hazard such as the Methane Terminal what is required is its removal to a site remote from population. That is a step the HSE is not yet prepared to recommend.

5.7. For these reasons I submit that the HSE has not been the public watch dog we had originally hoped it might be having regard to the fact that new duties have been put upon industry to so conduct its operations on its own premises so as not to constitute a danger to the health and safety of the community. At Canvey the HSE has fallen short of this requirement as its "cordon sanitaire" advice and its reliance on British Gas for information as to the safety of the Terminal show all too clearly.

5.8. The conclusion I reach is that the HSE investigation was conducted the wrong way round - it should have started by identifying an acceptable level of risk for the community rather than by assessing the risks and then concluding from the figures that if certain improvements are effected the residual level would be generally acceptable.

5.9. There is a final argument I wish to put. Those who work in hazardous industry do so because they enjoy a degree of

5.9. (Contd)

benefit. They should also have an awareness of the risks involved and the obligations resting upon both management and workers to conduct operations with due regard to health and safety.

5.10. Those who live outside the perimeter fence of such installations do not enjoy any benefit, save in the sense that the plant is contributing to the general economy. Nor are they usually aware of all that goes on within the plant or of the precise nature of any risk to themselves or their property. In some respects, however, their interests can be damaged by the operation of the plant, for example, at Canvey owners of land close to the Methane Terminal, who had had expectations of improving their property or building a new home for themselves, were suddenly told in 1978 that planning permission would not be forthcoming. This was due entirely to hazardous operations quite outside their control. In my opinion this is unfair, arbitrary and wrong. The onus should be on those who operate hazardous installations to reduce the risks posed by their operations.

5.11. There is a final consideration. It must be clear from what I have said that this is no ordinary Inquiry. The question to be decided is unique both in itself and for what its outcome will mean for other communities compelled to live alongside hazardous industry in this country and elsewhere.

5.12. That question is whether in the pursuit of economic advantage and profit any government or industrial organisation has a prior right to engage in hazardous activity close to a population that derives no direct benefit and is ignorant of the precise danger in which it stands.

5.13. The advice of the HSE to the Castle Point District Council in September 1978 made it clear beyond any doubt whatsoever that there was a danger to at least 8,000 people that newcomers should be prevented from sharing. There is no other interpretation

5.13 (Contd)

that could be put upon that advice yet I have shown - and other witnesses, far better qualified than I, will show - that that advice underestimated the danger. To argue that in such a situation a new hazard could be added which by its very nature will compound those to which Canvey's community is already exposed is not only wickedly irresponsible, but it expresses contempt for human beings and an arrogance that in a democratic state must be resisted by all the means a free people possess.

5.14. Thus we are confronted here by a fundamental issue of principle which can no longer be fobbed off as it has been in the past. The voice of the people must be heard; a line has to be drawn.