



North West Water

Dawson House, Great Sankey
Warrington WA5 3LW
Telephone Penketh 4321

14th June 1982

To: Members of the West Cumbria Special
Fisheries Advisory Group
(Messrs. T. A. F. Barnes (Chairman);
F. Bunting; E. P. Ecroyd; A. Gleaden
and A. Moffat)

Dear Member,

A meeting of THE WEST CUMBRIA SPECIAL FISHERIES ADVISORY GROUP will be held at 2.30 pm on FRIDAY, 25TH JUNE 1982 at the SOUTH CUMBRIA AREA OFFICE of the RIVERS DIVISION, BEATHWAITE, LEVENS, CUMBRIA, for consideration of the following business.

Yours faithfully,

W. H. CRACKLE,
Secretary & Solicitor

A G E N D A

1. Apologies for absence.
2. Application by British Nuclear Fuels Limited (BNFL) for a temporary licence to abstract additional quantities from Wastwater.
3. River Derwent Abstraction - Prescribed Flows
4. Any Other Business



**North
West
Water**

Dawson House, Great Sankey
Warrington WA5 3LW
Telephone Penketh 4321
Telex 628642

W H Crackle *Secretary and Solicitor*

F1/B12

Our ref **JWP/GKH**
Your ref

21st June, 1982

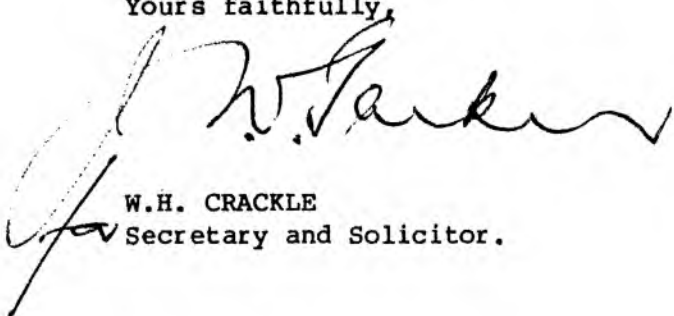
To: Each member of the West Cumbria Special Fisheries Advisory Group

Dear Sir,

West Cumbria Special Fisheries Advisory Group
Meeting - 25th June, 1982

I attach hereto a paper in connection with the presentation of findings referred to in paragraph 3 of Item No.2 of the Agenda for the above meeting.

Yours faithfully,


W.H. CRACKLE
Secretary and Solicitor.

George Mann *Chairman*

Fl/A18

NORTH WEST WATER AUTHORITYWEST CUMBRIA SPECIAL FISHERIES ADVISORY GROUP25TH JUNE, 1982APPLICATION BY BNFL FOR A TEMPORARY LICENCE TO
ABSTRACT ADDITIONAL QUANTITIES FROM WASTWATER.

INTRODUCTION

1. British Nuclear Fuels Ltd (BNFL) are currently authorised to abstract from Wastwater up to 18.2 ML/d (4 mgd), for supply, and up to 22 ML/d (4.8 mgd) for compensation water which is to be pumped to the River Irt whenever the flow at Galesyke flow measuring station would otherwise be less than 20.4 ML/d (4.5 mgd). The annual quantity 'for supply' is 365 times the daily quantity.
2. BNFL have now advertised their intention to apply for a temporary increase of 11 ML/day (2.4 mgd) in their abstraction from Wastwater, to run until 31st December 1987 or until a new supply is available, whichever is the earlier. This course of action follows the rejection by the Secretary of State of their previous application for a permanent increase of 32 ML/d (7 mgd) to 50 ML/d (11 mgd).

The letter setting out the Secretary of State's rejection stated:-

"The Secretary of State notes that at the inquiry BNFL indicated that in the event of their Wastwater proposals not being approved, they would wish to have a temporary consent for increased abstraction of 11 ML/d (2.4 mgd) from Wastwater Lake pending the provision of a satisfactory supply from another source. He also notes that in the Inspector's view this should be considered reasonable. To the extent that the Company's additional requirements in the short term are for top quality (R1) water, the Secretary of State accepts that there appears to be no alternative to a temporarily increased abstraction from Wastwater; and he considers that any forthcoming application by BNFL for a temporary licence should be viewed accordingly."

3. Notwithstanding the Secretary of State's remarks the officers have examined objectively and in depth the consequences for the fisheries of the River Irt. Evidence presented at the 1980 Public Inquiry stated that an increase in abstraction would result in drawdown below the level of the bar at Wastwater. Re-examination confirms that this could occur during the period of the increased abstraction if authorized by a temporary licence.

IMPLICATIONS FOR RIVER IRT FISHERIES

4. The likely effects of the proposed temporary increase in abstraction from Wastwater on those flows in the River Irt which are important for migratory fish have been examined with computer simulations for the period 1974-81. The flows of particular concern to fisheries are the higher range needed to permit upstream migration of adults and the very low flows where fish survival could be prejudiced.

EFFECT ON FISH MIGRATION

5. Using Dr. Stewart's "formula", the commencing migration flow in the upper reaches of the River Irt has been estimated at 80 Ml/d (17.6 mgd). Over the period 1974-81 an increase in the abstraction from the lake of 11 Ml/d would have resulted, on average, in a reduction in the availability of flows greater than 80 Ml/d (17.6 mgd) of about 6 days during the period May - October in each year. The average availability of these flows during May - October with the present rate of abstraction has been 138 days, so the 6 day reduction represents only a 4.3% loss. The reduction does, of course, vary from year to year, ranging from 3 days in 1978 and 1980 to 14 days in 1975 and this sometimes results in a delay of a few days in achieving a migration flow following rainfall after a prolonged drought, when the lake has been drawn down. This would have happened in 1976 (4-5 days delay) and in 1974 (7-8 days delay).

EFFECT ON LOW FLOWS AND LAKE LEVELS

6. The increased abstraction would have more significant effects on dry weather flows. Using Dr. Stewart's approach, the so called "survival flow" in the River Irt immediately below Wastwater is estimated to be 26 Ml/d (5.8 mgd), and this value has been used for comparison of changes. With the present abstraction/compensation conditions, the number of days during the period May - October on which the flow would have fallen below 26 Ml/d (5.7 mgd) varies from nil in 1975, 1979 and 1981 up to 24 in 1980, averaging 6.2 days per year. Increasing the abstraction by 11 Ml/d (2.4 mgd) would have increased this by 6.4 days on average to 12.6 days. However there is considerable year-to-year variation, with negligible differences in 1975, 1977, 1979 and 1981, but increases of 17 days in 1974 and 13 days in 1980.
7. An 11 Ml/d increase in abstractions would have resulted in the lake being drawn down below the level of the bar on two occasions, namely in May 1974 (for 15 days) and in May/June 1980 (for 22 days). The drawdown is reflected in the extended periods of flow less than 26 Ml/d as only pumped compensation water would be entering the river at these times. In September 1976 and June 1978 the lake level would have been drawn down to within 10mm above the bar.

EFFECTS ON SPATES

8. The effects of the increased abstraction on the occurrence of small Summer spates has also been examined. Taking a flow in excess of 80 Ml/d (17.6 mgd) at Galesyke as constituting a spate, the effect would have been very slight, with only one summer 'spate' being lost in the last 8 years (June 1975) and one "near miss" when a minor peak of 70 Ml/d (15.4 mgd) would have been reduced to about 45 Ml/d (10.0 mgd) (June 1978).

VARIATION OF COMPENSATION WATER

9. Modifications to the compensation water arrangements have been considered, but these have shown no benefit to the availability

of migration flows or to the occurrence of summer spates. In fact increasing the volume of compensation water would result in longer periods of drawdown below the bar and offset higher flows in the river below the point of discharge.

SUMMARY OF EFFECTS

10. The consequence of increasing BNFL's abstraction from 18 Ml/d (4 mgd) to 29 Ml/d (6.4 mgd) on the availability of migration flows and summer spates is likely to be slight and to be of little significance to migration of fish in the Irt in most years. The increased abstraction would have a more significant effect on the dry weather flow situation, and resulting only compensation water being discharged to the River Irt after extended periods of dry weather and in increases in the duration of flows less than 26 Ml/d (5.7 mgd).

CONCLUSION

11. In view of the fact that these increased durations of low flows would only have occurred in alternate years, it is unlikely that an increase of 11 Ml/d (2.4 mgd) in the abstraction for a temporary period of 5 years would have a long term detrimental effect on the stocks of migratory fish.

NORTH WEST WATER AUTHORITY

WEST CUMBRIA SPECIAL FISHERIES ADVISORY GROUP

25TH JUNE 1982

APPLICATION BY BNFL FOR A TEMPORARY LICENCE

1. BNFL have advertised their intention to apply for a temporary increase in Wastwater abstractions, and such application is currently on public display. A copy of the public notice is attached.
2. This course of action was indicated by the Secretary of State in his decision letter, when he rejected the previous proposals by the Authority and BNFL for increased abstractions from Ennerdale and Wastwater, respectively.
3. The officers are assessing the impact of the temporarily increased abstraction on the fisheries of the River Irt, and a presentation of their findings will be made at the meeting.

NORTH WEST WATER AUTHORITYWEST CUMBRIA SPECIAL FISHERIES ADVISORY GROUP25TH JUNE 1982RIVER DERWENT ABSTRACTION - PRESCRIBED FLOWS

1. Since the Secretary of State's refusal of the previous Ennerdale and Wastwater proposals, the officers have been reviewing alternative ways of meeting the increasing water needs of BNFL and of public water supplies. All the alternatives involve abstractions from the River Derwent of quantities up to 70 Ml/d (16 mgd). It is proposed that such abstractions would be made in the vicinity of Yearl weir, possibly adjacent to or as an extension of the existing Barepot intake, and would be supported at times of low river flow by augmentation releases from Thirlmere.
2. The officers will report on their initial considerations of the conditions that would need to be applied to such an abstraction in order to protect the fishery, and Members' observations and comments will be invited.

PRESS NOTICE

WATER RESOURCES ACT 1963

NOTICE OF APPLICATION FOR LICENCE TO ABSTRACT WATER

Notice is hereby given that an application is being made to the North West Water Authority by British Nuclear Fuels Limited, Risley, Warrington, Cheshire, for a licence to abstract the following quantity of water from Wastwater Lake, Cumbria, at the following point of abstraction:

2,400,000 gallons per day at co-ordinate 147039 on Ordnance Survey Sheet NY 10 in the Parish of Irton with Santon in the District of Copeland in Cumbria.

This application is for a temporary licence until 31 December 1987 or until the provision of a satisfactory alternative source of supply whichever is the earlier and is additional to the existing Licence of Right (27/74C/7/L/11) for the abstraction of 4,000,000 gallons per day.

A copy of the application and of any map, plan or other document submitted with it may be inspected free of charge at Santon Bridge Post Office, Cumbria, Calderbridge Post Office, Cumbria, and Whitehaven Central Library, Lowther Street, Whitehaven, Cumbria, at all reasonable hours during the period beginning on 10 June 1982 and ending on 8 July 1982.

Any person who wishes to make representations about the application should do so in writing to the Manager of the Rivers Division, North West Water Authority at PO Box 12, New Town House, Buttermarket Street, Warrington, Cheshire before the end of the said period.

Signed ... H. E. BOLTER
COMPANY SECRETARY

On behalf of BRITISH NUCLEAR FUELS LTD .

Date 9 June 1982