NORTH AYRSHIRE COUNCIL

18-05-2020

Emergency Governance Decisions (Covid-19 Outbreak)

Title:	**Determination of the Detailed Emergency Planning Zone (DEPZ) for Hunterston A and B Nuclear Power Stations**
Purpose:	To retain for an interim period pending final determination by Council, the current status quo relating to the extent of the Detailed Emergency Planning Zone (DEPZ) for Hunterston B Nuclear Power Station, under the Radiation (Emergency Preparedness and Public Information) Regulations 2019 (REPPIR), and to determine the DEPZ for Hunterston A
Recommendation:	Agree to (a) determine that the boundary of the DEPZ for Hunterston B should be 2.4km to maintain the current status-quo in practice and (b) this boundary should be fully reviewed at the first Council meeting after 1 December 2020 and (c) to determine the DEPZ for Hunterston A at 0km.

1. Executive Summary

1.1 The Radiation (Emergency Preparedness and Public Information) Regulations 2019 (REPPIR) requires the Council to determine the boundaries of the DEPZs (Detailed Emergency Planning Zones) around Hunterston A and B by 21 May 2020.

1.2 For a number of reasons set out in the report, it has not been possible to either determine the DEPZs or obtain an extension to this timetable. The Council has just been advised that if the DEPZs are not determined by 21 May 2020 it will face enforcement action by the Office of Nuclear Regulation.

1.3 The report recommends a means to both ensure compliance with our statutory obligations, and to allow Council to make the final decision on the Hunterston B DEPZ. In order to do so, the Chief Executive is recommended to maintain the current status quo of a 2.4km DEPZ boundary, pending this coming back to Council. Had the Council been granted an extension to allow it to determine the matter once meetings resume, the effect would have been the same.

2. Background

2.1 The Radiation (Emergency Preparedness and Public Information) Regulations 2019 requires the Council to determine the boundaries of the DEPZs (Detailed Emergency Planning Zones) around Hunterston A and B. The relevant

regulations come into effect on 21 May 2020. By that date the Council must set the boundaries of the DEPZs, and the Hunterston off-site plan must be in place.

2.2 Regulation 8 places a duty onto local authorities to determine the size and shape of the DEPZ around the such sites. This duty was previously held by the Office for Nuclear Regulation (ONR) as regulator. While the regulations set the outer boundary of the Outline Planning Zone (OPZ) at 30km for Hunterston B and 1km for Hunterston A, the inner boundary of this OPZ is the DEPZ boundary set by the Council. The effect of this is that until the Council set the boundary of the DEPZ, the multi-agency Hunterston off-site plan cannot be finalised.

2.3 The DEPZ is the area close to the site where protective countermeasures are to be applied in the event of an off-site release from Hunterston B. These protective countermeasures are:

- Sheltering
- Taking stable iodine tablets
- Evacuation

2.4 Unfortunately there are a number of factors which have contributed to the Council's delay in setting the boundary of the DEPZ. While the discretion open to the Council is legally very limited, a number of consultation responses advocate setting the boundary of the DEPZ much wider, to enable stable iodine tablets to be available or distributed within this wider area. As a result, the determination of the DEPZ is likely to be controversial.

2.5 The original decision due to be made in late November 2019 was delayed on the basis it was inappropriate to determine a controversial item during the pre-election period. EDF as Hunterston B Operator thereafter submitted a revised Consequences Report in January 2020. Regulation 8 provides that the Council must determine DEPZ 'on the basis of' the Operator's Consequences Report. On 21 January Cabinet received a report and agreed to continue consideration to its next meeting, to allow for further discussions to take place between Elected Members and the Office for Nuclear Regulation (ONR). On 12 February 2020 a motion to Council which sought the decision to be taken by Council rather than Cabinet, failed to get the required two-thirds majority to suspend Standing Orders to enable its consideration. On 18 February 2020 Cabinet agreed to (a) refer consideration of this item to Council; and (b) extend an invitation to Public Health England (PHE) to attend the Council meeting. An earlier Policy Advisory Panel also briefed Members on REPPIR and the setting of the DEPZ.

2.6 A report had been prepared to enable this item to be finally determined by Council at its meeting on 25 March 2020. Unfortunately, as a result of the COVID-19 outbreak, with the UK going into lockdown on 23 March 2020, this meeting was cancelled. This report and its appendices is attached as Appendix A. It contains wider background information relevant to final determination of the DEPZ and details the reasons for the limited extent of the discretion available to the Council.

2.7 Given that determination of this matter is likely to be controversial, it would be best that the final decision is made by Council. This would ensure maximum transparency. It would also allow PHE to be in attendance to answer any technical questions that Members might have. To enable this, and following discussions between the Ayrshire Civil Contingencies Team (ACCT) and ONR, on 6 May 2020 the Chief Executive wrote to ONR to request an extension to the 21 May 2020 deadline.

2.8 On Friday 15 May ONR phoned ACCT to advise that as the Council had not able to confirm the DEPZ area within the statutory timetable ONR will now be “running through the enforcement management model”. Ultimately the Council can face criminal prosecution for its failure to determine the DEPZ. North Ayrshire Council is the only UK Council still to determine the boundary of the DEPZ. In turn this stops the finalisation of the Off-Site Plan which also requires to be in place by 21 May 2020, albeit it is understood that due to the COVID-19 outbreak a number of off-site plans have still to be finalised.

2.9 A teleconference took place with ONR on the afternoon of 18 May 2020, attended by ACCT and the Head of Democratic Services. ONR advised that they have no discretion over whether to take enforcement action. They advised that unless the Council determine the boundary of the DEPZ by 21 May 2020, they would be applying their enforcement model procedures. This provided for a graduated approach to enforcement. As this was an ‘administrative breach’ the likelihood is that the Council would be initially served with an Enforcement Letter, giving the Council a period of time to comply. The likely period of time would not be sufficient to allow determination by Council. Thereafter an Improvement Notice would be served, with the final step being prosecution. While the final decision on prosecution would be taken by the Procurator Fiscal and would no doubt take into account the current COVID related difficulties in determining the DEPZ, the key facts remain that (a) at 22 May 2020 the Council will be in breach of its statutory duty to determine the DEPZ; (b) this stops the Hunterston off-site Plan from being finalised and results in the statutory duty to prepare an off-site plan also being breached at 22 May 2020; (c) the regulations came into effect a year ago and the Council has had a year to determine the DEPZ; (c) we are the only Council yet to determine the DEPZ and (d) the Council may be subject to enforcement action and prosecution. Apart from the monetary and reputational damage of enforcement action, such action is also likely to require the diversion of senior officer resource from dealing with the emergency.

2.10 It is regrettable that we find ourselves in this position one week before expiry of the deadline. It is competent for the Chief Executive to use his ‘urgency’ powers to determine the DEPZ, although this is likely to be controversial and opposed by some Members. Nor does it ensure the full transparency of decision making which a debate at Council would allow.

2.11 The regulations provide that once determined, the boundary of the DEPZ can be reviewed. ONR’s advice is that the timing of such a review is in the gift of the Council. Therefore, if the Chief Executive took a decision to set the boundary of the DEPZ on an interim basis pending such review, this would enable Council to still be able to take the final decision on determining the DEPZ. ONR have verbally confirmed they would not oppose such a course of action.

2.12 To enable Council to have the final say, it is proposed that the Chief Executive maintain the status quo, by determining the DEPZ for Hunterston B at the boundary of 2.4km. Had the requested extension been granted, this would have had the same result. Strictly speaking this is the current Hunterston A boundary, the current Hunterston B boundary being 1km. However, the practical effect for the 50 properties within the 2.4km boundary is the same, regardless of which power station the DEPZ originally derives from. This also maintains the current inner boundary of the OPZ.. This complies with the Council’s statutory duty, avoids possible enforcement action and prosecution, enables the off-site plan to continue on the basis of its current inner boundary, enables current supports to the 50 properties to remain in place, and enables Council to make the final decision

2.13 In relation to Hunterston A, its OPZ is now set under the regulations at 1km reflecting the non-operational and decommissioned nature of this site. Therefore, in this case, it is not possible to continue with the status quo by maintaining a DEPZ at 2.4km, since this would be wider than its OPZ. In these circumstances it is recommended that the DEPZ for Hunterston A is set at 0km as recommended in the Magnox Consequences Report. Legally and practically, Council has no other option.

3. Proposals

3.1 In relation to the DEPZ for Hunterston A, as the OPZ is set under the Regulations as 1km, the only reasonable option is to set the DEPZ for Hunterston A as 0km. In practice this has little effect as a 2.4km DEPZ for Hunterston B will include ground around Hunterston A.

3.2 In relation to the DEPZ for Hunterston B, it is recommended that a decision is taken before 21 May 2020 to retain a 2.4km DEPZ boundary. In practical terms this reflects the status quo. This would be on the basis that the decision be brought back to Council for a final determination at the first Council meeting after 1 December 2020.

4. Implications/Socio-economic Duty

Financial

4.1 There are no financial implications as this work is chargeable to EDF under REPPIR.

Human Resources

4.2 It is not expected that this will result in any additional staffing requirements, but any such resources would be chargeable to EDF as operator.

Legal

4.3 Failure to determine the DEPZ by 22 May 2020 will result in the Council being in breach of its statutory obligations, subject to enforcement action, and potentially prosecution. In order to comply with statutory duties the DEPZ has to be determined by 21 May 2020.

4.3.1 As set out in the Appendix, the Council's role is to base the DEPZ on the operator's Consequences Report, and to fine tune these boundaries based on the factors detailed in Regulation 8, namely:
(a) local geographic, demographic and practical implementation issues;
(b) the need to avoid, where practicable, the bisection of local communities; and
(c) the inclusion of vulnerable groups immediately adjacent to the area proposed by the operator.
In terms of (b) and (c) above, there are no communities bisected by either the 2km or 2.4km limit and no vulnerable premises adjacent to it.

Equality/Socio-economic

4.4 There are no significant equalities or socio-economic implications of this report.

4.4.1 **Children and Young People:**

There are no significant implications of this report. Effective emergency planning arrangements support responders to deal with an emergency and address the impact of an emergency on the population as a whole, children and young persons included.

Environmental and Sustainability

4.5 This report advises about new emergency planning duties in relation to Hunterston A and B. Effective emergency planning arrangements support responders to deal with the environmental and other impacts of an emergency. It is important to recognise that this report is not about wider issues of the sustainability, hazards or environmental impact of nuclear power.

Key Priorities

4.6 Implementation of REPPIR as a whole will support the Council Plan theme of:

- Helping all of our people to stay safe, healthy, and active

Community Wealth Building

4.7 None

5. Consultation

5.1 Details of consultation in relation to setting the DEPZ boundaries is set out in 2.21 of Appendix 1. In addition to consultation with those within the current DEPZ, there has been consultation with local Category 1 and 2 emergency planning partners, the Communications Manager, relevant officers in neighbouring authorities and residents within the current DEPZ. There has also been consultation with Public Health England who are the authority who provide independent radiation advice to Councils across the UK and ONR.

5.2 ACCT have also consulted and are continuing to consult the following in relation to preparation of the Off-Site Contingency Plan. Council needs to agree the DEPZ boundary before this Plan can be finalised.

(a) the operators, EDF and Magnox;
(b) Category 1 and 2 responders;
(c) NHS Ayrshire and Arran
(d) SEPA;
(e) Public Health England;
(f) Public Health Scotland

5.3 In relation to consultation on this report, the lateness of the response received from ONR and the imminent expiry of the 22 May deadline makes it be impossible to have meaningful consultation with Group Leaders. That is one of the main reasons why it is intended to retain the status quo pending full consideration by Council. Strictly speaking, in terms of the Scheme of Delegation to Officers, the Chief Executive has power to determine this matter in consultation with the Portfolio Holder, in this case the Leader, who has been consulted.

Andrew Fraser
Head of Democratic Services

For further information please contact **Andrew Fraser, Head of Democratic Services,** on **01294 324125**.

Background Papers

1- Draft Report to Council on 25 March 2020, containing the following appendices

Consequences Report for Hunterston A

Consequences Report for Hunterston B

REPPIR

Reppir Code of Practice

Appendix A

NORTH AYRSHIRE COUNCIL

25 March 2020

North Ayrshire Council

Title:	**Determination of the Detailed Emergency Planning Zone (DEPZ) for Hunterston A and B Nuclear Power Stations**
Purpose:	To agree the extent of the Detailed Emergency Planning Zone (DEPZ) for Hunterston A and B Nuclear Power Stations, under the Radiation (Emergency Preparedness and Public Information) Regulations 2019 (REPPIR)
Recommendation:	Council agrees to (a) determine the DEPZ for Hunterston A as 0km as recommended by the Operator, and (b) determine that the boundary of the DEPZ for Hunterston B should include all properties currently within the DEPZ, as shown delineated in black on the plan at Appendix 4 attached to this report.

1. Executive Summary

1.1 1.1The Radiation (Emergency Preparedness and Public Information) Regulations 2019 requires the Council to determine the boundaries of the DEPZs (Detailed Emergency Planning Zones) around Hunterston A and B.

1.2 The boundaries of the DEPZs must be 'on the basis of' the Operators' recommendations contained in their 'Consequences Report'. Currently the boundary is 2.4km from Hunterston A, and 1km from Hunterston B, whereas the respective Consequences Reports propose a boundary of 2km for Hunterston B and 0km for Hunterston A. The Council has limited powers to extend the boundary, but in the case of Hunterston B it is recommended that there are practical implementation advantages in retaining within the DEPZ, those properties currently within the existing 2.4km boundary. For reasons set out in the report, the Council does not have legal powers to set a DEPZ which is significantly beyond this distance and, having regard to the Emergency Reference Levels (ERL) set by Public Health England (PHE), this would be expected to result in more harm than good.

2. Background

2.1 The new REPPIR legislation became part of UK law on 22 May 2019, as part of the UK's commitment to continuously improve preparedness in line with international best practice. It applies to all nuclear sites across the UK and is not specific to Hunterston A or B.

2.2 Regulation 8 places a duty onto local authorities to determine the size and shape of the DEPZ around the such sites. This duty was previously held by the Office for Nuclear Regulation (ONR) as regulator.

2.3 The DEPZ is the area close to the site where protective countermeasures are to be applied in the event of an off-site release from Hunterston B. These protective countermeasures are:

- Sheltering
- Taking stable iodine tablets
- Evacuation

2.4 All residents living within the DEPZ currently receive a calendar every year advising them of what to do if an emergency is declared. NHS Ayrshire and Arran also ensure that the residents have a supply of stable iodine tablets. The administration of stable iodine in tablet form is carried out to reduce or prevent uptake of radioactive iodine by the thyroid. EDF provide a telephone warning service whereby residents can register to be notified by telephone if an emergency is declared.

The Extent of the Discretion Available to the Council

2.5 It is important to recognise that the Council's duty under Regulation 8 does not stand alone. It forms part of a wider series of duties exercised by other bodies. The Council cannot exercise functions of these other bodies and vice versa. It also needs to be borne in mind that outwith the DEPZ there is an Outline Planning Zone extending to 30km for Hunterston B and 1km relating to Hunterston A. The outer boundary of the OPZ is set by REPPIR, not the Council. The small OPZ for Hunterston A reflects the non-operational and decommissioned nature of this site.

2.6 To fully understand the extent of the discretion available to the Council, it is necessary to detail the various functions involved in REPPIR, and who exercises them. REPPIR sets out the following approach to the different responsibilities of Council and Operator. :-

2.7 Firstly it is the duty of the Operator (EDF for Hunterston B and Magnox for Hunterston A), not the Council, to assess the risks from generation of nuclear power at the site. In terms of Regulation 4 this is referred to as the 'hazard evaluation'.

2.8 Secondly, Public Health England (PHE) determine the thresholds or Emergency Reference Levels (ERLs) which are relevant to administration of iodine, sheltering and evacuation. This is relevant as the DEPZ is the area within which it is necessary to shelter, to administer iodine and evacuate in order to meet these Emergency Reference Levels. Emergency Reference Levels are a system designed primarily for planning of protective actions as a means to decide whether, on balance, the action does more good than harm. ERLs are expressed in *averted dose*, that is the amount of radiation dose which can be saved as a result of implementation of the protective action. This averted dose reduces the risk from radiation but must be balanced against the potential harm that is associated with the protective action itself. Each of the three protective actions (sheltering, evacuation, stable iodine) has an upper and lower ERL. PHE's advice is to always plan to use the lower ERL which maximises the protection of the public and represents the largest justifiable area or radius. If the calculated averted dose is below the lower ERL then, on balance, the protective action may introduce more harm than good. If the averted dose is greater than the upper ERL then the protective action can nearly always be justified on balance.

2.9 Thirdly, under Regulations 5 and 7, EDF as Operator submits a Consequences Report to the Council, which is attached at Appendix 2. The details of what must be considered in this Consequences Report assessment are contained in Schedule 3 of REPPIR.

2.10 In its Consequences Report, EDF has applied the worst-case scenarios taken from their hazard evaluation (including multiple risks all occurring at the same time), to determine the geographical extent to which it would be necessary to evacuate, shelter and administer iodine to comply with the Lower ERL for each of the protective actions. They have therefore recommended the largest justifiable distance. The respective distances from their Consequences Report are 300m for evacuation (although there are no houses within this distance), 1km for sheltering and 2km, for administration of stable iodine. PHE recommends that stable iodine is used in conjunction with sheltering which is why sheltering has been recommended out to 2 km rather than 1 km.

2.11 The ERL system is intended to provide a simplified approach to support decision making and planning, including the Council's decision on the DEPZ boundaries. In simple terms, as the 2km boundary is set at the level of the lower ERL, then to extend the boundary beyond this to areas where a lower dose would be expected, would on balance, be expected to introduce more harm than good.

2.12 The last step in this process is that under Regulation 8, the Council determine the boundary of the DEPZ. This must be '**on the basis of'** the operator's recommendation. The Council can extend this in light of :

(a) local geographic, demographic and practical implementation issues;

(b) the need to avoid, where practicable, the bisection of local communities; and (c) the inclusion of vulnerable groups immediately adjacent to the area proposed by the operator

2.13 In all cases there is a need to have regard to the REPPIR Approved Code of Practice. Relevant extracts from this in relation to a local authority's duties under Regulation 8 (determination of DEPZ) appear in Appendix 1.

2.14 A key question in determining the extent of the discretion open to the Council is to determine what is meant by 'on the basis of the operator's recommendation' in Regulation 8. In other words, how wide is the Council's discretion to depart from this? It seems clear from the foregoing that in setting the DEPZ, the Council cannot consider the risks from nuclear operations at Hunterston, including any issues of graphite brick cracking, since hazard evaluation is a matter for the Operator under Regulation 3. Nor can Council change the Emergency Reference Levels (ERLs) set by PHE. We are obliged to accept these and accept the Operator's Consequences Report, including their assessment of factors in Schedule 1. In other words, the Council has to accept the Consequences Report at face value and cannot look behind it. Essentially our role is restricted to fine tuning the boundary to align it with geographical features, avoid bisecting communities etc. This backed by the ONR statement that 'there is nothing in REPPIR which should change the current position."

2.15 In exercising its discretion the Council also needs to balance the benefits and disadvantages of any proposed boundary. However, and as detailed in 2.11, the Emergency Reference Levels (ERLs) set by Public Health England, largely determine this, since they are a system designed to decide whether, on balance, the action does more good than harm. For example, disadvantages of administering iodine might include (a) some people have adverse effects from it; (b) having tablets around a house for long periods is never a good idea as pets, and children can get hold of them (c) people can forget why they are there or move. As regards evacuation, having a wider DEPZ evacuation zone is something which could stop those within the immediate area from evacuating. Having a wider sheltering distance could impact on those who need visits from carers, result in pupils being unable to return home etc. While there may also be a perception that being in the DEPZ could impact on house values (as it would be declared in the seller's home report, and might discourage some buyers), this would not be relevant to the Council's role under Regulation 8 to look at 'local geographic, demographic and practical implementation issues'.

Determination of the DEPZ

2.16 The Council have received Consequence Reports from both Operators. REPPIR defines the factors which must be taken into account in any such Report. EDF Energy has considered a wide range of accident scenarios in the hazard evaluation process and its recommendations are based on the scenario of shortest time to release, the largest quantity of radioactivity and the longest duration of release in the determination. The EDF Consequences Report recommends the distance of the DEPZ should be 2km from Hunterson B.

2.17 The Council has also received a Consequences Report from Magnox in respect of Hunterston A which is attached at Appendix 3. As the boundary of the wider OPZ for Hunterston A is set at 1km by REPPIR, the DEPZ would have to be less. This Report states that there is no requirement for a DEPZ for Hunterston A. This reflects the non-operational and decommissioned nature of this site. In practice, as Hunterston A and B are next to each other, a wider boundary for 'B' will result in an area around 'A' being within a DEPZ.

2.18 Whilst the legislation is clear that local authorities should base their DEPZ area on the Consequences Report, and the Council has to take this report at face value and not look behind it, the Council has also sought and received from PHE (Public Health England) their independent advice on the DEPZ distance for Hunterston B. PHE provide independent radiation advice to councils across the UK. The PHE advice agrees with that of EDF and states that the protective countermeasures are only required to a distance of 2km from Hunterston B.

2.19 The current DEPZ is a 2.4km circle around the site, which dates from when Hunterson A was an operating nuclear power station. In 2016, ONR determined that Hunterston A (by then a decommissioning site) was no longer considered a risk under the REPPIR 2001. The current DEPZ for Hunterston B is 1km.

2.20 There are currently 50 properties within the current 2.4km DEPZ. This would reduce to 42 within the recommended 2km DEPZ. However, if a 2km boundary was to be imposed, this would now be aligned with physical features such as the A78. This would mean that with the exception of 8 properties all of those included previously within the 2.4km DEPZ would be included in the new 2km DEPZ. Appendix 4 shows the boundary of the existing 2.4km boundary and a 2km boundary.

2.21 There is no duty on the Council to consult widely in setting the DEPZ, particularly as the Council's discretion is limited to being based on the Operator's Consequences Report. As the Council's discretion is largely limited to fine tuning the operator's recommendations AACT did carry out a consultation in late 2019 with those who might be effected by such an exercise. In particular they wrote to all residents within the current DEPZ. At that stage, indications from EDF were that the Consequences Report would recommend a DEPZ of 1km, rather than the 2km now proposed. Only one resident from within the DEPZ commented, seeking further information. They advised they would prefer not to be included in the DEPZ area but would still like to receive both the calendar and the stable iodine tablets. This lack of response by those within the DEPZ to the proposal to reduce the DEPZ to 1km might reasonably be interpreted as showing that those within the DEPZ had few concerns about its reduction. Further details of ongoing consultation in relation to preparation of the Off-Site Contingency Plan are contained in section 5.

2.22 The Chair of the Hunterston Site Stakeholders Group and Fairlie Community Council has written to North Ayrshire Council and ONR expressing the wish that the DEPZ is extended to include all of Fairlie and Millport. Fairlie lies between 3.5 and 6.5km km from the site, and Millport lies approximately 4km from the site.

2.23 A number of other representations have been submitted from members of the public which seek extension of the DEPZ to 20km from the site. The main basis for this is that in France there is a 20km radius for pre-distribution of these stable iodine tablets, in Germany it is 64 miles, Austria and Belgium provide for the whole population and the Dutch Government have determined that they are to be provided for all pregnant women and under-18s, within a 100km radius of nuclear power plants. These countries provide residents with a voucher and they pick up tablets 'free of charge' from Pharmacies.

2.24 The arguments in favour of extending the DEPZ to 20km reflect the different regulatory regimes in these countries, that of the UK being a risk-based one. The Council has no power to determine the DEPZ or the allocation of iodine based on French, German or other laws. It requires to comply with REPPIR. The Council cannot look behind or challenge the Consequences Reports it has received from the Operators. It cannot change the Operators hazard assessment or PHE's Emergency Reference Levels (ERLs) in order to justify a wider DEPZ. It cannot change the legislative basis of REPPIR to bring it into line with France or elsewhere. Nor can it alter the considerations in terms of Schedule 3 of REPPIR which a Consequences Report needs to address. All of these are outwith the Council's powers.

2.25 In relation to Millport, an argument has been made that in the event of an emergency when the ferries were cancelled, stable iodine tablets would not reach Millport. However a stock of stable iodine is already held on the island. It has also been suggested that inclusion of the Cumbraes in the DEPZ would somehow support evacuation from the island. While this is a matter for more detailed planning as part of the Outline Planning Zone (OPZ), it should be noted that for evacuation purposes the Consequences Report calculates the dosage level of the lower level ERL at 300m from Hunterston. In other words, to set a DEPZ evacuation distance beyond this (ie at 4.5km to include Millport) would be expected to result in more harm than good. If the DEPZ was extended to include Millport and Fairlie, this would be well beyond the Lower Emergency Reference Level (ERLs) set by Public Health England and therefore, as the purpose of the ERLs is to determine the point at which the DEPZ does more harm than good, extending the DEPZ to these communities would do more harm than good.

2.26 Public Health England's advice is that on the basis of the assessment made by EDF, extending automatic protective actions out to 6 km or 20 km would not be justified. The Outline Planning Zone extends beyond 20 km and provides a framework for planning which is proportional to the risk. Should an emergency occur, PHE would always assess the risk to the public on the basis of observed data and prognosis of how the event may develop and advise the STAC (the Scientific and Technical Advice Cell who provide advice in an emergency) accordingly as to what protective actions are appropriate.

2.27 The Council's role is to base the DEPZ on the operator's Consequences Report, and to fine tune these boundaries based on the factors detailed in Regulation 8, namely:

(a) local geographic, demographic and practical implementation issues;

(b) the need to avoid, where practicable, the bisection of local communities; and

(c) the inclusion of vulnerable groups immediately adjacent to the area proposed by the operator.

2.28 In terms of (b) and (c) above, there are no communities bisected by the proposed 2km limit and no vulnerable premises adjacent to it. As regards local geographic, demographic and practical implementation issues, this only allows Council to fine tune the boundaries. Arguably, for practical implementation purposes it is better to keep everyone in the existing zone within the new zone, particularly as much of it will still be around 2km. In defining the boundary of a detailed emergency planning zone, geographic features should also be used for ease of implementing the local authority's off-site emergency plan. Physical features, such as roads, rivers, railways or footpaths should be considered as well as political or postcode boundaries, particularly where these features and concepts correspond with other local authority emergency planning arrangements.

3. Proposals

3.1 In relation to the DEPZ for Hunterston A, as the OPZ is set under the Regulations as 1km, the only reasonable option is to set the DEPZ for Hunterston A as 0km. In practice this has little effect as a DEPZ for Hunterston B will include ground around Hunterston A.

3.3 In relation to the DEPZ for Hunterston B, the Council has a statutory duty to determine the DEPZ "on the basis of the Operator's recommendation as contained in their Consequences Report". There are two realistic options. Firstly, to go with the Operator's recommendation of 2km, the reasonableness of which has been confirmed by Public Health England. Alternatively, to retain the current properties within the boundary, having regard to the communication and certainty advantages which such a long-standing boundary brings in an emergency. In both cases the boundary would now be aligned with geographic features, rather than being a simple circle around the site.

3.4 A strict application of the Emergency Reference Levels (ERLs) would suggest that the inclusion of properties outwith 2km would do more harm than good. However on balance, given that such properties are not far outwith the 2km, and having regard to the practical implementation benefits of retaining the current properties within the DEPZ, it is recommended to retain the current households within the DEPZ, but to better align this with geographical features, as shown in the plan annexed at Appendix 4 to the report.

4. Implications/Socio-economic Duty

Financial

4.1 There are no financial implications as this work is chargeable to EDF under REPPIR.

Human Resources

4.2 It is not expected that this will result in any additional staffing requirements, but any such resources would be chargeable to EDF as operator

Legal

4.3 A primary purpose of this report is to address the new legal duties imposed under REPPIR.

Equality/Socio-economic

4.4 There are no significant equalities or socio-economic implications of this report.

4.4.1 **Children and Young People:**
There are no significant implications of this report. Effective emergency planning arrangements support responders to deal with an emergency, and address the impact of an emergency on the population as a whole, children and young persons included.

Environmental and Sustainability

4.5 This report advises about new emergency planning duties in relation to Hunterston A and B. Effective emergency planning arrangements support responders to deal with the environmental and other impacts of an emergency. It is important to recognise that this report is not about wider issues of the sustainability, hazards or environmental impact of nuclear power.

Key Priorities

4.6 Implementation of REPPIR as a whole will support the Council Plan theme of:

- Helping all of our people to stay safe, healthy, and active

Community Wealth Building

4.7 None

5. Consultation

5.1 Details of consultation in relation to setting the DEPZ boundaries is set out in 2.21. In addition to consultation with those within the current DEPZ, there has been consultation with local Category 1 and 2 emergency planning partners, the Communications Manager, relevant officers in neighbouring authorities and residents within the current DEPZ. There has also been consultation with Public

Health England who are the authority who provide independent radiation advice to Councils across the UK.

5.2 ACCT have also consulted and are continuing to consult the following in relation to preparation of the Off-Site Contingency Plan. Council needs to agree the DEPZ boundary before this Plan can be finalised.

(a) the operators, EDF and Magnox;
(b) Category 1 and 2 responders;
(c)NHS Ayrshire and Arran
(d) SEPA;
(f) Public Health England;
(g) Public Health Scotland

5.3 ACCT also attended the Hunterston Site Stakeholder Group in September 2019 and gave a presentation on the changes to REPPIR and its effects, how the off site plan would be changing, and the role of the council in determining the DEPZ.

Andrew Fraser
Head of Democratic Services

For further information please contact **Andrew Fraser, Head of Democratic Services,** on **01294 324125**.

Background Papers

1- Consequences Report for Hunterston A
2- Consequences Report for Hunterston B
3- REPPIR
4- Reppir Code of Practice

Appendix 1

REPPIR Code of Practice
Extracts from Guidance relating to Regulation 8 (Duty of Local Authority to determine DEPZ)

In relation to setting the DEPZ the Code says:-

"190 The detailed emergency planning zone must be based on the minimum geographical extent proposed by the operator in the consequences report and should:
(a) be of sufficient extent to enable an adequate response to a range of emergencies; and
(b) reflect the benefits and detriments of protective action by considering an appropriate balance between; i. dose averted; and
ii. the impact of implementing protective

194 The zone should be set as the minimum area the operator considers should be covered by the local authority's off-site plan in accordance with paragraph 2 of Schedule 4, as well as by the local authority applying local geographic, demographic and practical implementation factors and considering relevant protective action in the area. The emergency arrangements for the zone should be identified in the off-site plan as per Schedule 6, Part 2, Chapter 1.

195 The local authority should accept the operator's recommendation of the minimum geographical extent of the detailed emergency planning zone. The local authority should only change that area to extend it because of local geographic, demographic and practical implementation issues, the need to avoid bisecting communities or to include vulnerable groups at the outer limit of the area. The local authority is not required to have the expertise to verify the technical basis for the minimum extent set by the operator.

197 ……Although, undertaking protective action can reduce the dose received, this needs to be balanced against the stress caused to affected people and the potential harm to them that could result from this action. The size of the detailed emergency planning zone and the protective action planned in it should not put people at risk of harm from unnecessary action. An excessively large area could also divert important resource from affected areas which require the most attention. If it is considered by the operator that the local authority has increased the detailed emergency planning zone excessively so that the increase is detrimental to the effectiveness of the off-site plan, this should be discussed with the local authority and the regulator.

Appendix 2

HPS/TSSD/QS/LC/DR2566
Revision 001

Revision	Date

Nuclear Generation Limited

The Radiation (Emergency Preparedness and Public Information) Regulations 2019

Hunterston B Power Station Consequences Report

Originated By:	Emergency Planning Group	**Date:**	January 2020
Reviewed By:	Emergency Preparedness Engineer	**Date:**	January 2020
Approved By:	Technical and Safety Support Manager	**Date:**	January 2020

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Purpose

This consequence report is required in regulation 7 of Radiation (Emergency Preparedness and Public Information) Regulations (REPPIR) 2019 for the Local authority to determine a Detailed Emergency Planning Zone (DEPZ). It sets out the technical justification for the minimum distance for the DEPZ around Hunterston B nuclear power station.

The key priority for EDF Energy Nuclear Generation Ltd (EDF NG) is the safe, reliable generation of electricity. Generating safely means the prevention of accidents, recognising the potential hazardous situations or malicious acts that may cause harm to the public, our staff, the environment, or the reputation of the company and managing these events should they occur

The likelihood of an event occurring at Hunterston B power station is minimised through safety considerations in the siting, design, construction and operation and the granting and compliance with a nuclear site licence regulated by the Office for Nuclear Regulation (ONR). A Nuclear Site Licence is granted only after the ONR has fully satisfied that the licensee is a capable operator and has made an adequate safety case for the station and developed appropriate safety standards. The implementation of these standards demonstrates that an accidental event which might lead to the release of even small amounts of radioactivity is extremely low.

Despite constant vigilance, the safeguards incorporated into the design and operation of plant and support systems, and a positive accident prevention culture, hazardous situations that challenge control can occur. Having well-rehearsed emergency arrangements in a state of readiness, as required by REPPIR 2019, provides an additional layer of protection to mitigate the effects of unforeseen events.

This consequence report is developed from REPPIR regulations 4 and 5, requiring the operator, EDF Energy, to conduct an evaluation of the work with ionising radiation at Hunterston B power station to identify the hazards which could cause a radiation emergency, as defined in REPPIR regulation 2 and to assess the potential consequences of a full range of emergencies “both on the premises and outside the premises considering any variable factors which have the potential to affect the severity of those consequences”.

1 Consequence Report

1.1 Name and Address of the Operator		EDF Energy Nuclear Generation Ltd. Barnett Way Barnwood Gloucester Gloucestershire GL4 3RS
1.2 Premises details	Address	Hunterston B power station West Kilbride Ayrshire KA23 9QX
	Location	All distances mentioned in this report are a radius from the premises centre point Grid Reference NS 18570 51455, which is the centre of the reactor building.
	Date of commencement of work with ionising radiation	Work with ionising radiation has already commenced at Hunterston B power station. The construction of the station started in 1968 and the station started generating electricity in 1976.

1.3	**Recommended Minimum Geographical Extent – Detailed Emergency Planning (DEPZ)**	The Detailed Emergency Planning Zone for the site should be no smaller than 2km from the centre point noted above in section 1.2.
1.4	**Recommended Distances for Urgent Protective Actions (sheltering, stable iodine tablets & evacuation)**	The assessments required under REPPIR indicate detailed planning is justified for the urgent protective actions of administration of stable iodine and implementation of sheltering within a distance of ~ 2km from the site for protection of the public. The protective actions should be capable of being enacted as soon as is practical after the declaration of a Radiation Emergency has occurred or before a release starts to maximise the averting of dose. Stable iodine can be administered up to 5-8 hours following exposure as averting iodine inhalation dose of ~ 50% is still possible. Appropriate arrangements should be considered in this area for individuals for whom it is not possible to offer appropriate shelter in solid buildings and stable iodine tablets. This is likely to include a number of transient individuals, such as those using local recreational facilities. The rationale for the distances and timings for recommending the detail planning for implementation of urgent protective actions is provided below in section 1.7. The assessments indicate evacuation is justified within 300m. This area is predominantly inside the site fence, therefore there is no justification for planning in detail to evacuate the public as a default action within the detailed emergency planning zone. Evacuation within the DEPZ should be considered in outline planning arrangements in the event of a severe accident. It is recommended that advice be issued within 24 hours to restrict consumption of leafy green vegetables, milk and water from open sources/rain water in all sectors of the Details Emergency Planning Zone and downwind of the site to a distance of 43km.

1.5 Recommended Minimum Geographical Extent – Outline Emergency Planning (OPZ)	It is recommended that the Outline Planning Zone for the site be set as per REPPIR regulation 9 (1) a) and schedule 5 – (category 2) at 30km. Default urgent protective actions, other than consideration of food restrictions, are not recommended within the OPZ. Outline planning should consider the implementation of urgent protective actions in the OPZ for a radiation emergency which is considered extremely unlikely. It is recommended that that the outline plan consider the process for the implementation of stable iodine distribution, shelter and evacuation uniformly throughout the OPZ, with or without a warning period. Planning in outline will enable implementation of protective actions based on the assessments made during an event and determined as appropriate based on the justification of the potential for averting exposure.
1.6 Environmental pathways at risk	
	A radiation emergency at Hunterston B would take the form of a gaseous plume containing radioactive particulates. This would put the following environmental pathways at risk: • Grown foods – direct surface contamination and soil to plant • Animal products via ingestion • Water supplies through direct contamination and contaminated runoff
1.7 Rationale	

	SELECTION OF SOURCE TERM EDF Energy has considered a wide range of accident scenarios in the hazard evaluation process and selected a candidate release as the basis of the consequences assessment. The candidate release assumes the most pessimistic attributes from a number of fault sequences in terms of time to release and quantity of activity released it, therefore, does not correspond to the release from a specific individual fault. It covers faults in all facilities on site, and all modes of plant operation.

POPULATION VARIABLES

As recommended by Public Health England the exposure to the following population groups has been considered

- infants (0-1 year)
- children (1-10 years)
- Adults

Particular attention is given to the exposure to infants as the most vulnerable group

Dose to the foetus and to breast-fed infants has been considered and it has been determined that the protective measures required for these do not exceed those required by the most vulnerable group identified above.

IMPACT OF WEATHER VARIABLES

The most significant consequences off site will occur from airborne radioactivity. The impact of the consequences is dominated by the weather conditions transporting the radioactive material off site. Extremes of weather, in this context, relates to the amount of dilution of the radioactive material that occurs during transportation. While higher wind speeds transport radioactivity over greater distances, the plume tends to move faster and affects a narrower area. Slow moving wind, with little or no turbulence, reduces the dilution of the radioactivity and presents the worst-case conditions for a release of radioactive material, as the release of radioactivity remains more concentrated as it moves off the site.

This becomes relevant in terms of the potential exposure through inhalation (amount of radiation per breath) and direct exposure as the release cloud or plume passes overhead. A full range of the atmospheric conditions occurring in the UK have been considered, along with the impact of rain, as this can ‘wash’ radioactivity out of the cloud or plume leading to a build-up of deposited activity where the rain falls raising levels of radiation in the environment and the potential of increased exposure through ingestion and direct exposure. The weather conditions used to develop the distances recommended in this report account for over 95% of the expected conditions at Hunterston B from an assessment of historic weather data. This aligns with Public Health England’s recommended methodology to take account of pessimistic consequences due to unfavourable weather conditions as set out in report PHE-CRCE-50.

EMERGENCY RELEASE AND RESPONSE TIME VARIABLES

The effectiveness of the urgent protective actions is determined by when implementation is achieved relative to the release and passage of the radioactive material. It is assumed that the most limiting scenario occurs when the release commences before emergency plans are activated. The duration of the candidate release is approximately 5 hours at which point the release will effectively terminate because the depressurisation of the Reactor Coolant System results in

limited motive force to expel radioactivity, or because emergency actions have reestablished containment.

Despite best efforts to rapidly assemble the emergency response organisation to determine the protection strategy and to notify members of the public to take action, the delay in doing this will reduce the effectiveness of the protective measures. A conservative time factor for implementing the protective measures of 2 hours has been considered when assessing distances determined by the effectiveness of protective actions. However the distances recommended in this report are based on a best-case scenario where protective actions can be implemented in advance of exposure occurring.

No assumptions should be made about the availability of a warning period to enact the emergency response and protective actions. Whilst faults could develop which would give a warning period of an hour or more before a release of radiation from the site it should not be assumed that this would be the case. Therefore any protective actions and emergency plans should be based on the conservative basis that no warning period would be available and should therefore be capable of being activated as soon as possible.

PUBLIC PROTECTION GUIDANCE

Public Health England (PHE) provide the UK guidance for emergency planning thresholds on dose for guiding decisions on actions. Emergency Reference Levels (ERL's) are dose criteria that apply to the justification and optimisation of sheltering-in-place, evacuation and administration of stable iodine. These are most appropriately expressed in terms of averted dose and are given in the table below.

Recommended ERLs for the planning of sheltering-in-place, evacuation and administration of stable iodine protective actions

	Effective dose or organ dose	**Averted dose (mSv)[a]**	
		Lower	**Upper**
Sheltering	Effective	3	30
Evacuation	Effective	30	300
Stable iodine	Thyroid[b]	30	100

a In recognition of their higher cancer risk, the doses are those potentially averted in young children
b mSv equivalent dose to the thyroid

The key objective with planning and deploying urgent protective actions is to achieve more good than harm in context of the risks from radiation exposure and the risks associated with the protective measure. Hence the arrangements in place should be proportionate to the risk and offer a trade-off between protection against radiation dose and the detriments that protective actions can have when implemented.

As indicated in REPPIR, the lower ERLs are used in the determination of the distance for justifying detailed planning for implementing urgent public protective measures.

	APPLICATION OF THE EMERGENCY REFERENCE LEVELS The recommended minimum distance for detailed emergency planning has been based on consideration of distances to which it would be proportionate to administer the urgent protective actions of evacuation, shelter and stable iodine. The nature of radiation emergency at Hunterston B means that iodine radionuclides are the dominant hazard. Therefore, the distance to which the administration of stable iodine is considered proportionate is the greatest of any of the protective actions and is the distance used to determine the minimum size of the Detailed Emergency Planning Zone. DISTANCE TO LOWER ERL FOR STABLE IODINE The distance across which it is justifiable to administer stable iodine as a protective action has been calculated as ~2000m from the centre point of the site based on the lower emergency reference level for an infant, identified as the most vulnerable group. This assumes the maximum possible benefit afforded by this protective action by it being administered before or very shortly after exposure. Whilst it is accepted that there may be a delay in notifying the public of a radiation emergency, resulting in the protective action being less effective, it is considered appropriate for public protection to base the distance given in this report by considering the most effective outcome. DISTANCE TO LOWER ERL FOR SHELTERING The distance across which it is justifiable to recommend shelter as a protective action has been calculated as ~950m from the centre point of each site based on the lower emergency reference level for an infant, identified as the most vulnerable group. Whist this distance is shorter than that of stable iodine, it is recommended that the two protective actions be deployed together and therefore it would be reasonable to extend shelter as a protective action to the same distance as that of stable iodine. This follows public protection guidelines set out by Public Heath England in report PHE-CRCE-049. DISTANCE TO LOWER ERL FOR EVACUATION The distance across which it is justifiable to recommend evacuation as a protective action has been calculated as ~300m from the centre point of the site based on the lower emergency reference level for an infant, identified as the most vulnerable group. This area is largely contained within the site fence in most places and contains no permanent residents. It is therefore judged that the use of evacuation as a default urgent protective action within the Detailed Emergency Planning Zone is not

justified. Evacuation within the DEPZ should be considered in outline planning arrangements in the event of a severe accident.

DISTANCES FOR FOOD RESTRICTIONS

Averting exposure to radiation through ingestion of locally produced food stuffs and drinking water is not considered to be an immediately urgent protective measure due to the delay in exposure and the ability to issue advice within 24 hours from the start of the release.

Assessments indicate that the radiation concentrations in milk under likely dispersion conditions would exceed the Euratom Maximum Permitted Levels (MPL) to a distance of ~ 41km and concentrations in unprocessed leafy green vegetables would exceed the MPLs to a distance of ~43km. It is recommended that for ease of communication the advice be issued for a single distance of 43km. This should also include advice against drinking of rainwater or water from open sources to the same distance.

Analysis shows that the distance to which food restrictions would be required will vary significantly based on the weather factors on the day with the presence of rain having a significant influence. Whilst it may be necessary to implement food bans beyond the distances recommended it is considered proportionate to plan for the extent suggested, which can then be reviewed and adjusted as necessary by the appropriate authority once an appropriate emergency organisation has been established.

OTHER EMERGENCY PLANNING CONSIDERATIONS

Appropriate arrangements should be considered in the DEPZ to a distance of 2000m for individuals for whom it is not possible to offer appropriate shelter in solidly built buildings and stable iodine tablets. This may include transient populations such as users of local recreational facilities.

Whilst potential dose to such individuals is not expected to exceed the lower ERL for evacuation, the doses could be above the lower ERLs for sheltering and stable iodine. Appropriate arrangements will therefore be needed to ensure that any individuals that fall into this category can be adequately protected, which may be most practically achieved by evacuating them from the immediate area.

There are a range of potential events which could occur at the site which relate to conventional industrial hazards (e.g. fires, chemical spill) which may require an emergency response, including off site support, but do not lead to a release of radioactive material. These would be declared as a Site Incident. It is understood that such events could be perceived as a radiation emergency by the public, and therefore all such events will include necessary notifications to relevant organisation so that reassurance requirements can be enacted.

	SUMMARY RECOMMENDATIONS OF DISTANCE TO LOWER ERL The assessments indicate that detailed planning is justified at Hunterston B power station within at least 2000m and the urgent protective actions of administration of stable iodine and implementation of sheltering are justified within a maximum distance of 2000m from the site for protection of the public. 2000m is the minimum distance for the DEPZ. The local authority can choose to extend this in line with Regulation 8(1). It is not recommended that urgent protective actions be extended beyond the distances specified in this report without taking appropriate public protection advice as increasing protective actions beyond the recommended distances could do more harm than good. The protective actions should be capable of being enacted as soon as is practical after the declaration of a Radiation Emergency (Off Site Nuclear Emergency) or before a release starts to maximise the averting of exposure. Consideration should be given to the pre-distribution of stable iodine tablets within the area likely to be affected. Stable iodine can be administered up to 5-8 hours following exposure as averting iodine inhalation dose of ~ 50% is still possible. Evacuation is not considered to be justified as a default protective action in the DEPZ.

2 Distribution

Station Director			
TSSM			
QMGH			
EPE			

External Communications Manager			
Louise Driver		**Head of Emergency Planning**	**EDF Energy**
Josh Tarling		**Emergency Planning Group**	**EDF Energy**
Craig Hatton	***External***	**Chief Executive**	**North Ayrshire Council**
Jane McGeorge	***External***	**Coordinator**	**Ayrshire Civil Contingencies Team**
Lesley Jeffery	***External***	**Civil Contingencies Officer**	**Ayrshire Civil Contingencies Team**
Stuart Fannin	***External***	**Site Inspector**	**ONR**
REPPIR19Compliance @onr.gov.uk	***External***	**REPPIR Compliance Lead**	**ONR**
TSSM (Equivalent)	**External**	**TSSM (Equivalent)**	**Hunterston A Station**

Figure 1 – Recommended Minimum Distance for Detailed Emergency Planning

Appendix 3

Radiation (Emergency Planning and Public Information) Regulations 2019

Consequences Report for Hunterston A Decommissioning Site

The following report is provided to the North Ayrshire County Council in accordance with REPPIR 2019, Regulation 7(5), with the particulars of the report in accordance with REPPIR 2019 Schedule 4.

Factual Information

(a) The name and address of the operator:

Mr J Grierson, Regional Closure Director,
Magnox Ltd.,
Hunterston A Decommissioning Site,
West Kilbride
Ayrshire
KA23 9RA

(b) The postal address of the premises:

Hunterston A Decommissioning Site,
West Kilbride
Ayrshire
KA23 9RA

Hunterston A is a decommissioning nuclear power plant site, without a significant presence of irradiated fuel.

(c) The date on which it is anticipated that work with ionising radiation will commence:

Work with ionising radiation is already underway at the premises.

Recommendations

(a) The proposed minimum geographical extent, if any

There is no distance beyond the site's boundary fence within which urgent protective action to mitigate harm from the unintended release of radioactive material may be needed.

It is recommended that no detailed off-site emergency planning is required.

Rationale

(a) The rationale for the above recommendation on the minimum distance for which urgent protective action may be needed is as follows:

Assessment carried out by Magnox Ltd has established that there is no event, whether caused by error or omission by the operators or caused by external factors, which can credibly result in the release of sufficient radioactive material from the Hunterston A site to the atmosphere to cause public serious harm. As such, there is no scenario where urgent protective action to reduce public dose uptake is needed.

There is a region close to the site where protective actions to mitigate public dose uptake could be considered in the highly unlikely event of a large aircraft impacting the site. If the impact were directly onto waste bunker 1 (a relatively small facility on the site), the resultant aviation fuel fire will cause the release of some radioactive particulates into the air. For members of the public within 500m of the site boundary, their dose could possibly exceed the lower ERL for sheltering (the point where the option to shelter the public should be considered) but nowhere beyond the site fence will it exceed the upper ERL for sheltering (the point where urgent protective action should normally be taken).

It has been established by assessment that in the most unfavourable weather conditions, the consequences of a large aircraft impact directly on to bunker 1 could lead to a dose of up to 32mSv.

This is for a member of the public who is as close as possible to the event, and who remains there for the whole period that the fires continue. However, if the weather was typical for the location (i.e. a moderate breeze), the dose would only be up to 9mSv and then only if the wind was blowing directly towards the person. The majority of this dose uptake will arise whilst the fires in the bunker continue to burn, with the dose uptake caused by inhalation of the radiologically contaminated smoke. Whilst it would be appropriate to consider asking the public at this close location to take shelter to avoid dose uptake, given the true nature of the event (a catastrophic aircraft impact with a debris radius likely to be of the order of a few hundred meters) and the trivial health significance of the predicted dose, it would be difficult to judge this action should be a priority.

The consequences of the scenario reduce with distance. For weather which is typical for the site, the dose received during the whole course of the event will only exceed 5mSv within a distance of 170m from the bunker (effectively, this covers a 200m stretch of the public road passing the site; and only when the wind is blowing from the East). For people beyond this distance, the dose is sufficiently small it is unnecessary to take any action to mitigate the dose. It is likely that any actions taken by the authorities, such as requiring the public to shelter or to evacuate the area, will do more harm than that arising from the unmitigated dose.

Bunker 1 is currently being emptied of radioactive materials. It is anticipated that by the end of 2020, the bunker will have been emptied and after that time there will be no further scope for an event, of any credible nature, to result in a significant release of radioactive material from the Hunterston A site.

Appendix 4

North Ayrshire Council

Scale: 1:20,085
Date: 09/01/2020

Hunterston Centre

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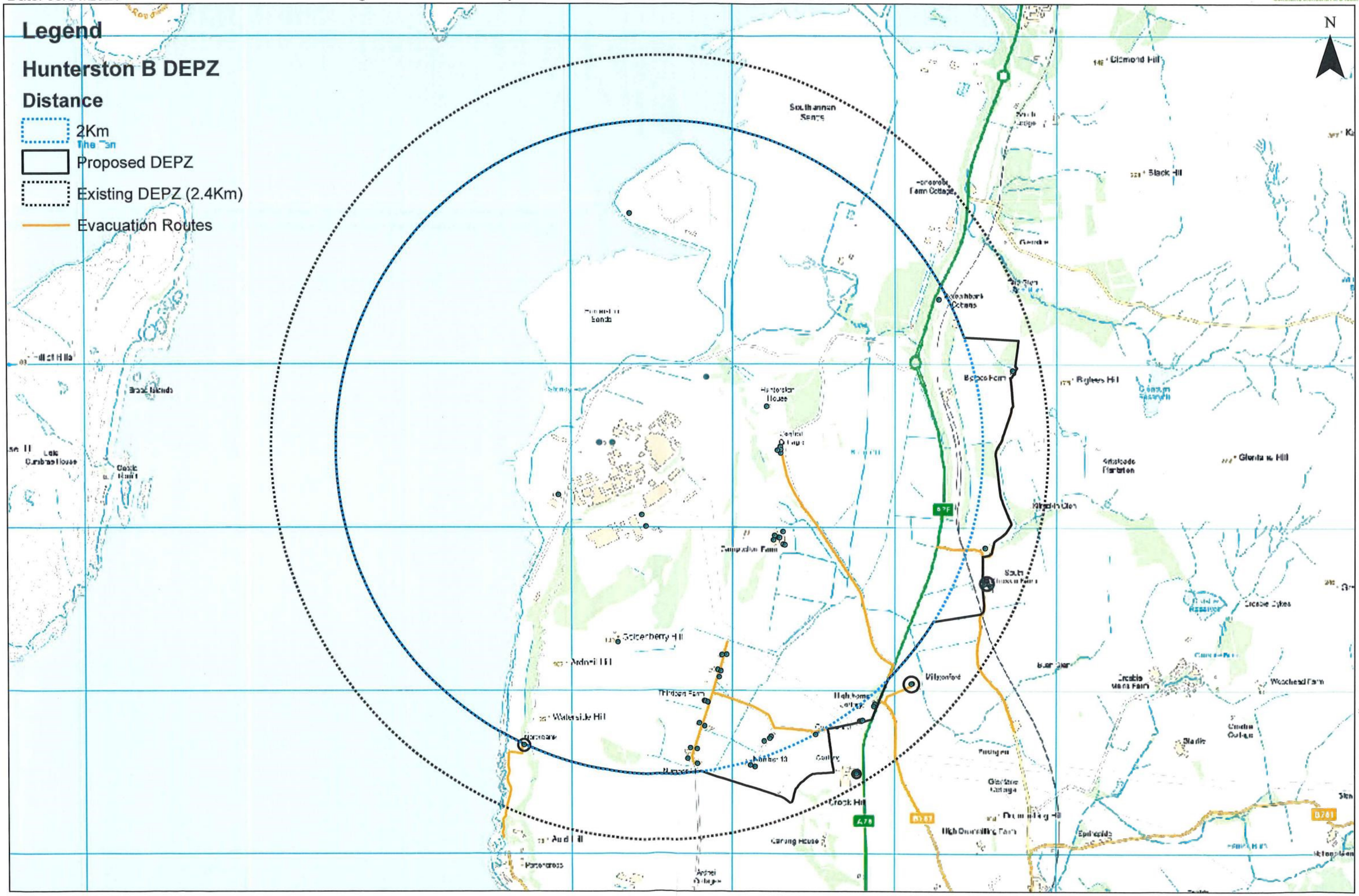
North Ayrshire Council
Comhairle Siorrachd Àir a Tuath