

Comment/Date	Person/Organisation Submitting Comment	Summary of Comments Relevant to the Draft PDMG Code and/or RIS	Suggested Change to PDMG Code
1 – 24/11/2003	Russell Robinson – Occupational Hygienist, DBIRD NT	<ul style="list-style-type: none"> • Schedule 3, sections 3.1 and 3.2: When Schedule 3.1 and 3.2 are read sequentially, the radiation dose does not seem to be dose in terms of effective dose rate or equivalent dose rate but rather kerma. If this is the case, it should be stated whether or not this is kerma in air or in water or in soft tissue. I assume that air kerma is implied. • Schedule 3, sections 3.1.1(c): This line is vague. It implies that the error due to energy response of the meter should be combined with the measurement uncertainty. The latter is combined random errors due to counting errors of background and source count rate. Background can vary. There are several choices for the degree of confidence. It does not state whether or not other sources of error should be included. Combining systematic and random errors can be done (see NIST homepage) but it is not conventionally done. I have no idea what this whole paragraph means and therefore I would have to try to guess it or get some one else to guess what it means. • Safety Guide, Section 4.2: I don't believe that a suitable conversion factor for combined gamma/neutron sources should be up to individual Regulatory Authorities because this could result in different estimates of effective dose between different jurisdictions. This factor should be checked by ARPANSA as part of its purpose. 	<ul style="list-style-type: none"> • The removal of air kerma here appears to have been an oversight. All references to air kerma have been removed and replaced with the agreed wording in relation to ambient and directional dose equivalents. • The WG did not agree and believed that this clause was clear. The clause was not changed. The accuracy of the survey meter, including all potential sources of error, must be within $\pm 20\%$. • While the WG were of the same opinion that the factor should be agreed, only the relevant regulatory authority is in the position to advise what that figure should be. No change was effected.
2 — 25/11/2003	Gerard Laurence — University RSO, University of Adelaide and Flinders University of SA	What is the situation with bodies corporate - are they automatically the same as (or it is implied perhaps) natural persons in the definition of "responsible person"?	The obligation here appeared clear given the agreed wording of "Responsible Person". "Person" in law covers both corporations and individuals.
3 — 25/11/2003	Gerard Laurence — University RSO, University of Adelaide and Flinders University of SA	<p>What are the criteria by which ARPANSA chose the list of organisations to be directly informed of the Proposed Code and to be directly asked for their input or comments?</p> <p>I notice that a number of organisations in WA are directly listed and several in Victoria, but none in South Australia. Given the use of NMMs in vineyard practice, the existence of agricultural research and training institutions which use NMMs in SA it seems odd that no direct comment was requested from this state.</p>	Each jurisdiction was asked to provide names and addresses of companies and individuals who should be consulted within their jurisdiction. All names provided were included in the RIS. SA did not provide any names and as such, no SA companies were listed. Following the release of the Code and RIS for public comment, SA provided a list of names and these companies were forwarded details accordingly.
4 – 1/12/2003	Keith W Terry – Radiation-Wise	<ul style="list-style-type: none"> • The draft Code of Practice and Safety Guide do not reflect the developments in personal radiation monitors since the preparation of the previous Code. Optically stimulated luminescent (OSL) 	This entire section of the Code has been revised to make the type of personal monitoring device completely generic. This

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		<p>dosimeters, commonly referred to as Luxels, are now widely used world-wide, including Australia, in addition to the older types of thermoluminescent dosimeters (TLDs) and (photographic) film badges.</p> <ul style="list-style-type: none"> • Section 4.1.1: Replace “thermoluminescent dosimeters (TLDs) or film badges” with personal monitoring devices. <ul style="list-style-type: none"> ❖ Amendment to Note to 4.1.1: Replace “These devices will be referred to collectively as personal monitoring devices” with ‘Personal monitoring devices include optically stimulated luminescent dosimeters (Luxels), thermoluminescent dosimeters (TLDs) and photographic film badges’. • Section 4.1.2: Insert ‘alternative’ before “personal monitoring devices” AND delete “other than TLDs or film badges”. • ALTERNATE SUGGESTIONS: <ul style="list-style-type: none"> ❖ Section 4.1.1: The Responsible Person or service provider must ensure that optically stimulated luminescent dosimeters (Luxels), thermoluminescent dosimeters (TLDs) or film badges⁶ available from personal monitoring services approved by the relevant regulatory authority, ... ❖ Section 4.1.2: The Responsible Person or service provider must seek advice from the relevant regulatory authority if personal monitoring devices other than Luxels, TLDs or film badges are required. • Safety Guide, Section 4.1: The Responsible Person in relation to the radiation gauge should seek the advice of the relevant regulatory authority concerning the use of personal dosimeters other than film badgesor, thermoluminescent dosimeters or optically stimulated luminescent dosimeters. 	<p>change allows existing, emerging and unknown new technologies in personal monitoring to be utilised subject to the approval of the relevant regulatory authority.</p> <p>In accordance with that change to the Code, the paragraph in the Safety Guide (in section 4.1) was removed.</p>
5 – 1/12/2003	Ms Hazel Upton, Managing Health Physicist, RHB, WA	<ul style="list-style-type: none"> • Replace “clause 2.1.1” with “clause 2.1” throughout the draft Code and SG as clause 2.1.1 does not exist. • Section 3.2.3: Suggest replacement of word “examined” with “examined and records maintained”. This would be to ensure record keeping of examinations, which follows from clause 2.3.6 of the 1984 Code of Practice. • Section 4.1.1: Suggest replacement of words “(TLDs) or film badges ... or other monitoring devices,” with “(TLDs), film badges or other personal monitoring devices approved by the relevant regulatory authority”. <i>Landauer OSL badges are also approved for use in Western Australia.</i> • Section 4.2.1: The term “readily available or accessible” has a 	<ul style="list-style-type: none"> • An oversight that has been corrected. • Agreed. Change effected. It should be noted that this clause is now 3.2.4. • Covered by amendment outlined in comment no. 4 above. • The footnote here was ‘tightened’ to

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		<p>footnote definition of “within a reasonable time”. This is not very clear.</p> <ul style="list-style-type: none"> • Section 5.1.2(b)(i): Where does the figure of “10 $\mu\text{Sv/h}$” as a limit for radiation levels outside a store originate? • Section 5.1.2(e): Suggest inclusion of a third point as follows: “(iii) the contact details of the Responsible Person” • Schedule 2.2.1(a): Where does the figure of “250 $\mu\text{Sv/h}$” as a limit for radiation levels at 5 cm from the surface of the gauge originate? • Glossary Activity: The term “human activity” is not used in either document. • Glossary relevant regulatory authority: Replace “gauges” with “gauge” 	<p>provide for details on how to achieve this, i.e. to be placed in the Radiation Management Plan. Clause 2.1(c) of the RMP was also amended accordingly.</p> <ul style="list-style-type: none"> • This figure was based on the 40% decrease of the annual dose limits specified in ICRP 60 and RPS-1. • These were considered to be minimum requirements and the need to put, for example, the contact details of the CEO of an organisation on the outside of a store was considered excessive. • This was discussed in the RIS in paragraph 27, dot point 5. • This was a standard definition as included in RPS-1. No change was considered necessary. • Done
6 – 11/12/2003	Ian Dumbrell - Senior Research Scientist, Dept Conservation and Land Management, WA	<ul style="list-style-type: none"> • Section 3.2.2(b)(ii): For this to happen the responsible person must feel confident that either the supplier will take the gauge back as a trade in on a new one or buy back for resale, and/or the gauge will be accepted for disposal. There needs to be guarantees in place before the responsible person can give details of what they intend to do with the unwanted gauge. • Section 3.2.9: What are appropriate intervals? I think this needs to be more prescriptive by defining appropriate intervals. • Section 3.2.11: Can the responsible person and the radiation safety officer be the same person ? • Schedule 3, 3.1.1 (a) - The radiation survey meter required by clause 4.2.1 must - have sufficient measurement range to measure radiation dose rates at least throughout the ranges of 1 uGy h^{-1}, or its equivalent, to 500 uGy h^{-1}, or its equivalent. Radiation levels in section 5.1.2 and Schedule 2 section 2.2.1 are given in uSv h^{-1}. If the unit for both a gray and a sievert is J kg^{-1} then the terms should be kept consistent between the survey meter and prescribed 	<ul style="list-style-type: none"> • “Intend” was considered to be the critical word in this clause. This clause was meant to prompt consideration of the ultimate disposal of the gauge. • A paragraph (paragraph 2) has been added into Section 3.1 of the Safety Guide to clarify the term “appropriate intervals”. • Yes. A footnote (footnote 6) has been added to indicate that this is the case. • The change outlined in comment 1 above now covers this comment.

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		radiation levels. That is either the meter ranges should be in $\mu\text{Sv h}^{-1}$ to conform with the radiation levels prescribed, or the radiation levels prescribed should be in $\mu\text{Gy h}^{-1}$ to conform with the survey meter.	
7 – 15/12/2003	Paul Marks – Lecturer, RMIT, Vic	<ul style="list-style-type: none"> • Is a Radiation Protection Plan and a Radiation Management Plan one of the same? • Definition of a Service Provider? Should it be in the glossary? • What sort of licence will an operator who also wants to repair/maintain a gauge need? 	<ul style="list-style-type: none"> • Yes. The WG also agreed on a change to the terminology to “Radiation Management Plan” as the plan was considered to be a management tool. • A definition of “service provider”, and “service technician”, has now been added to the glossary. • This will be jurisdiction specific and does not need to be covered here.
8 — 18/12/2003	Neal McGurk – Manager – Gemswan Pty. Ltd.	<ul style="list-style-type: none"> • The term ‘Service Provider’ does not appear in the Glossary section. I believe that the Code of Practice would benefit from this inclusion. • Also, although Employee would initially seem a straightforward definition there is an increasing trend for companies to reemploy ex-employees as consultants. Depending on the committees definition of Service Provider I believe it may be prudent to examine the definition of Employee at the same time. 	<ul style="list-style-type: none"> • Covered by the addition of the glossary item outlined in comment 7 above. • The definition of “employee” has been removed. Reference within the Code is now to users or operators.
9 — 19/12/2003	Andrew Walker — Geopave	I have read the document and generally am happy with the technical content. More detailed comment will be sent on Monday 22 Dec 2003	Noted. No action required.
10 — 20/12/2003	Kent Gregory — RPD, EPA, South Australia	<ul style="list-style-type: none"> • Section 4.1.1: TLD’s and film badges seems too specific. Why not use ‘personal monitoring devices’, as per the note to 4.1.1, so that other types of monitoring technology is not excluded? • Section 4.1.1(a): What about assistants? • Section 4.2.1: What about a contamination meter for service providers potentially working on a leaky source? There should be something, perhaps in the Guide, to raise awareness that survey meters are unlikely to detect hazardous levels of unsealed material. • Section 5.2.4: Passenger compartment may need clarification. There are users who transport them in the rear of commercial vans. The Transport Code does not prohibit the transport of some packages (eg moisture probes) in passenger compartments. • Section 5.2.6: What does ‘ensured’ mean? The need to take great care with security of gauges should be strongly emphasized. There has been a recent incident in SA of a gauge stolen from a parked 	<ul style="list-style-type: none"> • Covered by the amendment to Section 4.1 outlined above (see comment 4). • Assistants will be covered by jurisdictional requirements. • A short statement on contamination monitors has been placed in Section 4.2 (paragraph 5) of the Safety Guide. • Paragraphs 562(a) and 563 of the Transport Code cover this. The WG agreed that the clause should remain to highlight the requirement for all users. • Security of sources will be covered in the National Directory. The clause was considered acceptable to highlight the

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		<p>vehicle.</p> <ul style="list-style-type: none"> • Section 5.2.7: This requirement, and 5.2.4, 5.2.9 and 5.2.10, are covered by the Transport Code. I suggest they should not appear in the Code section of this document, but may have a place in the Guide section. • Schedule 1.2.1: if they are all special form, then will the “ISO class no” space in label 1.4 always say “ISO 2919-1999”? If so, I suggest it is redundant information and should be removed from the label. • Schedule 3.2.3: There is no requirement to possess a neutron survey meter, so why impose this requirement? It may act as a deterrent from purchasing one. • Glossary: incident: Only incident is defined in the National Directory. Accident and emergency are not defined by the directory. I suggest aligning the language used in this document with the National Directory. • Safety Guide, Section 4.1, para 2.: This may imply that anything other than TLDs and film is of a lower standard. • Safety Guide, Section 4.2, para 2.: This may need more explanation. It may give the impression that owners should purchase a calibration or check source. 	<p>need for security measures.</p> <ul style="list-style-type: none"> • The WG disagreed. There is often confusion as to whether “mixed class” placards can be used where there are multiple dangerous goods being carried. 5.2.9 and 10 clarify this matter. The other 2 clauses mentioned simply highlight what is needed and were considered acceptable to remain. • The “or” in Schedule 1.2.2 allows for other markings and should remain. Further, the ISO standard lists classifications of sources based on severity of tests performed on the capsule. The classification number for a particular test needs to be listed here. • The wording of the clause has been changed to reflect that “where a neutron survey meter has been obtained” it will need to be calibrated. • Accident has been removed from the Code and Safety Guide and the definition of “incident” has been amended slightly to reflect this. • The changes already made (see comment 4) have covered this comment. (The changes have also resulted in the removal of paragraph 2.) • Section 4.2 has been amended to include the statement that “This can be effected by comparing measurements against the known radiation profile of the gauge”.
11 — 22/12/2003	Andrew Walker — Geopave	<ul style="list-style-type: none"> • Section 3.1.1 AND Glossary – supplier: The definition of the term "supplier" does not include the function of hiring or lending of nuclear gauges for use by other licensed users, who are employed by different companies. • Section 3.1.6(c)(iii): should read "encapsulation details of the radioactive source" • Section 3.1.7(a): Does this clause have any implication for 	<ul style="list-style-type: none"> • The definition of “supplier” has been amended and now covers lessors and hirers. • Done. • This should be covered by the change

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		<p>companies that hire nuclear gauges for use by other licensed users??</p> <ul style="list-style-type: none"> • Section 3.2 AND Glossary – Responsible Person: The definition of "Responsible Person" is unclear. Apparently the term "person" is used in the strict legal meaning, and consequently includes the legal entities of companies, testing authorities and other organizations, as well as natural persons, ie. humans such as John Smith. In addition, the term "employer" is not used clearly anywhere, and the employer has a significant responsibility under OHS legislation. The term and/or definition "Responsible Person" should be altered to make clear that this refers to the employer/management/owner. The responsibilities assigned to the Responsible Person need to be carried out by a staff member. It appears that this is intended to be the Radiation Safety Officer, as the RSO duties in the Safety Guide align with the responsibilities. Combined with no formal mention of employer, there is a significant lack of clarity in tasks. • Section 3.3.1: Does a service provider have to meet the responsibilities of the Responsible Person? • Section 3.3.1 AND glossary – service provider: A definition of service provider is required in the glossary. The text in 3.3 does not distinguish "service provider" as carrying out repairs and maintenance, from other uses of nuclear gauges. The closest is at Line 429 "... provide a service ...". However GeoPave, for example, and other testing authorities as defined by NATA, would promote itself, and themselves, as providing a service, ie the service of field compaction testing using a nuclear gauge. The definition of service provider needs to make clear that repair and maintenance are the service items. Some of this definition needs to be in Clause 3.1 so that it is clear what class of persons Section 3.3 is directed to. • Section 3.3: Does Section 3 apply to companies / testing authorities providing calibration services, as distinct from repair and maintenance services ? • Section 4.1.1: A definition for "Thermoluminescent dosimeter" should be included in the glossary. • Schedule 4, footnote 3: Should the text of Note 3 to the ARPANSA table be replaced with the word "deleted", and the "NOTE:" be correspondingly altered. 	<p>of definition to 'supplier' outlined above.</p> <ul style="list-style-type: none"> • The WG disagreed. The tasks appear to be clearly defined. "Responsible Person" was an agreed term of the NUIP(RC). • The new definition of "service provider" should cover this issue. • The new definition of "service provider" should cover this issue. • The new definition of "service provider" should cover this issue. • This has been removed with the change to Section 4.1 of the Code. • Schedule 4 has been replaced by the appropriate section of the National Directory.

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		<ul style="list-style-type: none"> • The content of Clauses 6.2 & 6.3 is of no benefit to anyone who obtains a gauge. These issues need to be addressed by the manufacturer or supplier. • Safety Guide, Section 6.2: The text in Clauses 6.2 and 6.3 should be moved to Schedule 1 & 2 of the Code of Practice, and the "should" changed to "must". Clause 6.2 could be moved to Schedule 1.1. • Safety Guide, Section 6.3: The 1st para could be moved to be between Schedule 2.1.2 and 2.1.3, and the 2nd para could be moved between Schedule 2.1.9 and 2.1.10, or deleted. 	<ul style="list-style-type: none"> • This is only guidance material and was considered acceptable to remain. • The WG agreed that these clauses should remain non-mandatory and should remain in the Safety Guide. Am-241 is very radiotoxic and has quite a long half-life but is the most appropriate source to use at the time of drafting the Code. These clauses provide guidance where new sources are considered for use in the future. • These clauses were considered to be guidance only and could remain. Some technologies might provide for sources that can be removed.
12 — 6/1/2003	Phil Taylor, Manager OSH, Dept of Agriculture WA	<ul style="list-style-type: none"> • Section 2.1.11: Parts (a) and (b) refer to having responsible person's name etc on gauge and transport case. As we are a large organisation spread over WA having the responsible person identified is not necessarily the most appropriate. This person could be the CEO (under state legislation) and based in Perth whereas gauges could be located in Kununurra or Esperance, thousands of kilometres away. We suggest that the radiation safety officer or licence holder could also be options for contact name. • Safety Guide, Annex A(S16): We also note that the example label does not have any of the details required under point 2.1.11 of the Code. This example label may need to be modified to account for the code's requirements. • Glossary – accident: it is noted that the term accident is used through out the code and subsequently defined in the glossary. We consider that from a safety perspective that the word 'incident' should be used instead and subsequently defined in the glossary. The term incident is widely used in safety and links to the fact that there is a cause or causes and not just an accidental event. Our focus should be on any cause(s) and subsequent prevention. • Section 3.3 Responsibilities of the service provider: the term service provider is not defined and when I read it for first time I initially understood it to mean a contractor rather than an organisation that maintains/services the gauges. I suggest a short definition in the glossary may be useful. 	<ul style="list-style-type: none"> • These were considered minimum requirements. Other contact details, such as the RSO or licence holder, could also be placed on there as appropriate. • Disagreed. This label applies to the gauge and source, which will not change, and not the owner, which might. • Accident has been removed. • The new definition of “service provider” should cover this point.

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13 – 11/12/2003	Ross McLeod, Technical Officer, NSW Agriculture	<ul style="list-style-type: none"> It is a common occurrence when using a neutron moisture gauge in an agricultural research situation to raise the height of the gauge during measurement by placing it on top of a stand. These stands are usually custom made and are not part of the gauge when supplied. Their purpose is to maintain over time a constant height between the starting position of the source and each depth where measurement is taken. This is needed because there are changes in the amount of access tube that protrude above the soil surface over time due to swelling and shrinking of clay soil in particular. These stands are approximately 30cm high, made from steel, and are strong enough to take the weight of the neutron moisture gauge. In the SAFETY GUIDE, would it be possible to address these custom made additions that are necessary in our work. Guidelines for the best materials with which to construct these stands could be useful in the safety guide (these stands are carried and therefore need to be light enough to carry). The operator’s feet/lower legs are exposed at close range (25cm) to the source as it momentarily passes down from it’s shielding into the ground via the access tube. The time of exposure to this section is longer if the source assembly does not pass smoothly into the top of the access tube. 	<p>The WG agreed that there could be too much variability in the type of extra devices that could be used in relation to PDMGs to cover it in the Code or Safety Guide. Anything relating to “other” equipment should be placed into the radiation management plan.</p>
14 – 27/1/04	Lorraine Plues, Director Radiation Control, Department of Environment and Conservation, NSW	<ul style="list-style-type: none"> Separation of the Code (mandatory) and the Safety Guide (non-mandatory) makes it clear to the regulated community what compliance is required. Throughout the document, replace the word ‘licence’ with the word ‘authorisation’ and its derivatives. The use of the word licence is too specific, whereas an authorisation may take on many forms of a legal instrument. The responsibility for compliance rests with the all persons identified. Include in the Glossary terms for Responsible Person eg owner, supplier, lessee, employer(?), employee(?), service provider (?), manufacturers, importers and agents to assist readers to determine to whom this applies. In NSW a lessee is considered to be the owner but this may not apply in other jurisdictions. Need to define the role of the service provider (should footnote 9 refer to employee?) and the difference between the role of the responsible person and the employee, as this is not clear. Replace employee with a better term eg operator or user, as an employee may not operate the gauge. It would be helpful if the Code and/or Guide contained a section for the requirements placed on operators (users) of soil density or 	<ul style="list-style-type: none"> Noted. Done. Also, modified version of “authorisation” from the National Directory added to the glossary. Amended definition of “supplier” should cover. Done. Employee removed from Code and Safety Guide. Requirements already included in the Code. Further, Section 3.4 now applies

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		<p>moisture gauges so that they can be the basis of conditions of licence for the use of portable density/moisture gauges.</p> <ul style="list-style-type: none"> • It is also recommended that the section called ‘Responsibilities of the Employee’ be renamed ‘Responsibilities of the User or Operator’, as this would bring it more into line with the licence conditions. Using ‘employee’ does not cover situations where a person is an employee of a contractor providing services to a company. • The Code and Guide are written as though the appointment of Radiation Safety Officers (RSOs) is compulsory in all states and that the functions for RSOs will be consistent with what is required in this Code/Guide. At this time any clause referring to an RSO is not relevant for NSW and it is recommended that such clauses be made non-mandatory. Appointment of an RSO may not be appropriate for single operators and small business. Need to clarify that a person responsible for the duties of an RSO can be a contractor (see NSW recommendations on www.environment.nsw.gov.au). • Incidents and accidents, transfer, disposal, personal monitoring devices and storage and shielding requirements are managed by State legislation. If there were to be national uniformity with the management of these issues, a separate guideline for each of the topics would be an easier way for the States to adopt these requirements. • In the Code use the generic term personal monitoring devices and delete reference to the specific that will be dealt with in a code for this purpose. Specific items could be in footnote as current examples. • Many of the clauses in this Code/Guide could be adopted as conditions of registration for moisture/density gauges. It would be useful if the clauses referring to the way the soil/moisture density gauges are maintained were separated from the clauses relating to use or operation and this would facilitate their adoption by regulators. • A definition or explanation is required for: Service provider – this terminology is not used in the NSW Radiation Control Act 1990 and as such it cannot readily be relate to that Act. The difference between and owner and a service provider (contractor) needs a more detailed explanation – 	<p>to “operators” or “users”.</p> <ul style="list-style-type: none"> • Done. • The WG disagreed with this comment. It is presumed that someone in an organisation would have these, or similar, duties in NSW but might not be called an RSO. The duties of the RSO were considered important functions to maintain radiation safety in an organisation. There is nothing in the Code that prohibits an external person from acting as an RSO. • Noted. • Covered by change to Section 4.1. • Noted. • “Service Provider” is now defined and should cover this issue. “Owner” is not defined but obligations are covered under “Responsible Person” or “Supplier”.

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		<p>for example, in some cases these may be the same person. Owner – it is not clear if the term owner includes those items that are leased or let out on hire and therefore would include the lessee or the person who takes it on hire, as is the case in the NSW legislation.</p> <ul style="list-style-type: none"> • The Code should be revised to emphasise security issues and clearly differentiate between security and safety. At the least, the purpose of the Code should mention security of sources. • Section 1.4: After line 190, reinstate wording from 1984 Code, which conveys that moisture/density gauges are capable of measurement of either density or moisture or both. • Section 2: The frequency of the review requirement is not specified, therefore of limited value to regulators during compliance auditing. Also, the Code gives no guidance as to who may review the RPP. • Section 3.1.1 The wording of this section is ambiguous. What does ‘all persons under the supplier’s care’ mean? Further, an owner can be a supplier if a gauge is on-sold or transferred to another person. Are not suppliers owners at the time this requirement is to be applied? Ownership of a newly purchased gauge does not occur until the purchaser accepts that the goods are fit for purpose. Appears to be an ‘owner’ requirement. • Section 3.1.4: It should be the responsibility of the owner to be aware of the legal requirements for disposal or otherwise when the gauge has reached the end of its useful life or is no longer required. The requirements for disposal may vary from state to state and the supplier would need to be aware of the requirements in each jurisdiction if the supplier and buyer are from different states. It may be preferable to require that the supplier advise the buyer in writing that s/he should be aware of the requirements in their jurisdiction for disposal. • Sections 3.2.1 to 3.2.10: All of these clauses relate to activities that the owner must comply with as conditions of registration of the gauge in NSW. • Section 3.2.11: This requirement is not in agreement with the current NSW Guidelines for the appointment of Radiation Safety Officers (RSO) and Committees. See General Comments. • Section 3.2.3: A subclause should be added here to require that the Owner must document the results of the examination, including all observations and radiation measurements. 	<ul style="list-style-type: none"> • “security” added to clause 1.3. • “/” changed to “or”. Should cover. • Extra paragraph added under Section 2 of the Safety Guide. • The WG did not believe that the wording of this Section was ambiguous. Employers have a “duty of care” under various OH&S legislation. The various definitions of “supplier” and “Responsible Person” should cover other aspect of this comment. • The WG considered that it is irrelevant whether the advice is in writing or not, as long as it is given. This is particularly the case given the long service life of the gauges. The RP must advise the RRA of what they intend to do with it at the end of its useful life, and that should cover the problem. • Noted. • Noted. • This point is covered under clause 3.2.12(b).

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		<ul style="list-style-type: none"> • Section 3.2.6 (a): This clause is currently too restrictive and does not allow for minor or immediate repairs to be carried out on the gauge. • Section 3.2.9: This clause is redundant as the users are supposed to be licensed and these are usual conditions of a licence. • Section 3.3.3 & 3.3.4 Insert after RSO 'if required to be appointed'. See General Comments. • Section 3.4.2 (d): This is required under NSW legislation for borehole loggers. • Section 3.4.2 (g): In NSW the requirements for the appointment of RSOs do not automatically cover organisations or companies' owning/using gauges. There should be alternative reporting arrangements given here. • Section 4.1: The legislation in NSW does not include all the users of moisture/density gauges as an occupation requiring personal dosimetry only borehole logging. • Section 4.1.1: The term 'other monitoring devices' should be defined further as it covers too great a range of such instruments. It is also recommended that specific reference be made here in footnotes to Optically Stimulated Dosimeters as these are among the most efficient of dosimeters. • Section 4.2.1: The meter should detect neutrons and/or gamma radiation. • Section 4.3.3: Clarify that the 1mSv dose is a trigger to investigate. • Sections 4.3.2 & 4.3.4: Group together as 4.3.3 & 4. For both 4.3.2 and 4.3.4 after Responsible Person must insert 'contact the regulatory authority and comply with any requirements'. Use generic terms as NSW has a 48 hour written reporting requirement (radiation email address or fax) followed by a full report within 10 days, which allows for non-working days especially public holiday periods. The provision is in the NSW legislation covering the management of accidents and should not be included as part of this guideline. 	<ul style="list-style-type: none"> • The WG could not understand why it does not. • The WG disagreed with this statement and believed that it should remain. • The general feeling was that an RSO must be appointed. This statement is therefore redundant. • Noted. • As an RSO will be appointed under the Code, this statement is redundant. • Noted. • The change to 4.1 will cover this point. • The WG felt that to require companies to purchase a neutron monitor at a cost of 1000s of dollars was far too much an impost for the minimal benefit gained. As long as one is accessible, that was considered sufficient. • This radiation dose was in the previous Code and is the figure used by most jurisdictions in Australia already. • The WG believed that the wording given in the Code provided a maximum reporting time. If a given jurisdiction required shorter reporting times, then that would be acceptable as was required by the additional wording, 'or in the time specified by the Relevant Regulatory Authority'. No change was made.

Comment/Date	Person/Organisation Submitting Comment	Summary of Comments Relevant to the Draft PDMG Code and/or RIS	Suggested Change to PDMG Code
		<ul style="list-style-type: none"> • Add, Section 5.1.3 When in the field and not in use, the portable density/moisture gauge must be temporarily stored in accordance with the requirements of section 5.1.1 and 5.1.2 of this Code. Where such storage is not reasonably practicable, the portable density/moisture gauge must be stored in a manner approved by the authority. The above is particularly important in the use of these gauges, and is covered by the 1984 Code. • Section 5.2.5 Change wording as follows: During transport, the gauge, in its case, must be securely stowed in the location that provides... • Section 5.2.8 The relevant emergency response agency must be the first contacted. • Section 6.1 As in the case of section 3.2.6 (a), this section contains no provision for minor non-radiological repairs. • Sections 6.2- 6.3: The provisions in these two sections are already covered in the NSW legislation. • Schedule 3, 3.1.1(a) line 852, change closing of (a) as follows ‘...sources used in portable density/moisture gauges;’ • Glossary, Responsible Person – should this term be used, then a definition of what ‘prescribed radiation facility’ means is required. Also, in (c), registration must be in the name of the owner. • Supplier – This definition is rather awkward. Can’t it be put in simple terms such as: ‘any legal person that supplies sources, including manufacturers, vendors, importers and agents.’ 	<ul style="list-style-type: none"> • The WG believed that requirements for a field store were adequately covered by the general requirements. The Section outlines “performance” criteria for a store and needed to be met whether it was permanent or temporary. • Done. • This is not an ordered item. The emergency response agency would be contacted when and if required. • No change was considered necessary. Who would be qualified to make the judgement on what is a minor non-radiological repair? • Noted. • Done. • “Responsible Person” is an agreed definition. Prescribed radiation facility will come under the legislation that prescribes it. “Supplier” definition has now been changed and incorporates these suggestions.

WG Response to NSW Comment on the PDMG RIS

Comment	Response
The RIS does not comply with the Council of Australian Governments' Guidelines and the Council's agreement for a RIS to meet NSW's requirements as well as that of the Commonwealth.	The ORR has deemed that the RIS met the COAG requirements. The following quote was taken from their e-mail of 20 October 2003: The ORR assess this draft as adequate for consultation, in line with the requirements set out in COAG's Principles and Guidelines for National Standard Setting and Regulatory Action by Ministerial Councils and Standard-Setting Bodies ... It should be noted that in relation to issues resolution agreed at the 4 August 1999 Australian Health Minister's Conference and reproduced in Annex 1 of the draft National Directory for Radiation Protection: It is also expected that, where the process for issue resolution has been followed in resolving a particular issue, there will be a reduced need for individual jurisdictions to complete their own comprehensive regulation impact assessment prior to implementing agreed provision of the National Directory. For example, comprehensive consultations will occur at the national level as provisions are being developed, perhaps requiring only a limited supplementary process in States and Territories.
NSW is unable to adopt the Code until the costs and benefits are quantified.	Noted. See above comment from the National Directory.
The costs of the proposed Code appear to exclude costs for personal monitoring devices and survey meters, which are a new mandatory requirement.	In the 1984 Code, this was a "should". Virtually all jurisdictions currently require PDMG users to use personal monitoring and as such, this would be cost-neutral for users in those jurisdictions. The cost however, is considered minimal. A badge costs approximately \$60 per year and provides invaluable information on radiation doses to the user, particularly in the event of an incident.
There is also no assessment of the costs to government of amending legislation, communicating the proposed changes and issuing revised licences or registrations (if required).	Although the cost to Governments in amending legislation is not specifically covered, the costs of training and familiarisation of regulators is in paragraph 39. It would be extremely difficult to evaluate a cost to any Government in changing legislation as each Government could take a different approach. For example, one Government might adopt the Code directly into their legislation, entailing significant costs in terms of changing Regulations. Another might simply require a change of licence/registration condition involving correspondence to the licensee/registrant.
Appointing a Radiation Safety Officer would impact on small business particularly in rural areas and the cost has not been considered.	This is disagreed. The functions of the RSO are similar to those previously required under Section 2.4 of the 1984 Code of Practice. Such a person should therefore already have been appointed, even if they were not actually called the "Radiation Safety Officer".
...the Code should ... include security and clearly differentiate between security and safety. There will be costs associated with implementing better security.	Security of radioactive sources will be covered under the National Directory. Only a very minor change was made to the Code as a result of the comment. No assessment was considered necessary.
Th(e RIS) appears to assume farmers have sufficient IT and planning skills to prepare a RPP, but if this assumption is invalid then contracting out will occur and costs will be higher;	Noted. The RIS also covers the use of a template radiation protection plan (paragraph 37) that would make it easier (and cheaper) for farmers to prepare the plan.
The costs of implementing the RPPs into future years have not been quantified.	The RPP is a one-off plan, requiring only periodic review. Once in place, ongoing "implementation" costs should be minimal.
No aggregation of costs has been given either for businesses or for government.	Due to the variability of costs, particularly for Government, it would be extremely difficult to aggregate the costs with any meaningful figures. (See comment above relating to legislation changes). Those areas where it was felt that costs could be evaluated meaningfully were done.
The quantified costs and benefits presented do not appear to show a net benefit, and ARPANSA should give a clearer comparison of costs	ORR has approved the RIS as meeting COAG guidelines.

Comment	Response
<p>and benefits to make its case.</p> <p>There are 1100 devices in use or storage. From ARPANSA's comments, each business will spend around \$350 to \$450 per device on a RPP, suggesting aggregate costs of \$385,000 to \$495,000 in the first year. Any ongoing RPP implementation costs would be on top of this.</p> <p>At an annualised rate, these aggregate costs are equivalent to at least \$55,000 to \$70,000 per year over a ten-year period. The identified fiscal cost of an accident involving a portable density/moisture gauge is suggested as "thousands to tens of thousands of dollars", with around one accident occurring every year to year-and-a half. Even if the RPPs completely prevented such accidents, which is unlikely, the fiscal benefits do not appear to outweigh the fiscal costs.</p>	<p>The cost of preparation of the RPP is a one-off cost and does not apply to each, individual device. Paragraph 36 indicates the cost of preparing the RPP where several devices are owned by the one company. If the preparation cost were \$1320 (as in paragraph 36) and the company owned 12 devices, the cost per device would be approximately \$110 per device.</p> <p>Beyond the initial preparation cost, there would only be a cost of the periodic review of the RPP. It is unlikely that that cost would be significant unless there is a major change to radiation protection policy in the future, which would have fiscal ramifications across all radiation industries.</p>
<p>ARPANSA therefore needs to be clearer about the non-fiscal benefits including the potential risks associated with personal radiation exposure.</p>	<p>Noted. To do this however, would need an assessment of the public perception of risk and confidence in the process of the 3 different options. It is believed that the public is more likely to trust and be satisfied with a Government prepared, Government legislated Code of Practice than one prepared and implemented by the industry that is being regulated. Little confidence would be given to a Code that is 20-years out of date and that is being used less and less. To place a fiscal cost/benefit on these options would be extremely difficult.</p>
<p>ARPANSA considers the preparation of template RPPs by the Government to be a lower cost option than businesses preparing their own RPPs from scratch, for the same outcomes. If so, this should be the primary recommendation in paragraph 36 (with costs) rather than left as an un-costed option at paragraph 37, as it would deliver a greater net benefit to the community. If there is a separate reason why this recommendation has not been made, that reason should be stated.</p>	<p>Noted. Some regulators might decide not to do this and the Code does not require them to do so hence there was no recommendation. Other regulators will do this as a matter of course.</p>
<p>In paragraph 37 the recommendation is for 'Government agencies' to prepare templates ie each of the 9 jurisdictions. An alternate is to develop one template through the Radiation Health Committee and make it available at a fee to recover printing and administration costs only. The cost of development could be estimated and shared by all jurisdictions. The advantages would be consistency Australia-wide and organisations with portable items used in more than one jurisdiction would not have to prepare different plans to comply with each jurisdiction.</p>	<p>There is no recommendation for any Government agency to develop such temple RPP. This concept was only introduced into the RIS as some jurisdictions are likely to do it.</p> <p>If it is decided that the RHC (or NUIP(RC)) prepare such a template plan, then so be it. It is likely however, if this option is pursued, that all costs will be borne by RHC (or whichever body prepares the template plan)..</p>