

Solid State Energy Conversion Alliance Core Technology Program



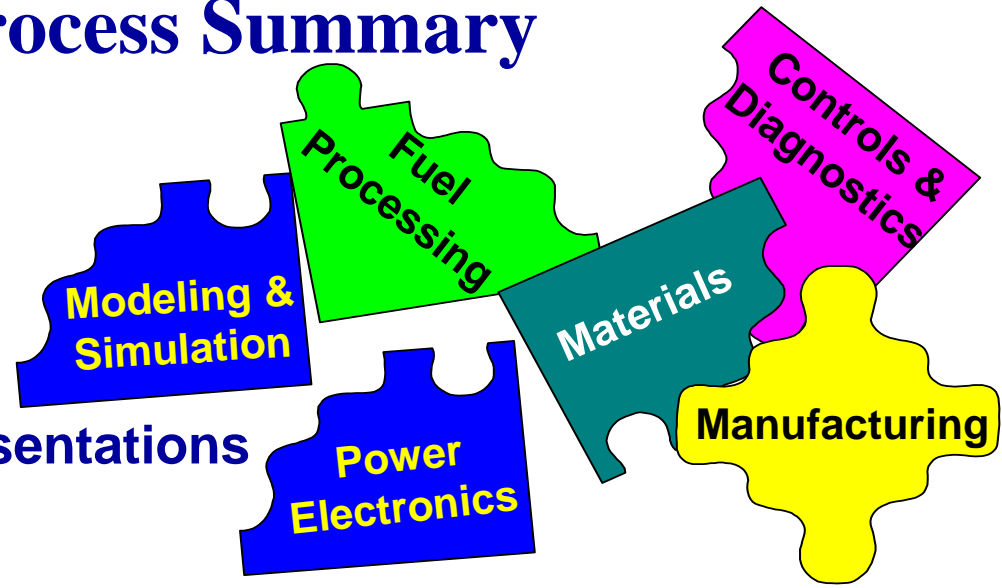
*February 19-20, 2003 Workshop
Peer Review Rating Results Summary*

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Review Process Summary



- **Core Technology Project Presentations**
 - Project Objectives & Results
 - Non-proprietary Information
 - Industry, National Lab & University Participation
- **Verbal & Written Constructive Comments**
 - Written Comments on Peer Review Forms
 - Industry Verbal Feedback at Workshop
- **Core Participant Review & Reply to Comments**
 - Reply to Comment Issues
- **DOE NETL Redirect Projects as Needed**





Peer Review Questions

Science & Technology Issues

1. How relevant are the technical issues being addressed in this project?

Objectives & Approach

2.a. If the objectives are fully met, how significant will be the results of this project?

2.b. How effective is the approach in addressing the technical issues of this project?

Results

3.a. How well do the results/progress relate to the project objectives?

3.b. How important are the results of this work in the advancement of the Core Technology area?

Applicability

4. How beneficial are the results of this work in the development efforts of the Industry Teams?





Peer Review Rating Scale & Definitions

 Not at All  Marginal  Significant  Superior  Outstanding

Not at all – is viewed to be inferior in quality and amount, possibly duplication of existing work

Marginal – provides/likely to provide little useful knowledge or technology advancement

Significant – has/will have an influential impact on the core science and technology

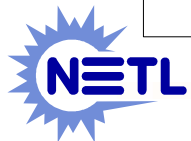
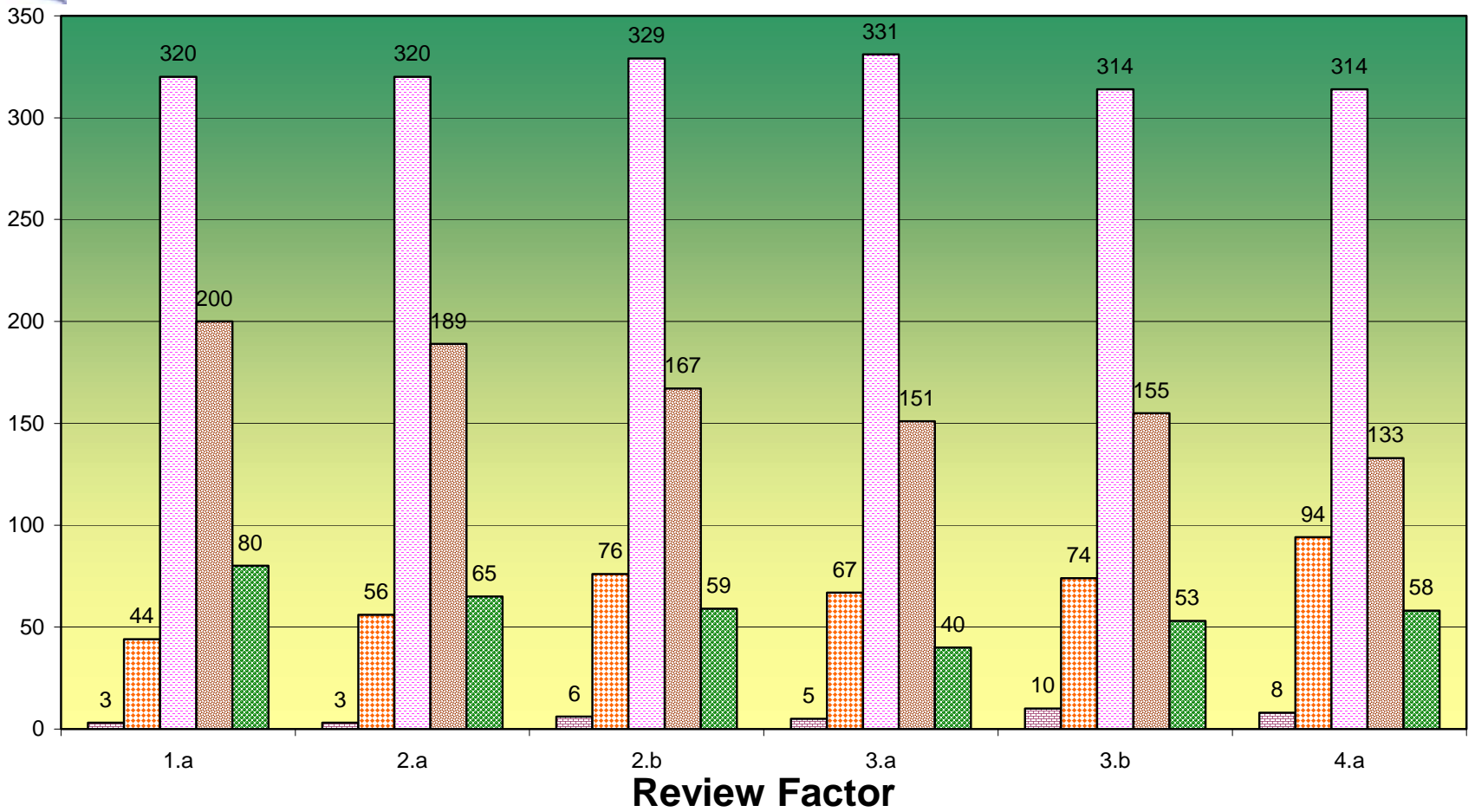
Superior – is considerable in quantity, quality of advancement of core science and technology

Outstanding – marked by eminence and distinction in advancing the state-of-the-art and/or knowledge in the fields of science and engineering



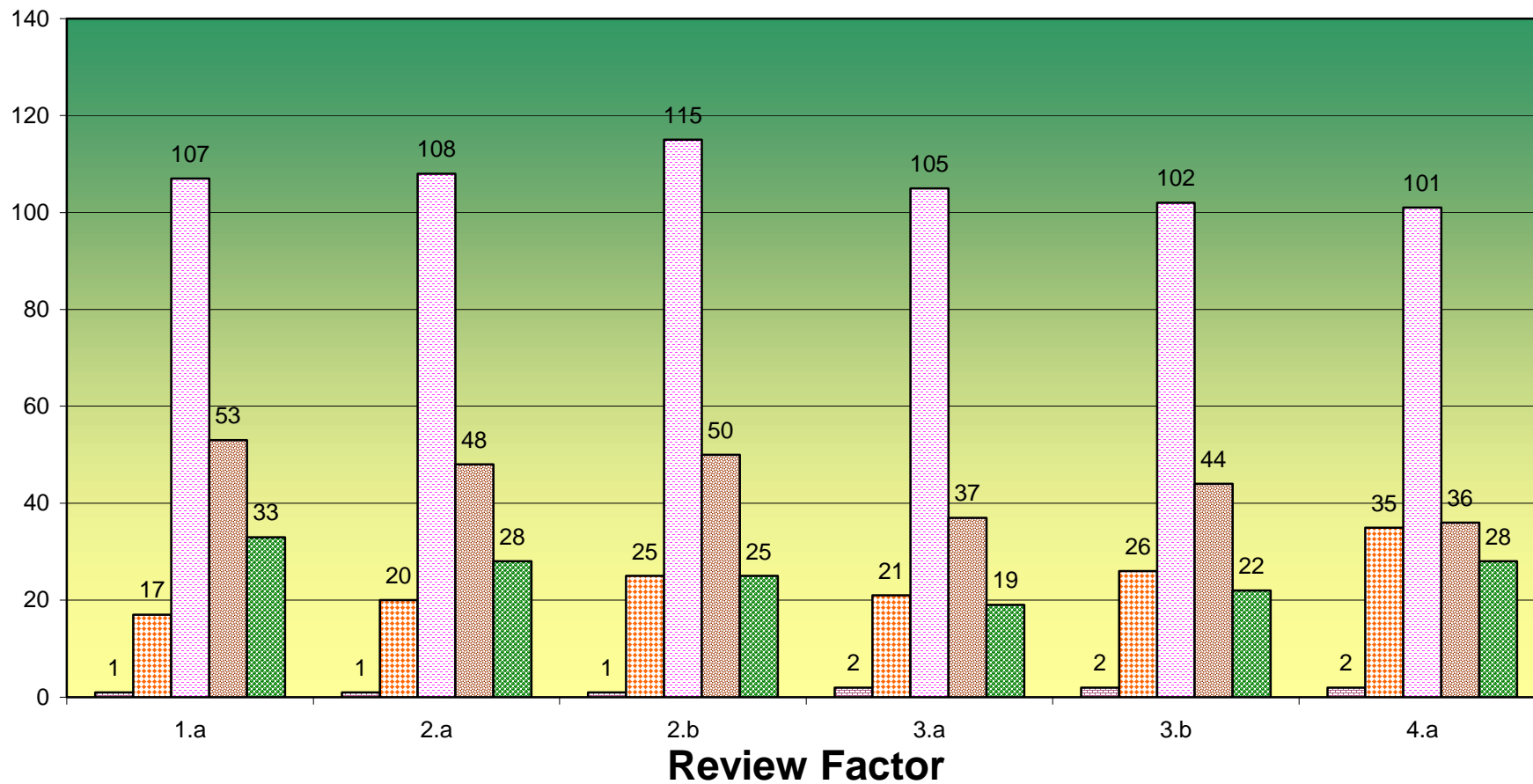


Overall Program Ratings



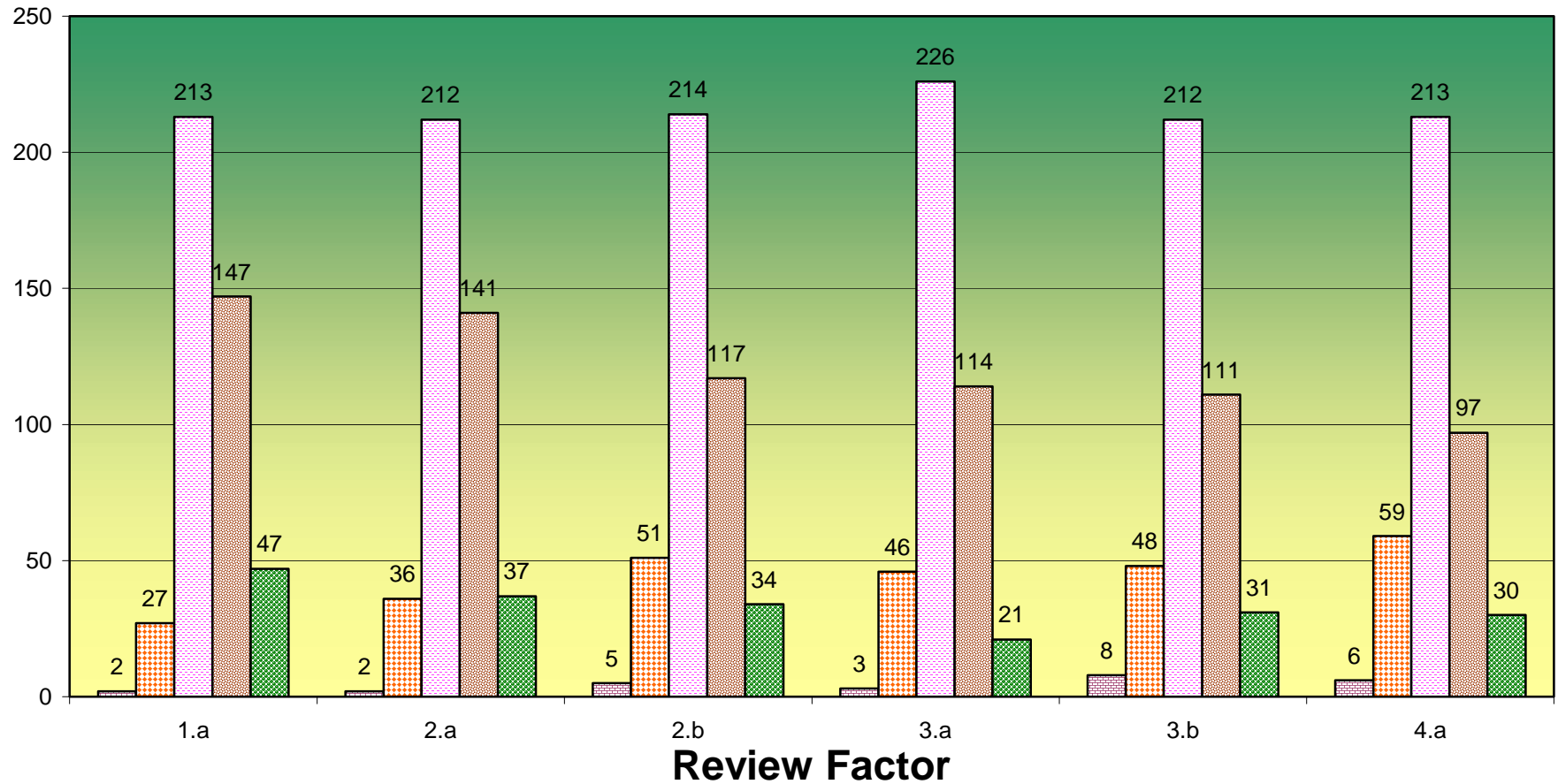


Overall Program SECA Industry Team Ratings





Overall Program Non-SECA Industry Team Ratings





Overall Program Rating Data (1 of 3)

Reviewer Industry Team	No Rating	Not at All	Marginal	Significant	Superior	Outstanding
1.a	86	1	17	107	53	33
2.a	92	1	20	108	48	28
2.b	81	1	25	115	50	25
3.a	113	2	21	105	37	19
3.b	101	2	26	102	44	22
4.a	95	2	35	101	36	28
Sub-Total	568	9	144	638	268	155
Fuel Cell Sys Developer	No Rating	Not at All	Marginal	Significant	Superior	Outstanding
1.a	17	0	0	2	8	0
2.a	17	0	0	3	7	0
2.b	17	0	0	3	7	0
3.a	17	0	0	9	1	0
3.b	17	0	0	8	2	0
4.a	17	0	0	8	2	0
Sub-Total	102	0	0	33	27	0
National Laboratory	No Rating	Not at All	Marginal	Significant	Superior	Outstanding
1.a	101	1	13	52	43	6
2.a	101	1	17	52	40	5
2.b	105	1	18	55	32	5
3.a	103	1	16	68	25	3
3.b	110	2	21	51	27	5
4.a	110	1	23	56	22	4
Sub-Total	630	7	108	334	189	28





Overall Program Rating Data (2 of 3)

University/College	No Rating	Not at All	Marginal	Significant	Superior	Outstanding
1.a	73	0	2	38	54	22
2.a	74	0	7	41	46	21
2.b	74	1	9	51	33	21
3.a	76	1	7	51	40	14
3.b	74	3	8	44	42	18
4.a	77	4	11	41	38	18
Sub-Total	448	9	44	266	253	114
Small Business	No Rating	Not at All	Marginal	Significant	Superior	Outstanding
1.a	98	1	2	79	28	8
2.a	104	1	2	75	28	6
2.b	106	2	13	63	28	4
3.a	116	1	14	58	27	0
3.b	112	2	7	70	22	3
4.a	113	1	13	68	18	3
Sub-Total	649	8	51	413	151	24
Government (non-DOE)	No Rating	Not at All	Marginal	Significant	Superior	Outstanding
1.a	20	0	1	11	12	10
2.a	21	0	1	11	16	5
2.b	22	0	1	14	14	3
3.a	22	0	2	8	18	4
3.b	21	0	3	8	18	4
4.a	22	0	2	11	14	5
Sub-Total	128	0	10	63	92	31





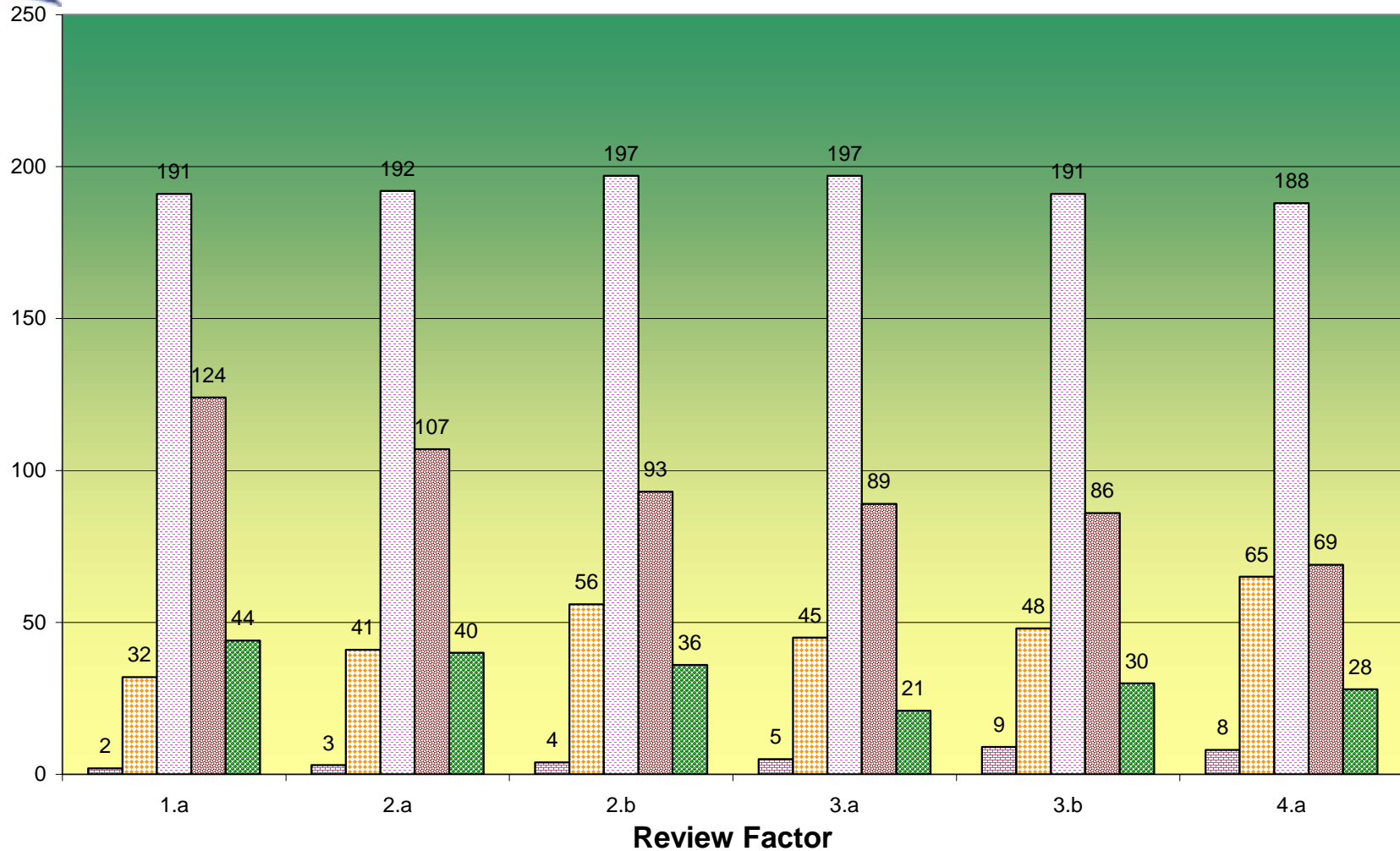
Overall Program Rating Data (3 of 3)

Other	No Rating	Not at All	Marginal	Significant	Superior	Outstanding
1.a	11	0	9	31	2	1
2.a	11	0	9	30	4	0
2.b	11	1	10	28	3	1
3.a	12	0	7	32	3	0
3.b	12	1	9	31	0	1
4.a	12	0	10	29	3	0
Sub-Total	69	2	54	181	15	3
Factor Totals	No Rating	Not at All	Marginal	Significant	Superior	Outstanding
1.a	406	3	44	320	200	80
2.a	420	3	56	320	189	65
2.b	416	6	76	329	167	59
3.a	459	5	67	331	151	40
3.b	447	10	74	314	155	53
4.a	446	8	94	314	133	58
Rating Totals	2594	35	411	1928	995	355
Non-Industry Team Factor Totals	No Rating	Not at All	Marginal	Significant	Superior	Outstanding
1.a	320	2	27	213	147	47
2.a	328	2	36	212	141	37
2.b	335	5	51	214	117	34
3.a	346	3	46	226	114	21
3.b	346	8	48	212	111	31
4.a	351	6	59	213	97	30
Rating Totals	2026	26	267	1290	727	200





Materials & Manufacturing



Not at All Marginal Significant Superior Outstanding



SECA Materials & Manufacturing Rating Data (1 of 3)

Reviewer Industry Team	No Rating	Not at All	Marginal	Significant	Superior	Outstanding
1.a	39	1	11	59	30	14
2.a	43	1	14	57	26	13
2.b	35	1	16	63	25	14
3.a	56	2	12	58	19	7
3.b	47	2	15	59	23	8
4.a	45	2	23	58	16	10
Sub-Total	265	9	91	354	139	66
Fuel Cell Sys Developer	No Rating	Not at All	Marginal	Significant	Superior	Outstanding
1.a	10	0	0	1	3	0
2.a	10	0	0	2	2	0
2.b	10	0	0	2	2	0
3.a	10	0	0	4	0	0
3.b	10	0	0	3	1	0
4.a	10	0	0	4	0	0
Sub-Total	60	0	0	16	8	0
National Laboratory	No Rating	Not at All	Marginal	Significant	Superior	Outstanding
1.a	35	0	13	33	25	6
2.a	35	1	15	34	22	5
2.b	38	0	16	33	20	5
3.a	37	1	13	44	14	3
3.b	42	2	18	31	14	5
4.a	44	1	20	30	13	4
Sub-Total	231	5	95	205	108	28





SECA Materials & Manufacturing Rating Data (2 of 3)

University/College	No Rating	Not at All	Marginal	Significant	Superior	Outstanding
1.a	19	0	2	26	37	14
2.a	19	0	6	27	31	15
2.b	20	1	8	34	21	14
3.a	21	1	5	35	27	9
3.b	20	3	6	31	25	13
4.a	23	4	8	30	22	11
Sub-Total	122	9	35	183	163	76
Small Business	No Rating	Not at All	Marginal	Significant	Superior	Outstanding
1.a	32	1	2	51	21	5
2.a	37	1	2	51	17	4
2.b	37	2	12	41	18	2
3.a	45	1	11	37	18	0
3.b	43	2	4	47	14	2
4.a	45	1	9	46	10	1
Sub-Total	239	8	40	273	98	14
Government (non-DOE)	No Rating	Not at All	Marginal	Significant	Superior	Outstanding
1.a	10	0	0	7	7	4
2.a	11	0	0	7	7	3
2.b	12	0	0	9	6	1
3.a	12	0	1	4	9	2
3.b	11	0	1	5	9	2
4.a	12	0	1	5	8	2
Sub-Total	68	0	3	37	46	14





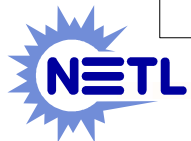
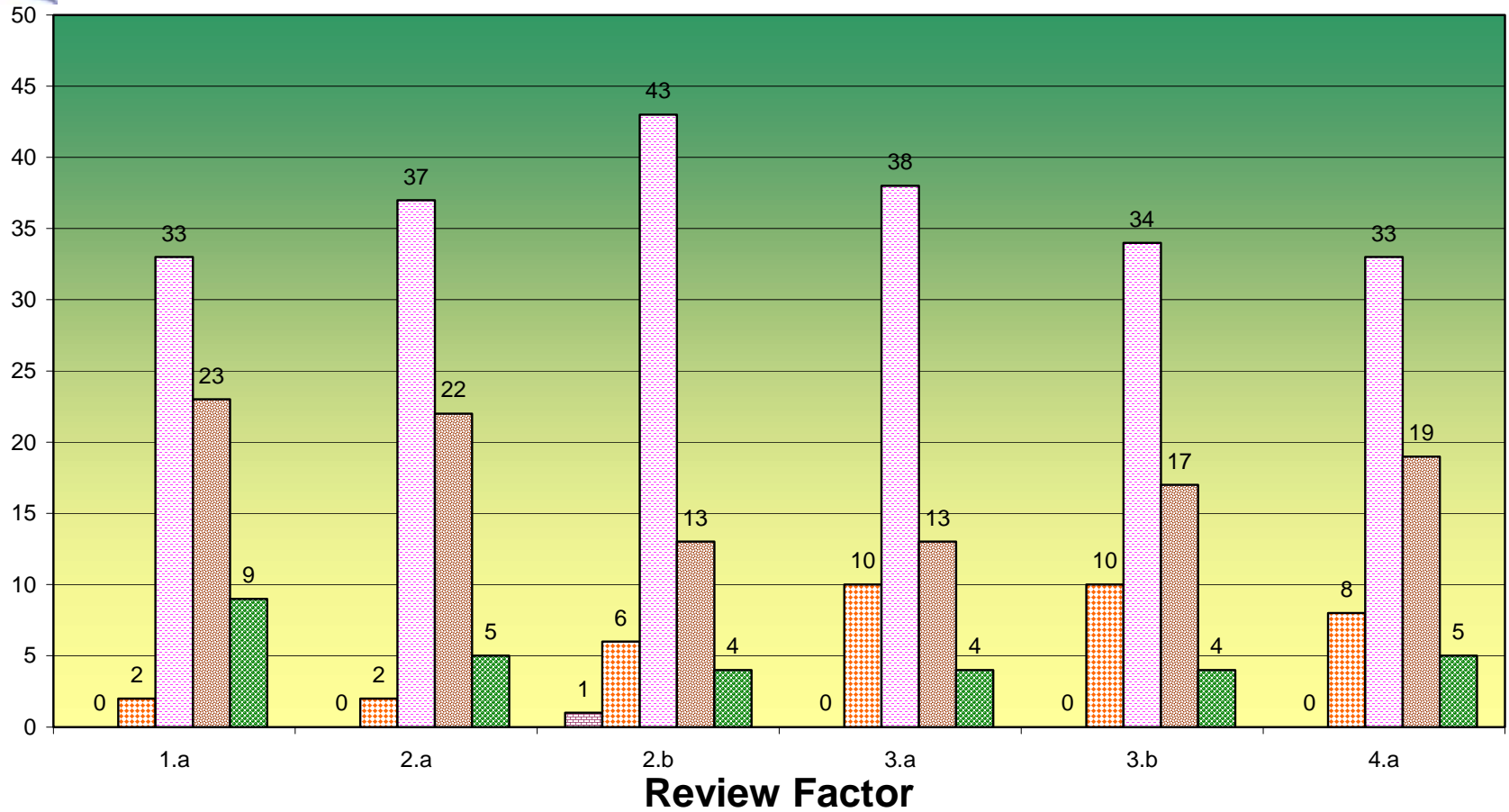
SECA Materials & Manufacturing Rating Data (3 of 3)

Other	No Rating	Not at All	Marginal	Significant	Superior	Outstanding
1.a	8	0	4	14	1	1
2.a	8	0	4	14	2	0
2.b	8	0	4	15	1	0
3.a	8	0	3	15	2	0
3.b	9	0	4	15	0	0
4.a	9	0	4	15	0	0
Sub-Total	50	0	23	88	6	1
Factor Totals	No Rating	Not at All	Marginal	Significant	Superior	Outstanding
1.a	153	2	32	191	124	44
2.a	163	3	41	192	107	40
2.b	160	4	56	197	93	36
3.a	189	5	45	197	89	21
3.b	182	9	48	191	86	30
4.a	188	8	65	188	69	28
Rating Totals	1035	31	287	1156	568	199
Non-Industry Team Factor Totals	No Rating	Not at All	Marginal	Significant	Superior	Outstanding
1.a	114	1	21	132	94	30
2.a	120	2	27	135	81	27
2.b	125	3	40	134	68	22
3.a	133	3	33	139	70	14
3.b	135	7	33	132	63	22
4.a	143	6	42	130	53	18
Rating Totals	770	22	196	802	429	133





Fuel Processing





Fuel Processing Rating Data (1 of 3)

Reviewer	No Rating	Not at All	Marginal	Significant	Superior	Outstanding
Industry Team						
1.a	10	0	0	11	5	7
2.a	11	0	0	14	5	3
2.b	10	0	3	14	4	2
3.a	12	0	2	12	5	2
3.b	12	0	3	10	6	2
4.a	12	0	2	10	6	3
Sub-Total	67	0	10	71	31	19
Fuel Cell Sys Developer						
1.a	1	0	0	0	2	0
2.a	1	0	0	0	2	0
2.b	1	0	0	0	2	0
3.a	1	0	0	2	0	0
3.b	1	0	0	2	0	0
4.a	1	0	0	1	1	0
Sub-Total	6	0	0	5	7	0
National Laboratory						
1.a	12	0	0	8	4	0
2.a	12	0	1	6	5	0
2.b	12	0	2	7	3	0
3.a	12	0	2	8	2	0
3.b	12	0	2	7	3	0
4.a	12	0	1	9	2	0
Sub-Total	72	0	8	45	19	0





Fuel Processing Rating Data (2 of 3)

University/College	No Rating	Not at All	Marginal	Significant	Superior	Outstanding
1.a	9	0	0	3	7	2
2.a	9	0	0	6	4	2
2.b	9	0	0	8	2	2
3.a	9	0	1	6	3	2
3.b	9	0	0	5	5	2
4.a	9	0	1	4	5	2
Sub-Total	54	0	2	32	26	12
Small Business	No Rating	Not at All	Marginal	Significant	Superior	Outstanding
1.a	12	0	0	9	3	0
2.a	12	0	0	8	4	0
2.b	12	0	1	10	1	0
3.a	12	0	3	8	1	0
3.b	12	0	3	8	1	0
4.a	12	0	3	7	2	0
Sub-Total	72	0	10	50	12	0
Government (non-DOE)	No Rating	Not at All	Marginal	Significant	Superior	Outstanding
1.a	3	0	1	0	2	0
2.a	3	0	0	1	2	0
2.b	3	0	0	2	1	0
3.a	3	0	1	0	2	0
3.b	3	0	1	0	2	0
4.a	3	0	0	0	3	0
Sub-Total	18	0	3	3	12	0





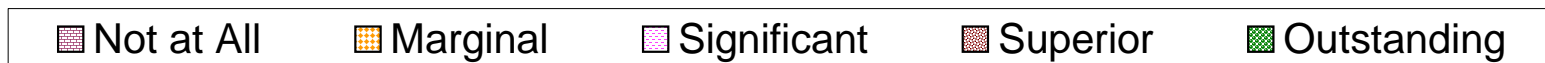
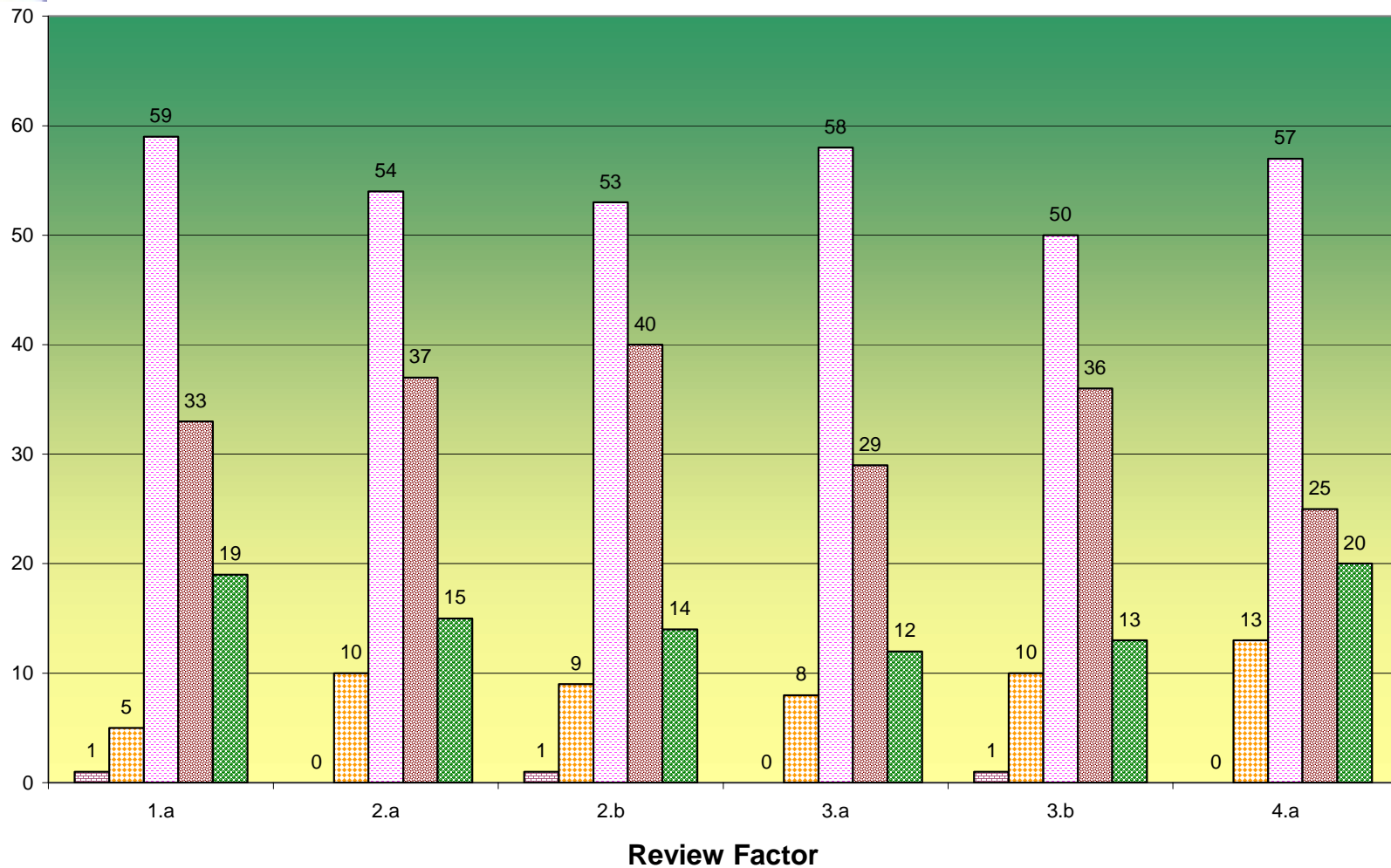
Fuel Processing Rating Data (3 of 3)

Other	No Rating	Not at All	Marginal	Significant	Superior	Outstanding
1.a	3	0	1	2	0	0
2.a	3	0	1	2	0	0
2.b	3	1	0	2	0	0
3.a	3	0	1	2	0	0
3.b	3	0	1	2	0	0
4.a	3	0	1	2	0	0
Sub-Total	18	1	5	12	0	0
Factor Totals	No Rating	Not at All	Marginal	Significant	Superior	Outstanding
1.a	50	0	2	33	23	9
2.a	51	0	2	37	22	5
2.b	50	1	6	43	13	4
3.a	52	0	10	38	13	4
3.b	52	0	10	34	17	4
4.a	52	0	8	33	19	5
Rating Totals	307	1	38	218	107	31
Non-Industry Team Factor Totals	No Rating	Not at All	Marginal	Significant	Superior	Outstanding
1.a	40	0	2	22	18	2
2.a	40	0	2	23	17	2
2.b	40	1	3	29	9	2
3.a	40	0	8	26	8	2
3.b	40	0	7	24	11	2
4.a	40	0	6	23	13	2
Rating Totals	240	1	28	147	76	12





Modeling & Simulation





Modeling & Simulation Rating Data (1 of 3)

Reviewer	No Rating	Not at All	Marginal	Significant	Superior	Outstanding
Industry Team						
1.a	15	0	3	21	8	8
2.a	15	0	4	19	9	8
2.b	11	0	4	19	14	7
3.a	19	0	4	18	7	7
3.b	17	0	4	16	10	8
4.a	15	0	4	17	8	11
Sub-Total	92	0	23	110	56	49
Fuel Cell Sys Developer						
1.a	4	0	0	0	1	0
2.a	4	0	0	0	1	0
2.b	4	0	0	0	1	0
3.a	4	0	0	1	0	0
3.b	4	0	0	1	0	0
4.a	4	0	0	1	0	0
Sub-Total	24	0	0	3	3	0
National Laboratory						
1.a	18	1	0	9	12	0
2.a	18	0	1	9	12	0
2.b	19	1	0	12	8	0
3.a	18	0	1	14	7	0
3.b	20	0	1	10	9	0
4.a	18	0	2	14	6	0
Sub-Total	111	2	5	68	54	0





Modeling & Simulation Rating Data (2 of 3)

University/College	No Rating	Not at All	Marginal	Significant	Superior	Outstanding
1.a	15	0	0	9	7	4
2.a	15	0	1	8	8	3
2.b	15	0	1	8	7	4
3.a	15	0	1	9	7	3
3.b	15	0	2	7	9	2
4.a	15	0	2	6	8	4
Sub-Total	90	0	7	47	46	20
Small Business	No Rating	Not at All	Marginal	Significant	Superior	Outstanding
1.a	24	0	0	10	3	3
2.a	25	0	0	10	3	2
2.b	27	0	0	7	5	1
3.a	29	0	0	7	4	0
3.b	27	0	0	8	4	1
4.a	26	0	1	9	2	2
Sub-Total	158	0	1	51	21	9
Government (non-DOE)	No Rating	Not at All	Marginal	Significant	Superior	Outstanding
1.a	2	0	0	2	2	4
2.a	2	0	1	2	3	2
2.b	2	0	1	1	4	2
3.a	2	0	0	2	4	2
3.b	2	0	1	1	4	2
4.a	2	0	1	3	1	3
Sub-Total	12	0	4	11	18	15





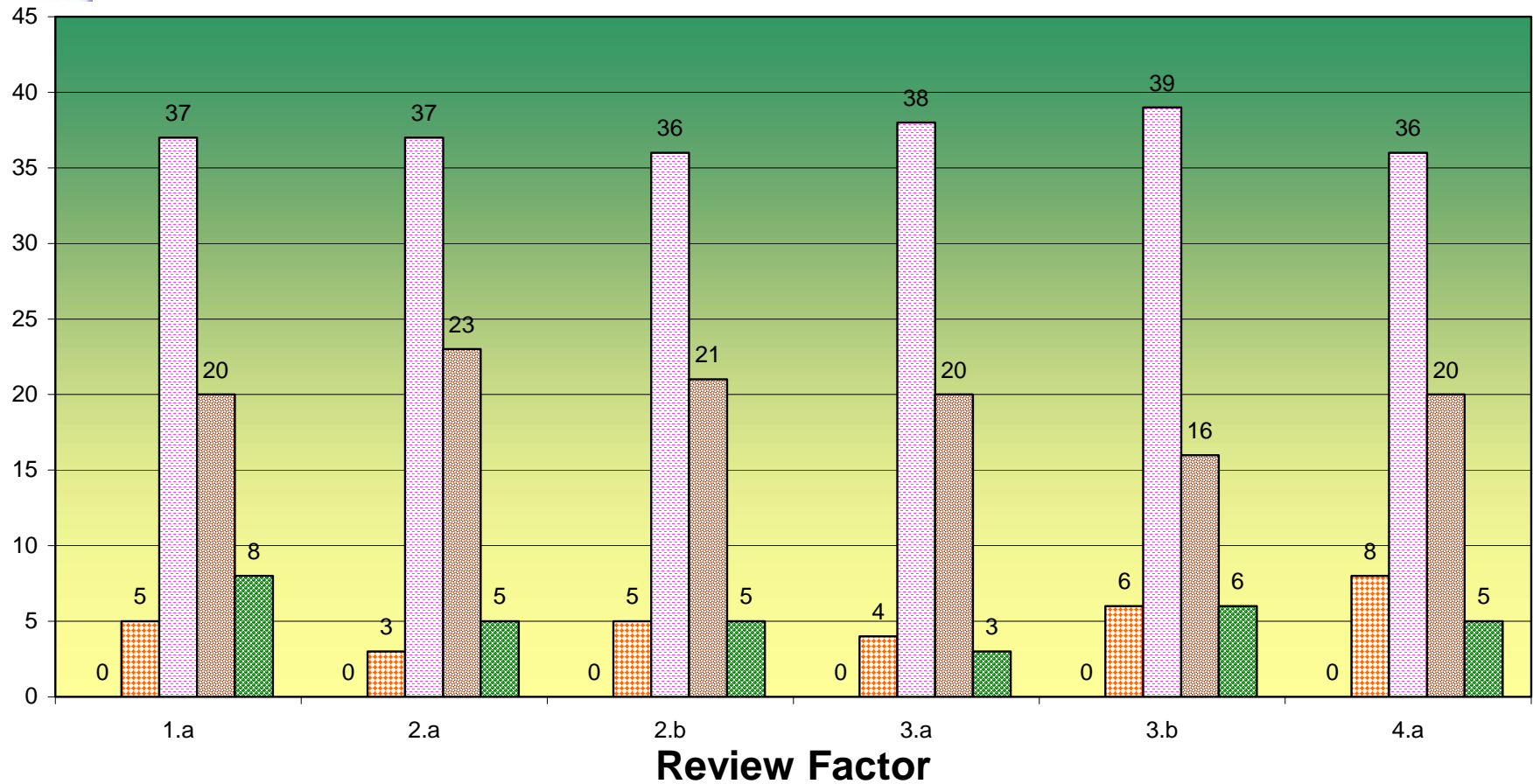
Modeling & Simulation Rating Data (3 of 3)

Other	No Rating	Not at All	Marginal	Significant	Superior	Outstanding
1.a	0	0	2	8	0	0
2.a	0	0	3	6	1	0
2.b	0	0	3	6	1	0
3.a	1	0	2	7	0	0
3.b	0	1	2	7	0	0
4.a	0	0	3	7	0	0
Sub-Total	1	1	15	41	2	0
Factor Totals	No Rating	Not at All	Marginal	Significant	Superior	Outstanding
1.a	78	1	5	59	33	19
2.a	79	0	10	54	37	15
2.b	78	1	9	53	40	14
3.a	88	0	8	58	29	12
3.b	85	1	10	50	36	13
4.a	80	0	13	57	25	20
Rating Totals	488	3	55	331	200	93
Non-Industry Team Factor Totals	No Rating	Not at All	Marginal	Significant	Superior	Outstanding
1.a	63	1	2	38	25	11
2.a	64	0	6	35	28	7
2.b	67	1	5	34	26	7
3.a	69	0	4	40	22	5
3.b	68	1	6	34	26	5
4.a	65	0	9	40	17	9
Rating Totals	396	3	32	221	144	44





Power Electronics, Controls & Diagnostics





Power Electronics, Controls & Diagnostics Rating Data (1 of 3)

Reviewer	No Rating	Not at All	Marginal	Significant	Superior	Outstanding
Industry Team						
1.a	22	0	3	16	10	4
2.a	23	0	2	18	8	4
2.b	25	0	2	19	7	2
3.a	26	0	3	17	6	3
3.b	25	0	4	17	5	4
4.a	23	0	6	16	6	4
Sub-Total	144	0	20	103	42	21
Fuel Cell Sys Developer						
1.a	2	0	0	1	2	0
2.a	2	0	0	1	2	0
2.b	2	0	0	1	2	0
3.a	2	0	0	2	1	0
3.b	2	0	0	2	1	0
4.a	2	0	0	2	1	0
Sub-Total	12	0	0	9	9	0
National Laboratory						
1.a	36	0	0	2	2	0
2.a	36	0	0	3	1	0
2.b	36	0	0	3	1	0
3.a	36	0	0	2	2	0
3.b	36	0	0	3	1	0
4.a	36	0	0	3	1	0
Sub-Total	216	0	0	16	8	0





Power Electronics, Controls & Diagnostics Rating Data (2 of 3)

University/College	No Rating	Not at All	Marginal	Significant	Superior	Outstanding
1.a	30	0	0	0	3	2
2.a	31	0	0	0	3	1
2.b	30	0	0	1	3	1
3.a	31	0	0	1	3	0
3.b	30	0	0	1	3	1
4.a	30	0	0	1	3	1
Sub-Total	182	0	0	4	18	6
Small Business	No Rating	Not at All	Marginal	Significant	Superior	Outstanding
1.a	30	0	0	9	1	0
2.a	30	0	0	6	4	0
2.b	30	0	0	5	4	1
3.a	30	0	0	6	4	0
3.b	30	0	0	7	3	0
4.a	30	0	0	6	4	0
Sub-Total	180	0	0	39	20	1
Government (non-DOE)	No Rating	Not at All	Marginal	Significant	Superior	Outstanding
1.a	5	0	0	2	1	2
2.a	5	0	0	1	4	0
2.b	5	0	0	2	3	0
3.a	5	0	0	2	3	0
3.b	5	0	0	2	3	0
4.a	5	0	0	3	2	0
Sub-Total	30	0	0	12	16	2





Power Electronics, Controls & Diagnostics Rating Data (3 of 3)

Other	No Rating	Not at All	Marginal	Significant	Superior	Outstanding
1.a	0	0	2	7	1	0
2.a	0	0	1	8	1	0
2.b	0	0	3	5	1	1
3.a	0	0	1	8	1	0
3.b	0	0	2	7	0	1
4.a	0	0	2	5	3	0
Sub-Total	0	0	11	40	7	2
Factor Totals	No Rating	Not at All	Marginal	Significant	Superior	Outstanding
1.a	125	0	5	37	20	8
2.a	127	0	3	37	23	5
2.b	128	0	5	36	21	5
3.a	130	0	4	38	20	3
3.b	128	0	6	39	16	6
4.a	126	0	8	36	20	5
Rating Totals	764	0	31	223	120	32
Non-Industry Team Factor Totals	No Rating	Not at All	Marginal	Significant	Superior	Outstanding
1.a	103	0	2	21	10	4
2.a	104	0	1	19	15	1
2.b	103	0	3	17	14	3
3.a	104	0	1	21	14	0
3.b	103	0	2	22	11	2
4.a	103	0	2	20	14	1
Rating Totals	620	0	11	120	78	11

